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

RELATED CORRESPONDENCE

August 16, 1984

DOCKETED
USNRC

Peter B. Bloch, Esq. 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

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OFFICE OF SECRETARY
DOCKETING & SERVICE
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Administrative Judge
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Oklahoma State University
Stillwater, OK 74078

DOCKET NUMBER
PROD. & UTIL. FAC...

50-445/446 OL

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

Dear Administrative Judges:

The NRC Staff ("Staff") has recently issued Inspection Reports 84-17 (June 20, 1984), 84-05 (June 21, 1984), and 84-10 (June 21, 1984). Inspection Report 84-17 discusses the Staff's inspection of the Applicants' disassembly, inspection and reassembly of one of the Transamerica Delaval, Incorporated ("TDI") emergency diesel generators for the Comanche Peak Steam Electric Station ("CPSES"). Inspection Report 84-05 sets forth the Staff's inspection and evaluation of allegations relating to the fabrication of pipe supports and pipe restraints. Inspection Report 84-10 discusses the Staff's walkdown inspection of the Cable Spread Room. Copies of these inspection reports are enclosed for the information of the Board.

Sincerely,

Geary S. Mizuno
Counsel for NRC Staff

Enclosure: As stated

cc w/o encl.: Remainder of Service List

8408270065 840816
PDR ADDCK 05000445
G PDR

7567

6-20-84

In Reply Refer To:
Docket: 50-445/84-17

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 a special inspection conducted by W. F. Smith, Resident Inspector, of this office during the period February 20 through May 25, 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. B. R. Clements, J. C. Kuydendall and other members of your staff at the conclusion of the inspection.

Areas examined during the inspection included the teardown, inspection and reassembly of Unit 1 Train A Emergency Diesel Generator in accordance with the Transamerica Delaval recertification program.

Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspector. These findings are documented in the enclosed inspection report.

During this inspection, it was found that one of your activities was in violation of NRC requirements. However, this violation will be included in a Notice of Violation which will be transmitted with future NRC Inspection Report 50-445/84-18. No response to the violation is required at this time.

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).

Texas Utilities Electric Company

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

Sincerely,

Richard L. Bangart, Director
RIV CPSES Task Force

Richard L. Bangart, Director
RIV CPSES Task Force

Enclosures:

Appendix - NRC Inspection Report
50-445/84-17

cc w/enclosures:

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

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-17

Docket: 50-445

Category A2

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

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

Inspection at: Glen Rose, Texas

Inspection Conducted: February 20, 1984 - May 25, 1984

Inspector: *for* *D M Hunnicutt* *6/13/84*
W. F. Smith, Resident Inspector (RRI) Date

Approved: *D M Hunnicutt* *6/13/84*
D. M. Hunnicutt, Team Leader, Comanche Peak Date
Task Force

Inspection Summary

Inspection Conducted February 20 - May 25, 1984 (Report 50-445/84-17)

Areas Inspected: Special, announced inspection of work and documentation associated with the CPSES site portion of the recertification program implemented on Unit 1 Train A Emergency Diesel Generator, Serial Number 76001, manufactured by Transamerica Delaval, Incorporated (TDI). The inspection involved 204 inspector-hours onsite by one NRC inspector.

Results: No violations or deviations were identified. NRC Resident Inspection Report 50-445/84-15 has previously reported one deviation and one unresolved item related to the Emergency Diesel Generator recertification program. They are discussed in detail in NRC Inspection Report 84-15 and briefly in this report.

DETAILS

1. Persons Contacted

Principle Licensee Employees

*B. R. Clements, Vice President, Nuclear Operations
*J. C. Kuykendall, Manager, Nuclear Operations
*R. A. Jones, Manager, Plant Operations
*D. E. Diviney, Operations Quality Assurance Supervisor
*R. E. Camp, Startup Manager
*Jim Smith, Operations QA
*H. A. Lancaster, Startup QA
*J. T. Merritt, Asst. Project General Manager
*J. A. Roberts, Const. Startup Turnover Supervisor
*T. L. Gosdin, Support Services Supervisor
D. A. London, Electrical Startup Group Leader
John Maxwell, Operations Quality Control Supervisor
C. W. Smith, Mechanical Maintenance Supervisor
Dean Lystad, Maintenance Supervisor
Billy Snellgrove, Quality Control Inspector, Level III
M. R. Blevins, Maintenance Superintendent
G. E. Jergins, Mechanical Maintenance Engineer
Duerk Reimer, Maintenance Engineer

Others

V. Lyndstrom, Transamerica DeLaval, Inc., Technical Representative

The NRC inspector also interviewed other licensee employees during this inspection period.

*Denotes those present during the exit interview.

2. Emergency Diesel Generator Inspection (General Comments)

The emergency diesel generators (EDGs) at CPSES were supplied by Transamerica DeLaval, Incorporated (TDI). There are four machines; two per unit. TDI has provided 53 other emergency diesel generators for 14 other nuclear power plant sites in the United States. On August 12, 1983, the main crankshaft on one of the three EDG's at Shoreham Nuclear Power Station broke into two pieces during a load test. There have been several 10 CFR Part 21 reports issued by TDI reflecting a variety of minor and major defects; i.e., cracks in piston skirts, push rod cracks, governor drive coupling failures, potential failures in fuel lines, and dimensional problems with component fasteners and dowel pins. These

defects are generic in nature, even though there are some design differences between EDGs at CPSES and those at other plants. During the course of the evaluation of the Shoreham failure and the repairs of the Shoreham EDGs, information related to the operating history of TDI engines and a QA program of the manufacturer has been identified which calls into question the reliability of all TDI diesels. As a result of the foregoing and the generic implication involved, an "Owners Group" consisting of representatives from affected nuclear power plants was formed for the purpose of investigating all aspects of quality and reliability of the EDG's supplied by TDI.

In anticipation of comprehensive internal inspections and tests, and to facilitate correction of already known defects, the licensee commenced teardown of the first machine (EDG Serial 76001) on February 20, 1984. NRC inspection efforts include (but are not limited to) observation of the work in progress, review of procedures used and compliance thereto, and tracking the work to ensure the plan is followed and adequately documented.

This project is being accomplished by Texas Utilities Generating Company (TUGCO) Maintenance Department Personnel, rather than site construction (Brown & Root) personnel. This provided TUGCO with a unique opportunity to gain valuable experience in the maintenance aspects of the EDG and an opportunity to exercise the written instructions that had been prepared for future maintenance outages.

The overall performance and attitude of persons associated directly with the project were excellent. The work was accomplished in a professional, controlled manner as would be expected for safety-related equipment. Care was taken to segregate and properly identify components as they were removed from the EDG. Upon reinstallation emphasis was placed upon cleanliness, foreign material exclusion, and protection of vulnerable surfaces.

Procedures required changes, mainly in the sequence of events. The changes were incorporated into the procedures such that work on the next EDG will be performed more efficiently. Documentation of findings, with few exceptions as described below, were complete and legible.

At the onset of the project there was some disarray, as TUGCO experienced difficulty in reaching a clear understanding of what the Owners' Group needed inspected and to what acceptance criteria. By the end of this inspection period, the project was well defined in the form of 60 inspection plans.

3. Chronology of Events --

Due to the length of this inspection period, a weekly summary of events is provided below. The RRI inspected work in progress on a daily basis, most of the time.

February 20 - 26:

The NRC inspector reviewed the initial work authorizing documents and procedures to be used for the EDG teardown. All appeared to be in order except that the licensee is using "Mechanical Maintenance Instructions" which are not approved by the Safety Operations Review Committee (SORC). The licensee contends that a document which specifies or describes detailed work activities which are unique to a particular department or section, and does not have significant impact on other departments or sections, does not require SORC approval. The RRI consider this a deviation from commitments made in the FSAR, and as such have addressed this in NRC Inspection Report 50-445/84-15 as Deviation 8415-01.

The RRI witnessed removal of selected cylinder head subcovers, push rods, and cylinder heads. Good work practices were used with emphasis on foreign material exclusion.

February 27 - March 4:

By the end of this week all heads, push rods, pistons and connecting rods were removed. The RRI witnessed removal of pistons and connecting rods and noted that care was being taken not to score the cylinder liner walls. Each piston and connecting rod assembly was carefully wrapped and immediately shipped to the shop for inspection and evaluation. The TDI service representative was present and indicated that he will be on hand full time to support the disassembly and reassembly process.

March 5 - 11

The RRI observed cleaning of the block-to-head surfaces and removal of the two turbochargers. This work was completed by the end of the week. Also, the RRI witnessed measurement of crankshaft deflection. Results were satisfactory, confirming that the crankshaft has the proper cold "sag," a cold preliminary indication that the engine block is properly mounted. The final check will be performed while the engine is at normal operating temperature after reassembly and operation.

In the maintenance shop the RRI witnessed attempts to determine cylinder head valve guide clearances. The procedure required a "rocking" technique with a dial indicator as specified in the TDI manual. The mechanics had difficulty obtaining consistent results, consulted with Maintenance Engineering, obtained appropriate procedure changes, and resumed with another method using inside and outside micrometers to get accurate results. This method proved successful, and satisfactory results were achieved.

March 12 - 18:

The NRC inspector observed Failure Analysis Associates (FaAA) personnel taking measurements of the rotor and journals for the turbochargers. The FaAA representative indicated that they were experiencing difficulty in obtaining design drawings with the precise dimensions needed for the stress analyses FaAA intended to perform. FaAA was also observed conducting Eddy Current tests on the crankshaft. The NRC inspector checked the calibration labels and noted that the equipment being used was in current calibration.

March 19 - 25:

During this week the licensee removed all of the cylinder liners in accordance with the appropriate work instructions. The RRI witnessed the removal of one liner, and noted no deficiencies. In the shop, the cylinder head fire decks and valve seats were being liquid penetrant and magnaflux tested. Four of four heads checked had cracks in the fire deck and indications on the valve seats. The licensee opted to replace all of the heads and inspect the remaining 12 heads later.

During the inspection of the fire decks, the licensee found that liquid penetrant testing was difficult because of the surface roughness and subsurface cracks were not revealed. Accordingly, magnetic particle testing techniques were utilized with better results, i.e., one subsurface crack was found where the head apparently had been repair welded by TDI.

March 26 - April 1:

The RRI witnessed liquid penetrant testing of the cylinder liner lands on the engine block where the cylinder liners seat. Three significant linear indications were found in the area of 4R, 5R and 6L cylinders. The licensee considers, after subsequent thorough investigation and measurement, that the indications are casting defects of no significance rather than stress-induced failures. This will be confirmed or denied by later inspection after some hours of operation are put on the EDG.

At this point in the inspection the RRI reviewed the documentation of findings being generated by the licensee. Each inspection plan (IP) identified by the Owners' Group has its own package. Each package contains a copy of the work authorizing document, the inspection plan, an inspection report detailing what to look for and a place to record the results, non-conformance reports, photos, and any other pertinent data. Each package is being retained by Quality Control, and when ready for

Owners' Group review, a copy of the package is submitted. As of this week, about 40 of 60 inspection plans have been identified to the licensee by the Owners' Group. This apparent slow influx of information is causing the licensee minor planning problems, and as such has had an adverse effect on projected work schedules.

Also during this week, the RRI witnessed liquid penetrant inspections of the engine base main bearing mating surfaces. No significant findings were identified by this inspection. The mechanics experienced difficulty in removing No. 1 bearing cap because the engine block casting interfered with the hydraulic torque tool. With the assistance of the TDI representative, the tool was modified to accomplish the task. >

The RRI observed nondestructive testing of the aluminum crank bearing inserts. These inserts had a multitude of liquid penetrant indications, and an apparent sponginess or porosity which was readily visible after acid etching the inserts. Radiographs confirmed the porosity and showed some minor voids. Eleven out of sixteen insert sets were rejected and therefore replaced.

April 2-8:

During this week, some of the new cylinder heads arrived. There was some controversy between the licensee and TDI, over the liquid penetrant inspection acceptance criteria, when the licensee performed source inspection of the new head fire decks and valve seats. This was later resolved and an acceptable set of heads became available.

During dimensional inspection of the cylinder liners, the licensee noted that the thickness of the upper liner lip caused the liner-to-head contact surface to protrude out of the block from 0.003" to 0.011". The significance of this is that when the head rests on the liner, the engine block land that the liner seats on is exposed to stresses from head bolt torque that could cause the land to be overstressed. TDI directed 0.000" to 0.003" protrusion by revision of the drawing, thus, the licensee machined the liners to obtain a proper fit.

The RRI observed removal of the mounting plate associated with the overspeed governor and engine-mounted fuel booster pump. The licensee had difficulty removing this part because the dowel pins were rusty and TDI did not provide jacking screws in the plate. Pry bars and wedges were used along with a mechanic tapping on the plate from inside the engine with a brass bar. These efforts damaged some adjacent tubing which was subsequently replaced.

April 9 - 15

While inspecting the engine internals via the overspeed governor mounting plate opening, the RRI noted that one of the four capscrews (inside the engine) that hold the power take-off pinion for the overspeed trip and fuel booster pump was not properly locked. This could lead to a fastener dropping into the timing gears or the overspeed coupling not holding its alignment. This deficiency was brought to the attention of the QC supervisor. The defect was identified on a nonconformance report and subsequently corrected prior to reassembly. The licensee is evaluating the reportability of this defect.

All of the cylinder head inspections were completed this week. Fourteen of the sixteen heads removed from the engine had rejectable liner defects. As mentioned previously in this report, all heads are being replaced. Disassembly, cleaning, and inspection of the air start distributors was accomplished this week.

April 16 - 22

Fourteen of 60 inspection plans were complete by this point in the sequence and signed off. During this week the licensee measured timing and power takeoff gear backlash. The results were satisfactory. The RRI noted that a few pieces of tape, wooden splinters and bits of paper towel were beginning to collect in the bottom of the crankcase. Even though the licensee intended to do a thorough cleaning before final closure, the RRI pointed out the wisdom of keeping such debris out on a continuing basis. The licensee responded favorably by exercising greater care in this area. The RRI informed the licensee that there will be a NRC inspection of the crankcase just prior to final closure and that the RRI was to be called whenever this was to occur.

Inspection and machining of the cylinder liners was completed this week. One liner was rejected and donated to the Owner's Group for destructive testing.

April 23 - 29

All cylinder liners, machined as required to obtain proper interface with the heads, were installed. The RRI witnessed installation of the last liner in 4R. Great care was being exercised by QC to ensure the liners were clean, free of nicks and burrs, and that the cylinder block water passages were clear of foreign material before releasing the liners for insertion.

In preparation for installation of pistons and connecting rods, the licensee thoroughly cleaned and inspected the crankcase.

During this week, the RRI inspected 18 inspection plan (IP) packages that were reported by the licensee as completed and copies forwarded to the Owners' Group. The packages were:

- I.P. 8 Front Gear Case Gasket & Bolts
- I.P. 10 Fuel Tappet Assembly
- I.P. 16 Intake & Exhaust Tappet Assembly
- I.P. 17 Cylinder Block Studs
- I.P. 18 Governor Assembly Heat Exchanger
- I.P. 22 Camshaft Assembly
- I.P. 23 Governor Drive Gear Shaft
- I.P. 30 Valve Springs
- I.P. 35 Intercooler Piping Coupling (Dresser Couplings)
- I.P. 37 Crankcase Covers
- I.P. 46 Cylinder Block Covers
- I.P. 47 Exhaust Rocker Shaft Assembly
- I.P. 48 Long Push Rods
- I.P. 49 Push Rod Connector
- I.P. 50 Rocker Arms and Pushrod Fasteners
- I.P. 51 Governor Drive Coupling

There were no significant deficiencies found in any of the IP packages except for IP 17. Seven other IP packages prompted minor questions from the NRC inspector, all of which were answered or corrected upon review of the inspection results with Maintenance Engineering and Quality Control Supervision. The problem related to IP 17 involved the certification records on the individual who performed the alloy separation examination on cylinder block studs. The technician was required by Long Island Lighting Company. (LILCO) Procedure QCI FS1-F11.1-080 to be qualified to the test equipment technical manual and LILCO Procedure QAD-2.5. Documentation in the package IP 17 shows the individual to be qualified to LILCO Procedure QAI-11.2.6. This disparity is reflected in NRC Inspection Report 50-445/84-15 as Unresolved Item 50-445/8415-01.

April 30 - May 6

During this week, all of the new pistons were assembled to the connecting rod assemblies, transported to the EDG room and installed in the engine. All heads are installed. The RRI witnessed the entire process of reassembly and installation of the piston 7L and head 8L. The licensee's mechanics, under the surveillance of QC, properly installed the components in accordance with procedures and exercised great care to protect the components from damage and maintain cleanliness of mating parts.

On May 3, 1984, the dismantling of Train B EDG (Serial No. 76002) commenced. The lessons learned on Train A EDG (Serial No. 76001) will be utilized in the methods used. Procedures have been revised in some cases to ensure a smoother process. The licensee has scheduled a 30-day time span for disassembly, cleaning and inspection, and reassembly. The NRC inspection of this activity will be documented by separate NRC Inspection Report 50-445/84-20.

May 7 - 13

By the end of this week the EDG was completely assembled with exception of the overspeed governor and engine driven fuel booster pump. As the cylinder head subcovers were being installed, the RRI noted that housekeeping and signoffs of on-the-spot procedure changes were relaxing. QC and maintenance supervision were alerted by the RRI to take action to restore the high level of quality that has been followed thus far. QC issued a written directive reminding all personnel of the importance of rigid controls. This action yielded satisfactory results.

May 14 - 20

All assembly work was completed on the train A EDG on May 15, 1984. The balance of the week was spent cleaning the diesel generator room and making preparations for the first retest. On May 19, 1984, the retest of EDG auxiliary system control and interlock functions was performed with satisfactory results.

May 21 - 25

On May 23, 1984, the NRC inspector conducted a detailed review of 14 additional IP packages to verify proper identification documentation and followup on defects found on the train A EDG.

The following IP packages were reviewed:

<u>Inspection Plan</u>	<u>Subject</u>
I.P. - 15	Turbocharger Butterfly Valve Assembly
I.P. - 19	Turbocharger Bracket Bolting
I.P. - 20	Rocker Arm and Push Rod Assembly
I.P. - 21	Cylinder Block
I.P. - 24	Cylinder Liners
I.P. - 25	Starting Air Distributor
I.P. - 27	Pistons & Piston Pin Assembly
I.P. - 28	Governor Linkage
I.P. - 29	Control Panel Cleanliness
I.P. - 31	Exhaust Manifold Bolting & Gaskets
I.P. - 32	Cylinder Block Liner & Manifold Nuts
I.P. - 33	Turbocharger
I.P. - 34	Crankcase Assembly
I.P. - 36	Base and Bearing Caps

Of the 14 IP packages sampled, it was noted by the RRI that eight had nonconformance reports (NCR) that were not closed. At this point in time, the engine was being prepared for starting and break-in of the new piston rings. The RRI expressed concern to the licensee's Quality Assurance Supervisor that running the equipment with unresolved deficiencies will violate procedures and is not in the best interest of quality. The response was that all NCR's written against the engine would be cleared or conditionally released before the engine is operated. "Conditional release" means in broad terms that an engineering evaluation has been conducted and quality of the equipment will not be compromised if the equipment is operated. This concept is frequently needed in order to conduct in-process equipment checkouts prior to final restoration to service.

After the engine had been run, the RRI noted that some of the NCR's were still open, and not conditionally released. For example: NCR 84-0097 rejects all of the pistons pins for wear, and the IP - 27 package has no documentation showing this to be an acceptable, "use as-is" condition. Upon questioning the licensee's Quality Control supervisor, it was revealed that the "hold tags" that would have prevented premature

engine operation were removed from the engine without proper authority, however, there was documentation showing that the engine could be operated "as is." The QC supervisor stated that this is a violation of the administrative procedure controlling NCRs and immediately placed the equipment back in a "hold" status. A Deviation Report was initiated which documented the procedure violation. NCR 84-0082 (pushrod cup defects) was handled in a similar manner.

The package for IP - 33 (turbocharger) had notations stating that dimensions specified could not be taken because the needed measuring equipment was not available. The inspector inserted "N/A" for the attribute on the inspection report and the Level III inspector approved the inspection report for closure. The inspection report and the inspection plan had not been revised. The licensee issued a Deviation Report to document and provide for corrective action.

The above failures to follow administrative procedure, among others not related to the TDI Recertification Program constitute an apparent violation which will be addressed in NRC Inspection Report 50-445/84-18 (to be issued).

The RRI noted a few instances where the quality control inspector indicated "satisfactory" on inspection reports when unsatisfactory or indeterminate conditions existed. The licensee's representative explained that there was some confusion as to whether the inspector is comparing conditions with stated or implied acceptance criteria or just simply reporting his observations. Procedure QPM-004 (inspection reports) states that acceptance criteria shall be included in the instructions to the inspector that are entered on the inspection report. It has become evident that there will be times when a condition report is needed for subsequent engineering evaluation. There may be no acceptance criteria. The licensee is considering procedure changes to accommodate such situations in the future.

In the IP - 32 package, the RRI noted that the IP was revised over the signature of the previous revision, lending confusion to what acceptance criteria was used in evaluating defects on cylinder block nuts. The inspection report was closed out with a satisfactory reinspection, yet the related NDE report still showed the rejection. No NCR was written. The "paper trail" in this IP package was inadequate. The QC supervisor indicated that he would make the proper corrections. This problem will be addressed in NRC inspection report 50-445/84-18 as Unresolved Item 50-445/8418-01.

4. Exit-Interview

An exit interview was conducted on June 1, 1984, with licensee representatives (identified in paragraph 1). During this interview, the RRI reviewed the scope of this inspection and discussed the inspection findings. Due to the length and special nature of this inspection, action items such as violations, deviations, open and unresolved items have been documented and tracked in the routine periodic resident inspection program report.

6-21-84

In Reply Refer To:
Docket: 50-445/84-05

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 conducted by Messrs. L. E. Martin and C. R. Oberg of this office during the period January 6-March 13, 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 members of your staff at the conclusion of the inspection.

The area examined during the inspection involved allegations of poor work practices pertaining to five safety related supports of the main steam system. Within this area, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspectors. The findings are documented in the enclosed inspection report.

Within the scope of the inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure 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).

Texas Utilities Electric Company

-2-

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

Sincerely,

Original Signed By:
Richard L. Bangart

R. L. Bangart, Director
RIV Task Force

Enclosure:
Appendix - NRC Inspection Report
50-445/84-05

cc w/enclosure:
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

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-05

Docket: 50-445

Construction Permit: CPPR-126

Licensee: Texas Utilities Electric Company (TUEC)
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, Glen Rose, Texas

Inspection Conducted: January 6-March 13, 1984

Inspectors:

L. E. Martin
L. E. Martin, Reactor Inspector
Region IV Task Force

4/19/84
Date

C. R. Oberg
C. R. Oberg, Reactor Inspector
Region IV Task Force

4/19/84
Date

Approved:

D. Hunnicutt
D. Hunnicutt, Team Leader
Region IV Task Force

4/19/84
Date

Inspection Summary

Inspection Conducted January 6-March 13, 1984 (Report 50-445/84-05)

Areas Inspected: Special, unannounced inspection of allegations of poor work practices pertaining to safety-related supports. The allegations covered five separate items identified by the allegor to NRC personnel. All identified items pertained to the main steam pipe supports. This inspection involved 290 inspector-hours onsite by two NRC inspectors.

Results: Within the areas inspected, no violations or deviations were identified. The specific concerns could not be substantiated.

DETAILS1. Persons ContactedPrincipal Licensee Employees

- *J. T. Merritt, Assistant General Project Manager
- R. G. Tolson, Site Quality Assurance Supervisor
- B. G. Scott, Quality Engineering Supervisor
- *J. D. Hicks, Assistant Site QA Supervisor

Brown & Root, Inc. (B&R)

- S. Rynders, Superintendent
- R. Heabert, Superintendent
- R. Johnson, Superintendent, Unit 1
- B. Baker, Senior Project Welding Engineer

Other Personnel

Alleger

In addition, the NRC inspectors interviewed other B&R labor force and QC inspection personnel concerned with the allegation.

*Attended exit meeting on March 13, 1984.

2. Allegations Relating to Poor Work Practices

On November 22, 1983, an alleger made a sworn statement to the NRC regarding poor work practices at Comanche Peak. Subsequently on January 6 during a site visit and a followup discussion on January 26, 1984, the alleger identified concerns on five specific supports/restraints. The allegations were as follows:

a. Pipe Support MS-1-004-007-C72K

An excessive gap of 1" or more was noted during the fit-up of the bottom kicker and outrigger. This gap was welded in violation of fit-up limitations.

b. Pipe Whip Restraint and Pipe Support Structure M-17

The web of the structural support member (M-17) was cut out in the wrong location. Instead of reporting the problem and repairing according to procedure, it was filled in by unauthorized welding.

c. Pipe Support MS-1-003-009-C72K

The stanchions of this item were welded on the inside with "heliarc" and backwelded because of excessive gap. The upper stanchion had too much cutoff at "lower point." This was filled in by welding, grinding, and polishing.

d. Pipe Support MS-1-003-010-C72K

The bottom saddle was cut in four pieces. The left hand back piece did not fit due to curvature of the pipe. The piece was heated to a "cherry red" with rosebuds. A 20 ton hydraulic jack, a "come-along," and hammering were used to bend the metal into place. This was alleged to have been done under direct orders of a superintendent, a general foreman, and the supervising foreman.

e. Pipe Support MS-1-002-005-C72K

There was an excessive gap in the steel of the support box. The gap was between shim plates but the shim plates were enclosed without the problem being reported or corrected.

3. Inspection Results

a. Pipe Support MS-1-004-007-C72K

(1) General

The support members of MS-1-004-007-C72K were fabricated by NPS Industries and assembled onsite by B&R. This support is located on the Loop 1 main steam line inside Unit 1 containment. It is a large ASME Class 2 hanger (overall dimension approximately 26'x 5'x 10') utilizing two SMA-35-SC snubbers. The main structural member is supported from the wall by two "kickers" and "outriggers." The kickers are attached to the main members at approximately a 45 degree angle. The structural members are made of 1" CS plate. The two kickers are made of four plates approximately 14" wide and 11' long and four plates 13" wide and 11' long. They were field trimmed to suit needs.

MS-1-004-007-C72K was constructed in accordance with Gibbs & Hill (G&H) Specification 2323-MS-46A. ASME Section III, - Division I Subsection NF - Component Supports (Winter, 1974 Addenda) is the applicable code.

(2) Description of Allegation

The initial signed statement made by the alleged did not identify a specific problem with MS-1-004-007-C72K. However, during the site visit on January 6, 1984, the support was identified by the alleged as having an excessive gap (1" or more) between the main structural member and the kicker at fit-up. The kicker meets the main member at approximately a 45 degree angle. The excessive gap was welded closed.

After inspection of the kicker attachment weld (described below), the alleged was informed of the results. The alleged then indicated that the fit-up was correct on one side of the attachment only, and that the weld prep tapered out to an excessive gap of greater than one inch on the opposite side. See Figure 1.

(3) Review of Documentation

The documentation package for MS-1-004-007-C72K was reviewed and used as a basis for the inspection by the NRC inspectors. The following specific items were reviewed:

- QC Component Checklist Att. 5
- Multiple Weld Data Card (MWDC) 57089
- Weld Filler Material Log (WFML)
- Material Identification Log (MIL)
- Hanger Inspection Report, dated September 22, 1982
- QC Checklist For Snubbers
- Snubber Modification Cards
- Inspection Report ANO 3525
- MT/PT 17187 MT
- Repair Process Sheet (RPS) R-2194
- Receiving Inspection Report (RIR) 18221
- Material Receiving Report (MRR) CP10295

(4) Observation

At the request of the NRC inspectors, the licensee had B&R grind and etch two areas on the support. Figure 2 shows the areas examined and the observation noted. In addition to the two etched areas examined, the NRC inspectors found that the weld joining the lower kicker to the main support member was consistent in appearance (approximately 1" wide) for the full length of both the upper and lower welds. On the inside angle of the kicker (45 degrees), a small edge of the weld prep (See Figure 3) was noted approximately 1-1/8" from the edge of

plate A. The bottom weld was similar in appearance. The support had been painted; however, the size of the weld was noted to be consistent with the requirements of the B&R drawings and consistent with the experience of the NRC inspectors for similar type welds. Additional destructive testing was not done based on the evidence noted.

The NRC inspectors also noted that to weld in the 45 degree angle and fill in a 1" gap would be extremely difficult. The alleged geometry of the gap and the positions from which a welder would have to work (overhead or on back) would suggest that the effort involved could not be done unnoticed by other personnel working in the area.

Figure 1

PLAN VIEW OF LOWER KICKER
JOINING MAIN STRUCTURAL MEMBER

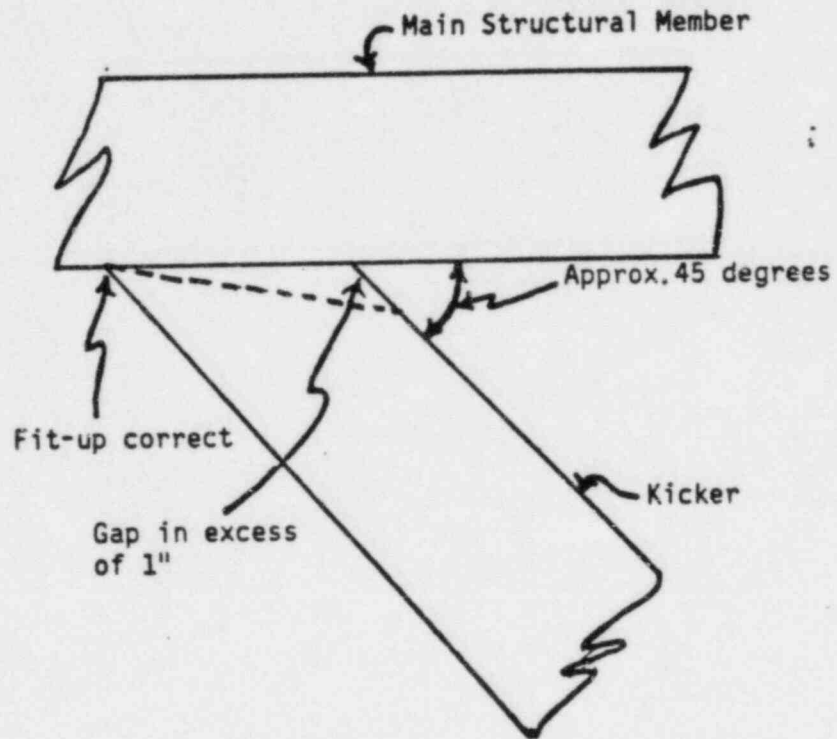
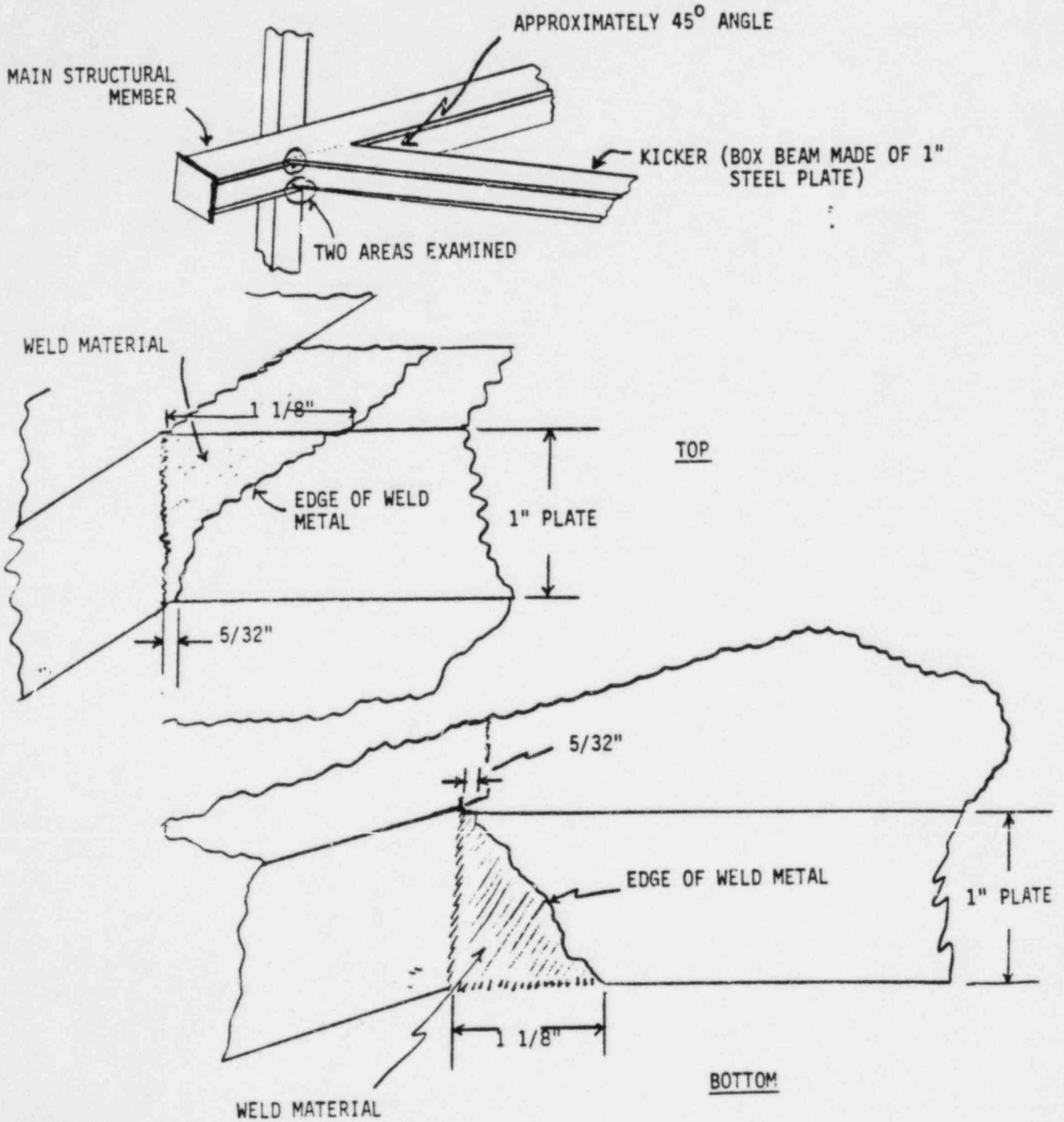


Figure (2)

(NOT TO SCALE)



(5) Conclusions

The NRC inspectors could not identify any evidence that would support the allegation regarding an excessive gap and unauthorized welding. There is evidence to support that the weld fit-up was done correctly. Observation of the etched areas and inspection of the remainder of the suspect weld confirmed that the requirements of the drawings were met. The requirement for weld preparation for the plates in question show that a 45 degree prep on a 1" plate for the full penetration weld with 1/8" clearance will give a 1" gap at the top of the area to be welded. See Figure 3. This is normal and according to procedures.

ASME Section III, Division 2, Paragraph NF5222 requires that all welds of Class 2, linear type supports be visually examined to the acceptance standards of NF-5360. No QC fit-up inspection is required. The QC inspection of welding on this support was completed on September 22, 1982, and found to be satisfactory. This was documented on the MWDC, No. 57089. The QC component support checklist also stated that all accessible welds were "reinspected and are in compliance with VCD" (Vendor Certified Drawings), dated November 9, 1983.

The allegation could not be confirmed based on the inspection record, discussion with other personnel working in the area, and direct observation of weld area which included grinding and etching of two areas on the weld.

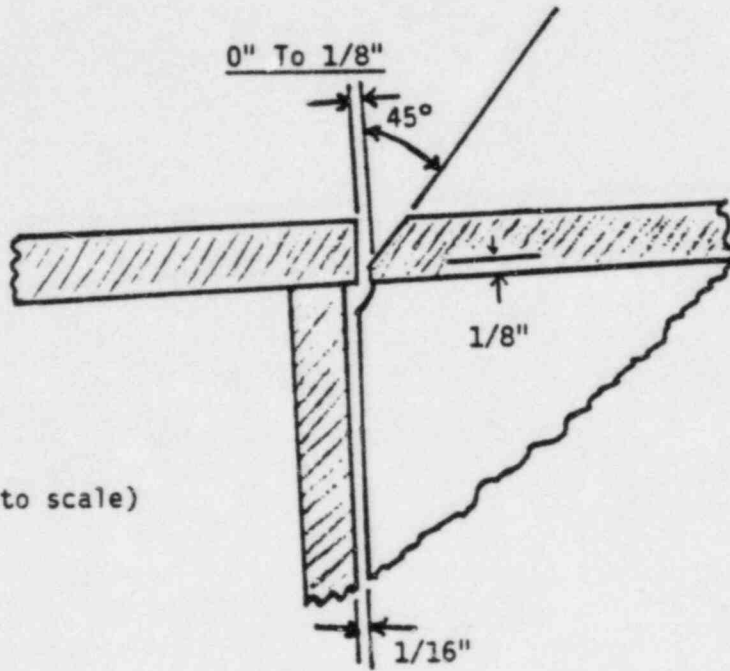
b. Pipe Whip Restraint and Pipe Support Structure M-17(1) General

Support Structure M-17 is a massive I-Beam made of 1-1/2" CS plates, 4' 3-1/2" tall, 2'4" wide and approximately 14' long. It is located inside containment, Unit 1, at elevation 905' level, azimuth approximately 345°. It supports two whip restraints, MS-1-001-903-C77W and MS-1-001-902-C77W, as well as pipe support hanger MS-1-001-007-C72K.

(2) Allegation Description

On January 6, 1984, during the site visit, the allegor identified a pipe whip restraint (MS-1-001-903-C77W) which he stated had been gouged and repaired without a procedure. Subsequently, on January 26, 1984, the problem was determined not to be with the restraint, but with the structural member, M-17. The web of the beam member was alleged to have been cut in the wrong location. The opening was filled in by welding without approval or authorization. No repair record or NCR was generated.

Figure 3



Lower plate has similar weld prep for full penetration weld

(Not to scale)

(Not to scale)

(3) Review of Documents and Procedures

The following documents were reviewed as they were applicable to structural member M-17:

Design Change Authorization (DCA) 14,115 Rev. 1-4
 CPSES Inspection Report MI-1063
 Construction Traveler MW83-6684-3400
 Construction Traveler CD80-027-3401
 Drawing 2223-S1-0583
 Drawing 2323-S1-0581
 MP/PT Report T 1169
 MP/PT Report 6242
 Repair Process Sheet (RPS) WDC 707479
 TUSI Ltr CPPA-31749 of July 8, 1983
 G&H ltr GTN-66866 of July 21, 1983

DCA 14,115 authorized a cut in the web of the structural member and the insertion of a 12" diameter pipe. This opening was to allow the attachment of NPSI MS-1-001-006-C72K to the support structure. The snubber goes through the pipe to the 32" main steam line.

(4) Observations

The NRC inspector examined M-17 in the specific area of the allegation. The sleeve in the beam web was found to be a slotted hole approximately 18"x 12"x 4". The sleeve was welded in place with a 1/2" fillet weld. Punch marks were noted on the south side to the left of the existing hole in the beam, however, no cut had been made in the metal. There was no visual evidence of welding that would indicate filling in of an unapproved cut or damage to the base metal.

Review of the documentation indicated that DCA 14,115 Rev. 1, had been accomplished and inspected by August 24, 1982. Revision 3 to this DCA removed the assigned 12" round pipe and slotted the structural member to install an elongated pipe 18"x 12"x 4". Revision 3 was authorized on September 22, 1983. This change was required due to the sleeve interfering with the snubber. This was noted during hot functional testing (HFT).

(5) Conclusions

The original modification to the beam was accomplished in August of 1982. HFT identified interference with the snubber. This prompted another change, which was done in October of 1983, thereby elongating the hole approximately 6". This modification was adequately documented in the support package.

No physical evidence was found that would indicate a wrong cut and subsequent unauthorized welding to repair the base metal. The area in question was smooth and clear of weld material. It is conceivable that Revision 3 could have removed any evidence of the alleged cut and rewelding. However, based upon the information stated above, the allegation was not substantiated.

c. Pipe Support MS-1-003-009-C72K

(1) General

MS-1-003-009-C72K is a large horizontal support utilizing two SMF-100-S0 snubbers. It is attached to an interior wall inside Unit 1 containment at elevation 893' 10". The support extends out from the wall approximately 7' and is 6'4" tall and 5' wide. The snubbers are attached to a strong back which is fastened to the main steam pipe by an upper and a lower stanchion. The stanchions are made of 20" diameter SCH-80 CS pipe. They are welded to the 32" main steam pipe, off center, giving one side of the stanchions a longer "lip" than the other.

(2) Allegation Description

During the site tour on January 6, 1984, the allegor stated that the bottom stanchion of MS-1-003-009-C72K had been buttered with a 1" weld after excess metal had been cut off. No NCR or repair procedure was initiated. The unauthorized work was done at the order of the foreman. Subsequently on January 26, 1984, the stanchion problem was characterized as pertaining to the top stanchion only. The upper stanchion was backwelded on the inside to seal up excessive gap in the fit-up. The stanchion was alleged to have been punchmarked by the allegor, and sent to the fab shop for cutting. Too much was cut off the lower "point". (By design, the stanchions are offset from the centerline of the 32" main steam pipe).

The supervising foreman was alleged to have filled in the "point" by welding and then grinding down the weld beads to give the appearance of the original pipe stanchions metal. The stanchions were back welded because of the excessive gap in fit-up.

(3) Review of Documentation and Procedures

The following documents were reviewed:

MS-1-003-009-C72K Hanger Package

QC Component Support Checklist Att. 5 VCD

MIL

MWDC 58332

Manager I.R. dated March 22, 1982

QC Checklist for Snubber Installation dated February 28, 1983,
and March 17, 1983

Snubber Modification Card 77357

Snubber Modification Card 77356

MWDC 80155

Hanger I.R. dated February 17, 1983, per IRN HOU 6696

MWDC 86576 per CMC 9366S, RO

Hanger I.R. dated August 31, 1983

I.R. AM03582 dated December 2, 1983, VCD

MWDC R-196B for VCD

Hanger I.R. dated December 29, 1983

MWDC R-2104 VCD

CMC 67872

CMC 88117

CMC 93665

IRN H006696

MS-1-RB-03-004-Pipe Spool Package

MWDC 58333

Weld Filler Metal Log 58333

MT/PT Report for FW1 int./ext. MT

MT/PT Report for FW2 " " MT

VT for FW1 WDC 58333

VT for FW2 WDC 58333

B&R Welding Procedure Specification 11010 Revision 4,
September 12, 1979.

MWDC 58333 clearly indicates that E705-2 filler metal was to be used for the first two layers (root and hot pass). E7018 weld rod was to be used for remaining fill - dated January 21, 1982. The initial root had to be background and backwelded. Both the inside and outside welds were acceptable to QC per QI-QAP 10.2-1, Revision 1.

(4) Observations

Visual inspection of the outside of the stanchions and their attachment to the main steam pipe did not reveal any abnormal conditions. At the request of the NRC inspectors, a hole was drilled in the cover plates of the upper and lower stanchions. A borescope was then used to examine the welds from the inside of the stanchions.

A narrow bead of "helium arc" weld metal, E-705-2, was observed, (on the WDC 58333 - Weld 1 & 2). No excessive weld metal denoting out of tolerances gaps was noted. These stanchions had been visually inspected by QC at fit-up (February 22, 1982) and completion of the weld (February 24, 1982). No defects were noted. (Visual Examination Checklist WDC 58333).

The QC inspectors and welders (as available) who were involved with inspection of the fit-up and welding on the stanchions were questioned. The information contained in the support package pertaining to welding and fit-up was confirmed. Both the night shift and day shift worked on the stanchions. Backwelding was accomplished and checked to be satisfactory on WDC 58333 (February 26, 1982) by QC.

(5) Conclusions

There were three parts to this allegation:

- excessive gap existed at fit-up.
- backwelding was done due to excessive gap.
- the upper stanchion was cut wrong and was repaired by buttering by an unqualified welder.

An excessive gap in the fit-up of a full penetration weld would be greater than 1/8". The fit-up was inspected by QC personnel and documented as "satisfactory". Nothing out of the ordinary was noted by the QC inspector.

Backwelding inside the stanchion was documented on the WDC and found to be satisfactory per QF-QAP 10.2-1 (NDE-Liquid Penetrant Examination). Backwelding was accomplished in accordance with an approved welding procedure.

No evidence was found to indicate that the upper stanchion was cut incorrectly. None of the QC personnel or welders interviewed noted anything wrong with the fit-up or any other condition that would indicate incorrect cutting on the stanchion. It was determined through interviews that when a stanchion did not fit, grinding was done as necessary to achieve the correct fit-up.

The geometry of the stanchion (in the area of the lower tip) required the final weld to be wider in that area when compared to the remainder of the weld.

The conclusion, based on the evidence collected through direct inspection, review of applicable documents and interviews with labor and management personnel, was that the allegation could not be substantiated.

d. Pipe Support MS-1-003-010-C72K

(1) General

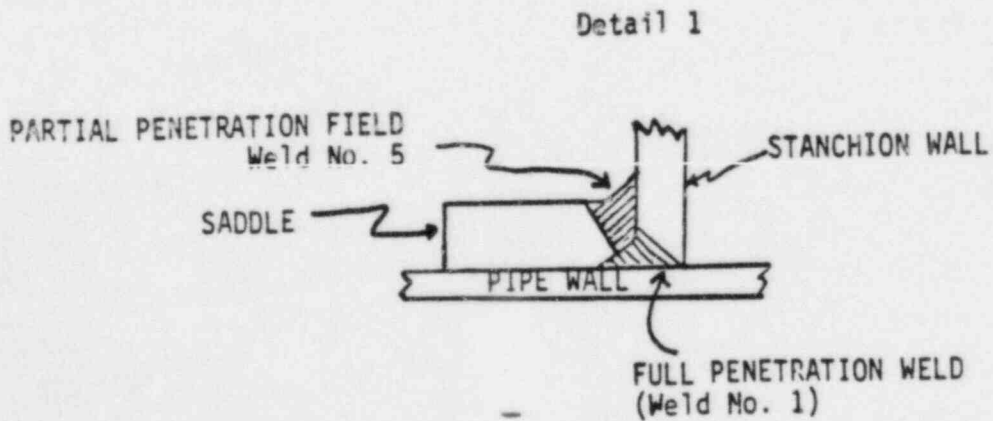
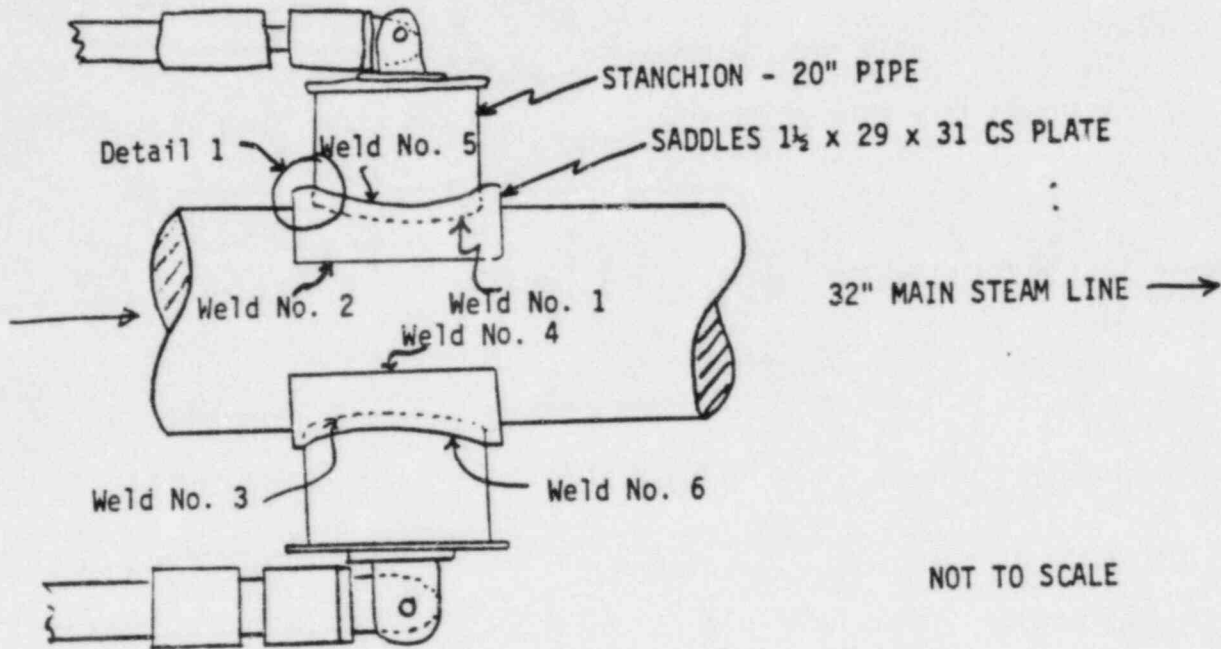
This support is a large ASME Code Class 2 pipe support located on the 893' 10" elevation of Unit 1, Containment Building. It extends approximately 4' out from the wall. The two support members parallel the 32" main steam line, one on top and one below. There is an upper and lower stanchion welded to the pipe, made of 20" schedule 60 pipe. The stanchions are, in turn, reinforced by 1-1/2" x 29" x 31" CS "saddle" plates also welded to the pipe. Two SMF-100-BA snubbers connect the main structure to the stanchions. See Figure 4.

(2) Allegation Description

The allegor identified MS-1-003-010-C72K during the January 6, 1984, site tour. The specific problem identified was that the lower saddle had been heated to a "cherry red" condition and bent into shape around the main steam line using a come-a-long and a porta-power hydraulic jack.

During the January 26, 1984, discussion, the allegor stated that the lower saddle (on MS-1-003-010-C72K) had been cut into four pieces, and that the left hand, back quadrant piece had been heated and bent into position with a porta-power unit, a 1 ton chain "come-a-long," and hammering. The heating and bending operation was not an approved method or procedure. In addition, the allegor stated that he, in company with a welder, went to B&R management with this allegation. To the best of the allegor's knowledge, nothing was done by B&R to resolve the problem.

Figure 4
DETAILS OF MS-1-003-010-C72K



(3) Review of Documents and Procedures

The following documents were reviewed:

MS-1-003-009-C72K

QC Component Support Checklist Att. 5 dated February 2, 1984
 MIL (Material Identification Log)
 MWDC #58332 & WFML
 Hanger I. R. dated March 22, 1982
 QC Checklist for Snubber Installation dated February 28, 1983,
 and March 17, 1983
 Snubber Modification Cards 77357 & 77356
 MWDC 80155 & WFML
 Hanger I.R. dated February 17, 1983
 MWDC R-435
 Hanger I.R. dated August 31, 1983
 MWDC 86576 & WFML
 I.R. AM03582 dated December 2, 1983
 MWDC R-1968
 Hanger I.R. dated December 29, 1983
 MWDC R-2104
 Hanger I.R. dated February 2, 1984

IRN M-1407	Traveler CS-2-483-902-A47W
CMC 93665	QCA 17,934
CMC 67872 R7	Drawings 2323-S1-0576
CMC 88117 R1	2323-S1-0581
IRN H6696	

Also looked at Spool MS-1-RB-03-04 for attachment of stanchion.

MWDC 58333 & 58333
 MT/PT for FW1 (Upper Stanchion) inside & out
 MT/PT for FW2 (Lower Stanchion) inside & out
 FW1 Backweld inside
 VT Checklists

MS-1-003-010-C72K

QC Component Support Checklist Att. 5
 MIL
 MWDC 45201
 Weld Filler Metal Log 45201
 MWDC 45197 & WFML
 MWDC 45120 & WFML
 MWDC 64147 & WFML

Hanger IR dated May 24, 1982
 Snubber Checklist
 I.R. AMO3597 dated December 10, 1983
 MWDC R-2000 per NCR 12,500 R-3 & IRAM 3597
 Hanger I.R. dated February 8, 1984
 MWDC R-2019
 MT/PT Report 17145
 MWDC 45202 WFML

CMC 53580 R11
 MWDC R-2001

MS-1-002-005-C72K - Package was reviewed for drawings only.

(4) Observation and findings

The NRC inspector examined the documentation packages and inspected the support. The following was determined:

- MS-1-003-010-C72K stanchions were welded in place from July 13, 1981, to July 23, 1981 (WDC 45201)
- The upper saddle was cut in two pieces and repaired in accordance with CMC 53580. The item was cut incorrectly in fab shop.
- The lower saddle is one piece, with no visual indications that the saddle was split. It is smooth, without marks indicating that a chain or hydraulic jack was used to bend the saddle.
- The saddles were welded in place between August 11, 1981, to August 19, 1981 (WDC 45197).
- QC inspections of fit-up and welding indicate welds are "satisfactory."

The NRC inspector discussed this allegation with B&R personnel in order to clarify the issues. It was determined that a lower and upper pipe saddle had been cut in four pieces, but on a support identified as MS-1-003-007-C72K. This support is attached to the main steam piping by stanchions and 2" thick saddles similar to MS-1-003-010-C72K. However, the saddles, or reinforcing pads, were cut into four pieces as authorized by CMC 65236. This support was examined by the NRC inspector. The saddles had been modified, as indicated in the CMC; however, there was no evidence that would indicate heating and bending of the left rear quarter of the lower pad. There was also no visible evidence of bending of the pipe in the area of the saddles.

Identification of the problem to upper management in B&R appears to have been done as indicated by the allegor. This was confirmed by one B&R Superintendent. However, any further action taken on this matter by B&R management could not be identified. The supervisors involved do not remember any action, and the problem was not documented. It can only be assumed that none was taken.

(5) Conclusions

Based on the information obtained from B&R personnel, review of the support packages and direct observation of the supports, the allegation could not be substantiated. The original support identified did not have a saddle cut in four pieces. The support that did have a four piece saddle also had clear and direct authorization to make such a change.

Lack of response by B&R management to this concern identified by the allegor, indicated a lack of an effective system for followup on concerns noted by a laborer and there was a weakness in their management system. More recently, however, a system is in place to provide for identification and followup of this type of concern. No technical issue appears to exist.

e. Pipe Support, MS-1-002-005-C72K

(1) General

During the site visit, the allegor indicated to the NRC inspector that MS-1-003-903-C77W had been constructed with excessive gaps between shims. They were subsequently covered by plates so that the excessive gaps could not be seen.

Upon close inspection of MS-1-003-903-C77W and review of the restraint package, it was determined that the gaps between shims installed as part of the restraint support structure had been identified by QC on an NCR. Engineering had determined the as-built condition to be acceptable. This was told to the allegor on January 26, 1984. He then stated that MS-1-002-005-C72K was the support (identified from a drawing) in which there was a hidden gap in the steel that made up the support box. Review of the drawings for MS-1-002-005-C72K was done. No support box was found containing shims. Inspection of all pipe supports in the general area identified by the allegor was done by the NRC inspectors. No supports or restraints were found that would have fit the description of the type of structures of concern to the allegor.

-(2) Conclusion

This allegation could not be confirmed based on the general information provided by the alleged or by inspection in the general area.

4. Exit Meeting

On March 13, 1984, the NRC inspector met with the alleged to discuss the findings of this inspection. The alleged stated that he was satisfied that his concerns had been considered sufficiently to determine if a valid problem had existed. He had no further concerns or questions. The NRC inspector offered to send the alleged a copy of the inspection report. This offer was declined.

Also on March 13, 1984, the NRC inspector met with licensee representatives identified in paragraph 1. The findings were discussed and acknowledged by the licensee. The senior resident inspector (construction) was informed of the findings.

6-21-84

In Reply Refer to:
Docket: 50-445/84-10

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 Cable Spread Room during the period of March 13, 1984, through April 11, 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 you and other members of your staff at the conclusion of the inspection.

This inspection is the second in a series of planned construction completion room/area inspections. The primary purpose of this inspection was to evaluate actual as-built status of the Cable Spread Room as compared to the design and inspection documentation. This inspection covered some construction characteristics, such as cable separation, workmanship, supports, etc., which have been the subject of allegations to the NRC, but the inspection was not intended to achieve resolution of specific allegations except for the specific concern noted in the report regarding cable tray side rails. Resolution of specific allegations may involve additional inspection in these areas, and may result in additional corrective actions.

Areas examined during the inspection included Electrical Raceway and Raceway Supports, Electrical Cable Routing and Terminations, Electrical Separation, HVAC, Fire Protection/Detection, and following on unresolved items 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.

Within the scope of the inspection, no violations or deviations were identified. The scope and results of this inspection indicate that the utilization of Building Manager concept is providing appropriate controls for the tracking and satisfactory completion of the Unit 1 Cable Spread Room.

B407120574-B40621
PDR ADDOCK 05000445
G PDR

Texas Utilities Electric
Company

2

One new unresolved item pertaining to Fire Protection is identified in Paragraph 7 (8410-01).

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure 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).

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

Sincerely,

Original Signed By:
Richard P. Denise

Richard L. Bangart, Director
Region IV Task Force

Enclosure:
NRC Inspection Report 50-445/84-10

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

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-10

Docket: 50-445

License Permit: CPPR-126

Licensee: Texas Utilities Generating Company (TUGCO)
Skyway Tower
400 North Olive Street
Lock Box 81
Dallas, Texas 75201

Facility Name: Comanche Peak, Unit 1

Inspection At: Comanche Peak, Unit 1, Glen Rose, Texas

Inspection Conducted: March 13 - April 11, 1984

Inspectors: *D. M. Hunnicutt* 5/31/84
for L. E. Martin, Reactor Inspector, RIV Task Force
(paragraphs 1, 2, 3, 4, 6, 7, 8, 9, 10, and 11) Date

D. M. Hunnicutt 5/31/84
for C. R. Oberg, Reactor Inspector, RIV Task Force
(paragraphs 5 and 8) Date

Claude E. Johnson 5/31/84
C. E. Johnson, Reactor Inspector, RIV Task Force
(paragraph 6) Date

M. E. Murphy 5/31/84
M. E. Murphy, Reactor Inspector, RIV Task Force
(paragraph 7) Date

Approved: *D. M. Hunnicutt* 5/31/84
D. M. Hunnicutt, Team Leader, RIV Task Force Date

Inspection Summary

Inspection Conducted: March 13 - April 11, 1984 (Report 50-445/84-10)

Areas Inspected: Special inspection of construction completion of Electrical Raceway and Raceway Supports, Electrical Cable Routing and Terminations, Electrical Separation, HVAC, Fire Protection/Detection in the Unit 1 Cable Spread Room, and followup on two unresolved items from the special inspection of the Fuel Building. The inspection involved 392 inspector-hours onsite by four NRC inspectors.

Results: No violations or deviations were identified; one new unresolved item was identified in the area of Fire Protection/Detection as discussed in paragraph 7 (8410-01).

DETAILS1. Persons ContactedPrincipal Licensee Contacts

- *M. D. Spence, President, TUGCO
- *B. R. Clements, Vice President, Nuclear Operations, TUGCO
- *L. F. Fikar, Exec. Vice President, Engineering
- *J. B. George, Vice President, PGM CPSES
- *J. T. Merritt, Site Project Manager
- *A. Vega, Site QA Supervisor
- *M. McBay, Engineering Manager, TUGCO
- *F. L. Powers, Building Manager
- I. Voglesang, Project Electrical Engineer
- *D. Snyder, Asst. Building Manager, UE&C
- B. C. Scott, QA Supervisor

Other Contractor Contacts

- J. Fort, QC Inspector, B&R
- *J. B. Leutwyler, QC Supervisor, B&R
- J. DeVitro, QC Inspector, UE
- D. Gray, QC Inspector, B&R
- J. Long, QC Inspector, B&R
- D. Holmgren, QC Inspector, B&R
- B. Bryson, Foreman, B&R
- B. Edwards, Project Manager, Bahnson
- D. O'Brien, Project Engineer, Bahnson
- G. Dickerson, Project QA Manager, Bahnson

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.

2. Inspection Objective and Scope

The objective of this inspection was to evaluate the construction completion of the Unit 1 Cable Spread Room (Room 133). This objective was accomplished through examination of selected samples of hardware, to insure that the hardware 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:

- .Electrical Raceway and Raceway Supports
- .Cable Routing and Termination
- .Electrical Separation
- .HVAC Duct and Supports
- .Fire Protection/Detection

Also included in this inspection, but not part of the original sample plan was:

- .Followup on Unresolved Items from NRC Inspection Report 50-445/83-23 (Fuel Building)

This area is documented in paragraph 8 of this report.

3. Status of Unit 1 Cable Spread Room

The Unit 1 Cable Spread Room (Room 133) was essentially complete at the time of this inspection. The major ongoing activities in the Cable Spread Room were the installation of fire wrap materials and tray covers, termination cabinet modifications, and QC inspections associated with Inspected Item Removal Notices (IRNs), Design Change Authorizations (DCA), and open Nonconformance Reports (NCR).

The following is a summary of the open items by discipline from Master Data Base (MDB) System (Punch list) for Room 133:

Engineering	33
Paper Flow Group	63
Documentation	173
QC	58
Craft	714
Start Up	62
Misc	11

1,114

As from the above summary, the majority of the open items were in the Craft area. Of the 714 craft items 561 were related to electrical

separation items that had been identified, documented, and technically resolved, but the resolutions had not been implemented. The reason for the lack of implementation was the licensee's decision not to install tray covers and fire wrap materials until after this inspection, in order to provide the NRC inspectors access to the cable raceways and supports. The installation of tray covers, fire wrap material, or other barriers will resolve the majority of these items.

4. Electrical Raceway and Raceway Supports

The NRC inspector selected 80 sections of cable tray and 50 conduit runs for inspection. The specific raceway sections inspected are identified on the Raceway Inspection Data Sheets in Attachment 1 to this report.

The following attributes were utilized during this portion 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.
- .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.

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.

The NRC inspectors physically walked down and inspected 50 conduit runs, approximately 400 conduit supports, totaling approximately 2500 linear feet of conduit. The 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 with the exceptions of three inspection reports. The inspection reports for conduit runs C14R11208, C13G14654, and C02011932 had errors where the QC inspector had transposed numbers. These errors did not have technical significance however, the licensee had the total conduit runs re-inspected and new inspection reports prepared.

During this inspection the NRC inspector had informal discussions with craft, QC, engineering, and documentation personnel to determine job knowledge and overall familiarity with drawings, procedures and the day to day mechanics of their job. In every case the people were knowledgeable and professional.

The NRC inspectors physically walked down and inspected 80 cable tray sections, 123 cable tray supports, totaling approximately 1000 feet of cable tray. All of the cable trays and supports inspected were properly installed and the documentation was in order.

The discussions with QC personnel identified a concern of one of the QC inspectors. This individual was concerned about certain cable tray modifications where the siderails on the cable tray had been extended. The individual was primarily concerned with the engineering justification for these modifications and whether the supports could handle the additional loads. The NRC inspector made an adjustment in the sample pattern to include areas of the tray that had been modified to extend the siderails.

The NRC inspector identified six areas where the siderails on the cable tray had been extended. In every case the additions had been appropriately documented on approved engineering drawings or design change authorizations and had appropriate design review and documentation. The QC inspector will be advised on these inspection findings.

The NRC inspector visually inspected all Class 1E cable trays that had been modified. All of the modifications in this area were accomplished by bolting a 6" piece of 16 gauge galvanized steel to the existing 4" siderail. Therefore, the original strength and stiffness of the tray was maintained. The design change reviews for these modifications included both electrical and the structural supports. One of the requirements of G&H specification ES-19 and DCA 6,814 is that the static tray load does not exceed 35 pounds per square foot (PSF).

The NRC inspector, after examining the cable tray modifications, selected a section of cable tray at points T13GCCM10 and T13GCCM11 at the intersection with T13GCCM97 to use as a prime example for cable tray fill. Point T13GCCM10 had 295 cables in it for a total static weight of 21.76 PSF. Point T13GCCM11 had 371 cables in it for a total static weight of 28.67 PSF. Point T13GCCM97 had 247 cables in it for a total static weight of 19.92 PSF. These static weights are within the design limit of 35 PSF. This particular tray section is shown in the photographs on the following page.

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



9
Node Point T13GCCM10
South of Tee.



T13GCCM11

2
Node Point T13GCCM11
North of Tee.



2
Node Point T13GCCM17
Actual Tee Intersection.

5. Cable and Cable Separation

a. General

This section of the report contains information regarding the inspection of cables and cable terminations in the Cable Spreading Room and the results of that inspection. Detailed cable identification is contained in the data sheets of Attachment 1.

Eighty-six cables and 325 terminations were inspected. These cables either originated in or terminated in the Cable Spreading Room. The terminations were distributed among 26 cabinets and cable termination racks. The cables selected were inspected for specific attributes (described below). Criteria for acceptance were contained in FSAR, Section 8.3, IEEE 348, IEEE 420, Electrical Erection Specification 2323-ES-100, Revision 2 (and changes thereto), electrical QC inspection procedures, and specified G&H drawings.

b. Results of Inspection

No discrepancies were identified during the inspection of the selected cables/cable terminations. When apparent problems with acceptance criteria or attributes were identified, they were clarified through discussion with electrical QC inspectors and/or construction personnel. The resolution to an apparent problem was confirmed by appropriate documentation such as Design Change Authorization (DCA). Electrical QC personnel questioned were knowledgeable in their areas. All documentation and records relevant to the cables selected were available through the record vault in a timely manner and were complete and identifiable to the cables, raceways and cabinets being inspected. Separation of redundant electrical and instrumentation trains was found to meet the acceptance criteria contained in IEEE 384-1974 (draft) and other governing specifications, procedures and drawings.

c. Attributes

Predetermined attributes for inspection are identified on the 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.

.Cable Routing

Cable routing verification was limited to ascertaining that the cables entered the appropriate conduit from the termination cabinet/distribution panel and into the correct cable tray as indicated on the Cable Pull Card. Additional tracing through the cable trays was not done.

.Separation (Electrical)

Separation criteria for Class IE circuits for CPSES is contained in IEEE 384-1974 (draft). Typical separation details for cables and raceways is 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. The criteria contained in the above documents were used as basis for examining train separation. Cable termination racks and panels were also inspected for internal separation requirements.

.Craftmanship

Specific 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.

.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.

.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.
- .All cables terminated to cable terminal racks and distribution panels in accordance with applicable design drawings, Cable Termination Cards and Cable and Raceway Schedule Pull Cards.
- .All terminations of conductors were made to correct terminal blocks; conductor color and markings were verified.

.Documentation

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, (d) completely filled out, dated and signed by authorized QC inspector.

Included in the inspection of related records were (a) Cable Connection Sign Off Cards for origin or destination (b) Cable Megger and Continuity Cards and (c) Cable Pull Cards. The specific drawing of the interconnection diagram for the individual termination rack distribution panels was used to check actual cable terminations. Changes to any drawings (DCA's) affecting the selected cables were also examined.

No violations or deviations were identified in this area.

6. Heating, Ventilation and Air Conditioning (HVAC)

The NRC inspectors inspected approximately one-third of the HVAC duct and supports. Twenty-four duct supports and approximately 120 feet of duct in the Unit 1 Cable Spread Room were inspected in detail using FSAR Section 9.4 and the approved design drawings to determine the as-built condition. Attachment 1 contains a detailed listing of supports and duct inspected.

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

<u>Duct Supports</u>	<u>Duct Segments</u>
1. Location	1. Orientation
2. Dimensional Requirements	2. Size
3. Member Size	3. General Configuration
4. Welding	4. Associated Hardware
	5. Location

On six of the twenty-four duct supports the NRC inspectors identified dimensional discrepancies or incorrect member sizes. Similar problems had previously been identified in the CAT inspection report 50-445/83-18, and appropriate enforcement action was taken by Region IV. Corporate Consulting and Development Company, Ltd (CCL) had performed an evaluation of the most highly stressed supports in the Safeguard, Auxiliary, and Control Buildings. The results of this evaluation, documented in CCL report A-579-83, concluded that the duct and supports meet the functional design requirements. The NRC inspectors reviewed this evaluation to determine if the discrepancies identified above and the welding fell within the envelop of this evaluation. By observation the NRC inspectors were confident that the identified discrepancies were within the scope of the CCL evaluation. As a backup, the NRC inspectors asked the licensee to submit the supports for evaluation by CCL. A CCL letter to Bahnson Service Company (Bahnson) of March 26, 1984, documented the requested evaluation and clearly confirmed, to the NRC inspectors, that the duct supports were more than adequate as they were installed.

The NRC inspectors also reviewed the Bahnson procedures pertaining to the fabrication, installation, and inspection of the seismic duct and hangers. The CAT inspection report 50-445/83-18 had identified problems with the adequacy and detail of requirements of these procedures. As a result of the CAT inspections these procedures were revised.

The following is a list of the procedures reviewed:

QCI-CPSES-012, Rev 3, "Surveillance & Inspection of Anchor Bolt Installation"

QCI-CPSES-014, Rev. 1, "Seismic Duct Support Installation Inspection"

QCI-CPSES-009, Rev. 2, "Welder Qualification Inspection Procedure"

QCI-CPSES-011, Rev. 3, "Visual Inspection of Welds"

These revised procedures are appropriate and contain sufficient detail and acceptance criteria.

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

7. Fire Protection/Detection

The NRC inspector inspected essentially 100% of the Halon Fire Suppression, the Dry Pipe Pre-action Manual Water Sprinkler Systems, and Fire Detection System and 50% of Penetration Fire Stops in the Unit 1 Cable Spread Room.- See Attachment 1 for additional details.

The NRC inspector used FSAR Section 9.5 and NRC Branch Technical Position 9.5.1, the Associated G&H Specifications, and the approved design drawings as the acceptance criteria.

FSAR Figure 9.5-39 for Unit 1 Cable Spread Room was not consistent with FSAR Sections 9.5.1.2.3 Item 10 and 9.5.1.3.1 Item 22. Figure 9.5-39 incorrectly states that the primary fire suppression in the Cable Spread Room is an automatic water system and that there are 24 Fire Detectors in the room. Evidently the licensee failed to update the table when the other two sections of the FSAR were updated. Per the NRC letter of January 24, 1984, transmitting the Staff Supplemental Fire Protection Evaluation the staff recognized and approved the use of a Halon 1301 system as primary and a Dry Pipe Manual Water System as the Secondary Suppression System. The licensee is in the process of issuing a revision to the FSAR that will update table 9.5-39.

The NRC inspector found that the Halon and Water Sprinkler Systems and the Fire Detection System were appropriately installed and meet the requirements of the Branch Technical Position.

During the inspection of Penetration Fire Stops and Fire Doors the NRC inspector identified two areas of concern. The first area concerns three wall penetrations that were not sealed. The NRC inspector inspected 378 wall penetrations and found six that had not been sealed. Three of these had been individually identified on Inspected Item Removal Notice (IRN's), however, the other three were not identified. Wall penetrations 1083, 1084, 1085 were not properly sealed at the time of this inspection. These particular penetrations had been utilized for temporary cables and when the temporary cables were removed the penetrations were not sealed. The contractor for these seals, Bisco, has an open item, Final Inspection of All Seals in the Cable Spread Room. This inspection will be completed prior to the testing of the Halon system.

The second concern pertains to a breach of the frame on Fire Door E-29. This door has a one inch conduit and a one-half inch instrument tubing through the frame of the door. These two penetrations have not been sealed, but were scheduled to be sealed. The concern pertains to the adequacy of the seal to ensure that the three hour rating of this door is not jeopardized. Fire Door E-29 has been type tested and qualified by Southwest Research Institute and the penetration seals will need to be qualified or analyzed to ensure that the three hour qualification is not nullified by the tubing or conduit.

This is an unresolved item pending installation of the three wall seals and the qualification/certification and installation of the seals on door E-29 (8410-01).

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

8. Miscellaneous(Closed) Unresolved Item (8323-04) Conduit Raceway and Cable Tray Records

CP-QP-15.2 "Startup/Turnover QA Activities," (Rev 3, 4/16/81) established the general methods for verification of records pertinent to safety-related structures, systems and components.

CP-QP-18.2 "Implementation of the Permanent Plant Records Management Systems" (Rev 2, 10/29/82) described the organization and procedures relating to the implementation of records requirements. This procedure also described the Records Management Manual which was composed of a series of procedures covering topics such as organization, the ARMS (Automated Record Management System), the processing of ASME QA records, and the inclusion of permanent plant verification records in ARMS.

During the special inspection of the Fuel Building in May-June, 1983, the adequacy of control of conduit raceway and cable tray records was questioned. In November of 1983 a comprehensive records verification program was established to define and control installation and verification of QA records. This program included a method for identifying required conduit and cable tray information documentation via an "Electrical Management System" (EMS). All records are verified as complete by a verification group prior to transfer to the Permanent Plant Records Vault (PPRV). A Paper Flow Group (PFG) has been established to resolve all document deficiencies.

Based on the information contained in the above procedures and from discussion with personnel involved in the PPRV, this item is considered closed.

(Closed) Unresolved Item 8323-05 Control of Construction Punchlist. The "Construction Punchlist" no longer exists at CPSES. All items are now input into the Master Data Base (MDB). The MDB is a historical file that can output the total file or just open items. The MDB is an administrative tool utilized to monitor the status of ongoing activities. The MDB does not replace or supersede Inspection Reports, NCRs, or IRNs.

The controlling document for the MDB, prior to turnover is the "Administrative Guidelines for the Building Management Organization." These guidelines provide the controls for item input/removal through the MDB coordinator and the Paper Flow Group coordinator. Procedure CP-SAP-3 is the controlling document for MDB at the time of turnover.

This item is considered closed.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether the items are acceptable or not. There was one new unresolved item identified in paragraph 7 of this report. (8410-01)

10. Summary

The Unit 1 Cable Spread Room inspection identified no violations or deviations. The one unresolved item concerning the Penetration Fire Stops will be followed up during a subsequent inspection. Based on 392 inspector-hours, and the sample size in each inspected area, and the results of the inspection, it is the consensus of the NRC inspectors on this team that the Building Manager concept has provided sufficient controls of craft, QC and documentation for the completion of the Unit 1 Cable Spread Room.

11. Exit Interview

On April 11, 1984, Mr. J. T. Collins and other members of the RIV staff, including the Resident Inspectors met with Mr. Spence, and members of his staff and others as denoted in paragraph 1 of this report. The NRC inspectors discussed the findings of this report. The licensee acknowledged the unresolved item discussed above.

ATTACHMENT 1
INSPECTION DATA SHEETS FOR UNIT 1
CABLE SPREAD ROOM (RM - 133)

NRC I.R. 50-455/84-10

RACEWAY INSPECTION DATA SHEET

ROOM: CABLE SPREAD ROOM (Rm 133) DATE: 4-11-84

RACEWAY NUMBER/TYPE (Tray, Conduit)

T13GCCM SECTIONS 01 THRU 11; T14GCDH SECTIONS 40 THRU 43;
T13GCCM SECTIONS 46 THRU 49; T13GCCM SECTIONS 69 THRU 73;
T14GCDH SECTIONS 14 THRU 19; T13ØCCQ SECTIONS 23 THRU 28;
T13ØCCQ SECTIONS 16 THRU 21, 60; T14GCDH SECTIONS 01 THRU 14

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. <u>1.75</u>
IEEE 384	
Specification <u>ES-100, ES-19</u>	Procedure <u>QI-QP-11.3-24, QI-QP-11.3-26, QI-QP-11.3-40, QI-QP-11.3-50</u>

RESULTS: ALL OF THE ABOVE TRAY SECTIONS (80), APPROXIMATELY
1000 LINEAR FEET OF CABLE TRAY, AND THE ASSOCIATED SUPPORTS
(123 SUPPORTS) WERE INSTALLED IN ACCORDANCE WITH S-910
AND THE APPROVED DESIGN DOCUMENTS, AND DOCUMENTED
BY INSPECTION REPORTS. THE SAMPLES TO BE INSPECTED

CON'T NEXT PAGE
 RESOLUTION: N/A

INSP. RPT. NO: 84-10 PAGE NO: Att 1-1 INSPECTOR: MARTIN OBERG

RACEWAY INSPECTION DATA SHEET

ROOM: CABLE SPREAD ROOM (Rm 133) DATE: 4-11-84

RACEWAY NUMBER/TYPE (Tray, Conduit)

T13GCCM SECTIONS 34 THRU 45, 52 & 63; T14Ø CDJ
SECTIONS 30, 35, 38, & 44 THRU 49. ALSO INSPECTED
15 SECTION OF NON CLASS 1E CABLE TRAY, BUT DID NOT
INCLUDE IN SAMPLE SIZE.

ATTRIBUTES

Type & Size
 Tray Covers
 Grounding
 Craftsmanship

Identification
 Fill Factor
 Supports
 Separation (Physical/Electrical)

Documentation (Installation
 & Inspection)
 Connections

ACCEPTANCE CRITERIA

FSAR Section 8.3
 IEEE 384
 Specification ES-100, ES-19

R.G. 1.75

Procedure SEE CONT. SHEET

RESULTS: WERE ADJUSTED TO INCLUDE A SELECTION OF TRAY
THAT HAD SIDE RAIL MODIFICATIONS. THIS ADJUSTMENT WAS
MADE DUE TO A QUESTION THAT AROSE DURING
DISCUSSIONS WITH A QC INSPECTOR.

RESOLUTION: N/A

INSP. RPT. NO: 84-10

PAGE NO: ATT 1-2

INSPECTOR: MARTIN
OBORG

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: CABLE SPREAD ROOM (Rm 133)1. PROCEDURES CONT'D. - QI-QP-11.10-1, QI-QP-11.10-2, QI-QP-11.10-5

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

<u>2323-E1-0712-01</u>	<u>2323-S-916</u>	<u>FSEG As-BUILTS</u>
<u>2323-E1-0712-02</u>	<u>2323-S-917</u>	
<u>2323-E1-0712-04</u>	<u>2323-S-921</u>	
<u>2323-E1-0712-11</u>	<u>2323-S-922</u>	
<u>2323-E1-0712-13</u>	<u>2323-E1-1701</u>	
<u>2323-E1-0712-12</u>	<u>2323-E1-1702</u>	
<u>2323-E1-0712-14</u>	<u>2323-E1-1702-01</u>	
<u>2323-E1-0712-15</u>	<u>2323-E1-1702-02</u>	
<u>2323-E1-0712-01S</u>	<u>2323-E1-1703</u>	
<u>2323-E1-0712-02S</u>	<u>2323-E1-1705</u>	
<u>2323-E1-0715</u>	<u>2323-E1-1413</u>	
<u>2323-E1-0715-01</u>	<u>2323-E1-1800 SERIES</u>	
<u>2323-S-901</u>	<u>FSE-190</u>	
<u>2323-S-902</u>	<u>FSE-191</u>	
<u>2323-S-903</u>	<u>FSE-214</u>	
<u>2323-S-915</u>	<u>FSE-159 SERIES</u>	

INSP. RPT. NO: 84-10 - PAGE: ATT 1-3 INSPECTOR: MARTIN OBERG

RACEWAY INSPECTION DATA SHEET

ROOM: CABLE SPREAD ROOM (Rm 133) DATE: 3-30-84

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

C14B11217, C14B11218, C14R11208, C14R11209, C14R11206,
C13G07049, C14B11214, C12Ø15455, C14Ø20332, C12G16831,
C13Ø05612, C12G06223, C13G05616, C12Ø15462, C13Ø15764,
C15B14114, C12Ø06457, C13G14797, C12Ø19046, C14G07052

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. <u>1.75</u>
IEEE 384	
Specification <u>ES-100</u>	Procedure <u>QI-QP-11.3-23, QI-QP-11.5-10-1</u>

RESULTS: ALL OF THE CONDUIT INSPECTED (50 SECTIONS) AND THE ASSOCIATED SUPPORTS WERE INSTALLED IN ACCORDANCE WITH S-910 DRAWINGS, AND THE APPROPRIATE DESIGN DRAWINGS AND PROPERLY DOCUMENTED ON INSPECTION REPORTS WITH THE EXCEPTION OF THREE CONDUITS. CONT ON

NEXT PAGE RESOLUTION: N/A

INSP. RPT. NO: 84-10 PAGE NO: Att 1-4 INSPECTOR: JONSON MARTIN

RACEWAY INSPECTION DATA SHEET

ROOM: CABLE SPREAD ROOM (Rm 133) DATE: 3-30-84

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

C12Ø13545, C13Ø15767, C13Ø19169, C13G14798, C12Ø06031,
C13G21239, C13G04289, C13G03308, C12Ø21173, C12Ø21196,
C12GØ21192, C03G11310, C04G06466, C02Ø07973, C13G14954,
C03G05670, C03Ø5655, C12G15219, C13G15793, C13Ø11612

ATTRIBUTES

Type & Size
 Tray Covers
 Grounding
 Craftsmanship

Identification
~~Fill Factor~~
 Supports
 Separation (Physical/Electrical)

Documentation (Installation
 & Inspection)
 Connections

ACCEPTANCE CRITERIA

FSAR Section 8.3
 IEEE 384
 Specification ES-100

R.G. 1.75

Procedure QI-QP-11.3-23, QI-QP-11.3-40
QI-QP-11.10-1

RESULTS: QRTY C14P11208, C13G14654; C02Ø11992 HAD

DOCUMENTATION ERRORS, WHERE THE INSPECTOR HAD
MADE TRANSPOSITION ERRORS ON THE INSPECTION
REPORT. THESE 3 CONDUIT RUNS WERE RE-INSPECTED
AND PROPERLY DOCUMENTED ON NEW INSPECTION REPORTS.

RESOLUTION: N/A

INSP. RPT. NO: 84-10

PAGE NO: 9112-3

INSPECTOR: OBERG
MARTIN
JOHNSON

RACEWAY INSPECTION DATA SHEET

ROOM: CABLE SPREAD ROOM (Rm133) DATE: 3-30-84

RACEWAY NUMBER/TYPE (Tray, Conduit)

C12007975, C02011932, C13G14654, C12G13056, C12G19612,
C12G07907, C12G13355, C12G11492, C12G06348, C02G07968

ATTRIBUTES

Type & Size
Tray Covers
Grounding
Craftsmanship

Identification
Fill Factor
Supports
Separation (Physical/Electrical)

Documentation (Installation
& Inspection)
Connections

ACCEPTANCE CRITERIA

FSAR Section 8.3
IEEE 384
Specification ES-100

R.G. 1.75
Procedure QI-QP-11.3-23, QI-QP-11.3-40,
QI-QP-11.10-1

RESULTS: _____

RESOLUTION: N/A

INSP. RPT. NO: 84-10 PAGE NO: A11-6 INSPECTOR: OBERG
JOHNSON
MARTIN

CABLES/CABLING INSPECTION DATA SHEET

Room: Cable Splicing Room

Date: 3/12 - 4/11/1989

CABLE IDENTIFICATION: Attached is a list of cabinets and termination racks containing specific cables and the number of terminations inspected.

ATTRIBUTES

Cable Type
Routing
Separation (Physical/Electrical)
Craftsmanship

Color Code (Train/Channel) ^{FSAR} (2,3,1,3)
Terminations
~~Fill~~ Factor
Documentation (Installation & Inspection)

ACCEPTANCE CRITERIA

FSAR, Section 8.3
IEEE 384, 420, ~~422~~
Specifications ES-100

R.G. QI-QP-11.3
QI-QP-11.3-26
Procedures QI-QP-11.3-28

RESULTS: 86 cables and 325 terminations were checked in 26 cabinets and cable termination racks. No discrepancies were identified in any of the attributes inspected.

RESOLUTION: N.A.

INSP. RPT. NO: 50-445/8910 PAGE NO: B172-7 INSPECTOR: CE Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading Room - Cable Identification: listed by panels/Termination Racks showing cable number and number of terminations inserted.

Cable Termination Rack - CPXECPTC01

A0015748	5	
E0015788	12	5 cables
A0015706	6	34 terminations
A0015701	6	:
A0015674	5	

Cable Termination Rack - CP1ECPETC02

EG 139224	2	EG 139207	2
EG 123636	7	EG 112932	5
EG 123453	5		
EG 139217	2	12 cables	
EG 123633	5	49 terminations	
EG 123584	5		
EG 123675	5		
EG 122083	2		
EG 009317	2		
EG 104310	7		

INSP. RPT. NO: 50:445/2410 PAGE: B1128 INSPECTOR: C. P. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading Room

Instrument Distribution Panel - CPXECDEPCO2

EG 105545	1	3 cable
EG 021974M	1	3 terminations
EG 205545	1	

Cable Termination Rack - CPXECPRTCO2

AG 015670	5	
AG 015719	7	5 cable
AG 015726	7	31 terminations
AG 015744	12	
EG 138649	12	(Pin Connector Cable)*

Cable termination Rack - CPIECPRTCO4

EØ127551	3	
EØ138883	6	
EØ138884	5	6 cable
EØ112209	2	23 terminations
EØ138856	2	
EØ138878	5	

INSP. RPT. NO: 50-445/8410 PAGE: 871-9 INSPECTOR: C R Oberg

* Pin connector conductors are not counted in the number of terminations. They are counted as one cable.

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading RoomCable Termination Rack - CPIECPRTC 05

EG 112247	12	
EG 104532	3	5 cables
EG 113913	2	26 terminations
EG 113626	9	
EG 139374	12	(Pin Connector Cable)

Cable Termination Rack - CPIECPRTC 07

EØ 107320	3	
EØ 119962	9	4 cables
EØ 123620	5	21 terminations
EØ 123618	4	

Cable Termination Rack - CPIECPRTC 08

EG 015988	5	
EG 016211	2	5 cables
EG 123621	5	17 terminations
EG 123627	5	
EG 139508	:2	(PIN CONNECTOR CABLE)

INSP. RPT. NO: 50-445/8410 PAGE: 411-10 INSPECTOR: C. R. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading Room

Cable Termination Rack - CP1ECPRTC 10

EØ 121831	7	3 cables
EØ 121833	7	14 terminations
EØ 140405	8	(PIN CONNECTOR CABLE)

Cable Termination Rack - CP1ECPRTC 11

EG 145299	2	
EG 121947	5	3 cables
EG 138491	2	9 terminations

Cable Termination Rack - CP1ECPRTC 13

EØ 138141	3	2 cables
EØ 138791	2	5 terminations

Cable Termination Rack - CP1ECPRTC 14

EG 127688	2	2 cables
EG 121784	5	7 terminations

INSP. RPT. NO: 50-445/8410 PAGE: B112-4 INSPECTOR: C. R. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Splicing RoomERF Transducer Panel - CPIECPRLV16

EØ 130596	2	3 cables
EØ 146247	2	13 terminations
EØ 146378	9	

Cable Termination Rack - CPIECPRTC16

EØ 127745	8	2 cables, 8 terminations
EØ 140399	8	(PIN CONNECTOR CABLE)

Cable Termination Rack - CPIECPRTC17

EG 109773	2	2 cables
EG 127653	6	8 terminations

BOP Aux. Relay Rack 8 - CPIECPRCR 18

EØ 131529	2	1 cable 2 terminations
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Cable Termination Rack - CPIECPRTC19

AØ 131091	2	1 cable 2 terminations
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INSP. RPT. NO: 50-445/8410 PAGE: ATT 12 INSPECTOR: C. R. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading RoomCable Termination Rack - C/IECPRTC 20

EG118185 7 5 cables

EG107160 5 12 terminations

EG138965 12 (PIN CONNECTOR CABLE)

EG138966 12 (PIN CONNECTOR CABLE)

EG138967 12 (PIN CONNECTOR CABLE)

Cable Termination Rack - C/IECTRTC 22

AΦ017035 2 2 cables

AΦ130463 2 4 terminations

Cable Termination Rack - C/IECPRTC 23

AG 016201 2 2 cables

AG 130466 2 4 terminations

ERF MUX CAB 2 (TRB) - C/IECPRCB 24

EG146010 2 1 cable

2 terminations

INSP. RPT. NO: 50-445/8410 PAGE: 11-13 INSPECTOR: C. E. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spooling Room

Cable Termination Rack - CPIECPRTC 26

EQ 106065	2	1 cable; 2 terminations
EQ 138632	12	(PIN CONNECTOR CABLE)

Cable Termination Rack - CPIECPRTC 27

EG 118224	9	1 cable 9 terminations
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BOP AUX Relay Rack 11 - CPIECPRCR 33

EG 123821	2	1 cable 2 terminations
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Cable Termination Rack - CPIECPRTC 41

EØ 119966	2	3 cable
EØ 110757	2	6 terminations
EØ 112675	2	

INSP. RPT. NO: 50-445/8410 PAGE: Att 14 INSPECTOR: C. R. Oberg

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading Room

Cable Termination Rack - CPIECPBTC 42

EG118149	4	
EG015826	2	5 cables
EG015827	2	12 terminations
EG017023	2	
EG111183	2	

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Cable Spreading Room - Procedure

reviewed:

CP-QP-11.3 Rev 4; 8/14/83 Electrical Inspection Activities

CP-QP-11.3-23 Rev 11 3/6/84 Class IE Conduit Runway
Inspection

CP-QP-11.3-26 Rev 20 3/29/84 Electrical Cable Installation
Inspection

QI-QP-11.3-28 Rev 20 2/8/84 Class IE Cable Termination

QI-QP-11.3-29 Rev 15 1/18/84 Electrical Separation

QI-QP-11.3-29.1 Rev 15 2/13/84 Verify Electrical Separation

INSP. RPT. NO: 84-10 PAGE: ATTN INSPECTOR: DBERL

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Documentation
Records for cables identified previously were reviewed.
No deficiencies were found

INSP. RPT. NO: 50-445/8410 PAGE: 872-17 INSPECTOR: C.R. Oberg

HVAC INSPECTION DATA SHEET

Room: Cable Tray Spread Room

DATE: 2-26-84

AREA(S) EXAMINED: HVAC seismic supports and duct segments

ATTRIBUTES:

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

ACCEPTANCE CRITERIA:

FSAR SECTION 9.4
Specifications US-85

R.G. _____
Procedure _____

RESULTS: The NRC inspector reviewed and observed twenty-four seismic duct supports and associated duct segments. This review consisted of approximately 1/2 of the seismic duct supports in the cable tray spread room.

The attributes observed by the NRC inspector for the review of the HVAC seismic duct supports

RESOLUTION: and duct segments are listed below.

<u>Seismic duct supports</u>	<u>Duct segments</u>
<u>1. location</u>	<u>1. orientation</u>
<u>2. dimensional requirements</u>	<u>2. size (segments)</u>
<u>3. member size</u>	<u>3. general configuration</u>
<u>4. welds</u>	<u>4. associated hardware</u>
	<u>5. location</u>

INSP. RPT. NO: 84-10

PAGE NO: APP 13

INSPECTOR: JOHNSON
MARTIN

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: Six of the twenty-four supports
inspected indicated discrepancies. Two duct support
members ^{were} smaller than indicated on drawing.
Four had dimensional discrepancies that were
out of tolerance as required by procedure.
There were welding deficiencies observed by the NRC
inspector. ~~There were no apparent~~
discrepancies noted on associated duct segments.
The NRC inspector was informed by the licensee
representative that Corporate Consulting &
Development Company, LTD (CCL) performed an
evaluation of the most highly stress hangers in
the Safeguards, Auxiliary Building, and control building.
This evaluation was done because of the
GAT Team inspection findings on weld deficiencies.
The results of the four-phase evaluation of the
weld hanger-force concluded that the duct work
and supports meet the functional design
requirement as intended. There were no welds
observed by the NRC inspector that fell out
of the scope of the CCL evaluation

INSP. RPT. NO: 84-10 : PAGE: 81219 INSPECTOR: JOHNSON
MARTIN

HVAC INSPECTION DATA SHEET

Room: Cable Tray Spread Room

DATE: 3-29-84

AREA(S) EXAMINED: HVAC seismic duct supports, and associated duct segments

ATTRIBUTES:

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

ACCEPTANCE CRITERIA:

FSAR SECTION 9.4
Specifications MS-85

R.G. _____
Procedure

RESULTS: HVAC seismic duct supports : ^{rev 1} CB-807-IN-B,
^{rev 0} CB-807-IN-4E, ^{rev 1} CB-807-IN-1C, ^{rev 1} CB-807-IN-1A,
^{rev 1} CB-807-IN-1AA, ^{rev 0} CB-807-6-IN-4T, ^{rev 0} CB-810-6-IN-4C,
^{rev 0} CB-807-6-IN-1Y, ^{rev 1} CB-807-IN-1AE, ^{rev 0} CB-807-6-IN-1L,
^{rev 0} CB-807-IN-C1, ^{rev 2} CB-807-IN-1G, ^{rev 1} CB-807-IN-F9A,
^{rev 2} CB-807-IN-1Q, ^{rev 1} CB-807-IN-CCL-1, ^{rev 2} CB-807-IN-1J,
^{rev 0} CB-807-IN-4E, ^{rev 0} CB-807-IN-4D, ^{rev 0} CB-810-6-IN-4A,
~~_____~~ : ^{rev 0} CB-807-IN-1K, ^{rev 0} CB-807-IN-4B, ^{rev 0} CB-807-6-IN-3B,
^{rev 0} CB-807-IN-1E, ^{rev 0} CB-807-IN-1F

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: _____

HVAC duct segments:

1) System EMD/3 UAVE

Jt #s 1, 2, 3, through Joint # 47

2) System SBD/1 UAVE

1, 2, 3, 4, 5 & 6

3) System SMD/2 UAVE

12 to 37

INSP. RPT. NO: 84-10 PAGE: Att 1-21 INSPECTOR: JOHNSON
MARVIN

CPSES

FIRE PROTECTION INSPECTION DATA SHEET

ROOM: CABLE SPREADING ROOM - UNIT 1

DATE: 3/26/84

AREA(S) EXAMINED: HALON FIRE SUPPRESSION SYSTEM

ATTRIBUTES: (Proper Installation)

Penetration Fire Stops	Fire Detection
<u>Fire Suppression</u>	Fire Coatings
Documentation (Installation & Inspection)	

ACCEPTANCE CRITERIA:

FSAR
 R.G.
 Specification 2323-MS-38E

~~Appendix R~~ N/A
B.T.P. 9.5.1 APIA
 Procedure NFPA 12A

RESULTS: THE PRIMARY FIRE SUPPRESSION SYSTEM

FOR UNIT 1 CABLE SPREADING ROOM IS AN
ANSUL HALON 1301 AUTOMATIC SYSTEM WITH
ACTUATION BY IONIZATION DETECTOR WITH CROSS
ZONE LOGIC. THE SYSTEM IS IDENTIFIED ON
DWGS. E 81388-05, E 81388-07, E 81388-8 AND
E 81388-9 AND WAS INSTALLED BY GRINNELL

RESOLUTION: FIRE PROTECTION SYSTEMS. THE SYSTEM
HAS ROOM LOCATED ADJUT STATIONS FOR PERSONNEL
PROTECTION AND REMOTE MANUAL ACTUATION
CAPABILITY. SYSTEM IS INSTALLED AS
DESIGNED.

INSP. RPT. NO. 84-10

PAGE NO. APP-22
101

INSPECTOR: [Signature]
4/4/84

CPSES

FIRE PROTECTION INSPECTION DATA SHEET

ROOM: CABLE SPREADING ROOM - UNIT 1

DATE: 3/26/84

AREA(S) EXAMINED: DRY-PIPE, PRE-ACTION - MANUAL WATER SPRINKLER SYSTEM

ATTRIBUTES: (Proper Installation)

~~Penetration Fire Stops~~

~~Fire Detection~~

Fire Suppression

~~Fire Coatings~~

~~Documentation (Installation & Inspection)~~

ACCEPTANCE CRITERIA:

FSAR

~~APPENDIX R~~ N/A
B.T.P. 9.5.1, APP. A
Procedure

R.G.

Specification 2323-MS-98

RESULTS: BACKUP FIRE SUPPRESSION IS PROVIDED WITH THE DRY PIPE, PRE-ACTION, MANUAL WATER SPRINKLER SYSTEM. THE SYSTEM IS IDENTIFIED ON GRINNELL DWGS. 94 AND 94A. SYSTEM IS INSTALLED AS DESIGNED.

THE NRC INSPECTOR DISCUSSED WITH A REPRESENTATIVE OF THE LICENSEE THE FACT

RESOLUTION: THAT THIS SYSTEM IS PRESENTLY DESCRIBED IN THE FSAR AS AN AUTOMATIC WET-PIPE SPRINKLER SYSTEM AND WAS INFORMED THAT THIS IS BEING CORRECTED IN THE NEXT FSAR REVISION.

INSP. RPT. NO. 84-16

PAGE NO. 151

871-23

INSPECTOR: [Signature]

4/4/84

CPSES

FIRE PROTECTION INSPECTION DATA SHEET

ROOM: CABLE SPREADING Room - Unit 1

DATE: 3/26/04

AREA(S) EXAMINED: FIRE DETECTION

ATTRIBUTES: (Proper Installation)

~~Penetration Fire Stops~~
~~Fire Suppression~~
~~Documentation (Installation & Inspection)~~

Fire Detection
~~Fire Coatings~~

ACCEPTANCE CRITERIA:

FSAR
R.G.
Specification 2323-ES-17B

~~Appendix R~~ N/A
B.T.P. 9.5.1 MPA
~~Procedure~~

RESULTS: FIRE DETECTION IS PROVIDED BY

IONIZATION FIRE DETECTORS INSTALLED
PER GIBBS AND HILL D.W.C. 2323-EI-2013
ISSUE 14 of 12/23/03. THESE DETECTORS ACTIVATE,
BY CROSS ZONE LOGIC, TWO LOCAL HORN ALARMS,
A REMOTE ALARM AND THE AUTOMATIC HALON
SUPPRESSION SYSTEM. THE D.W.C. SHOWS 35

~~RESULTS:~~ DETECTORS; THE NRC INSPECTOR SIGHTED 35
DETECTORS INSTALLED AT THE INDICATED LOCATIONS
AND HEIGHTS. THE NRC INSPECTOR NOTED TO
A LICENSEE REPRESENTATIVE THAT THE TABLE IN
CHAPTER 9 OF THE FSAR INDICATED 24

INSP. RPT. NO. 84-10 ; PAGE NO. APP-24 INSPECTOR: JAS [Signature] 4/4/04

DETECTORS REQUIRED. THE LICENSEE INFORMED THE
NRC INSPECTOR THAT THE ADDITIONAL DETECTORS
WERE REQUIRED TO PROVIDE ADEQUATE AREA COVERAGE
AND THE FSAR TABLE WOULD BE UPDATED IN THE
NEXT REVISION.

CIPSES

FIRE PROTECTION INSPECTION DATA SHEET

ROOM: CABLE SPREADING ROOM - Unit 1 - FIRE ACC. DATE: 3/26/84
64

AREA(S) EXAMINED: PENETRATION FIRE STOPS - CABLE,
CONDUIT, PIPE & HVAC DUCT PENETRATIONS THROUGH
FIRE RASA 3-HR BARRIER; FIRE DOORS.

ATTRIBUTES: (Proper Installation)

Penetration Fire Stops Fire Detection
Fire Suppression Fire Coatings
Documentation (Installation & Inspection)

ACCEPTANCE CRITERIA:

FSAR - Appendix R N/A
R.G. D.T.P. 9.5.1 App. A
Specification No. 2323-MS-38F Procedure

RESULTS: CABLE CONDUIT, PIPE AND HVAC DUCT PENETRATIONS
IDENTIFIED ON RISC DWG'S EC-807-133 sheets 1 thru 3,
EC-807-FA75 SHEETS 1 thru 3 AND EC-807-134A SHEET
1 thru 3. 380 VARIOUS PENETRATIONS INSPECTED OUT
OF 749 TOTAL. THIS NUMBER ALSO INCLUDES SIX
3-HR RATED FIRE DOORS.

SIX ^{CABLE CONDUIT} PENETRATIONS WERE FOUND NOT SEALED:

RESOLUTION: 1057, 1059, 5050, 5051, 5052 AND 5053; THE
LICENSEE DID HAVE INSTALLATION REMOVAL NOTIFICATION
SHEETS ON THESE PENETRATIONS. THREE ^{CABLE CONDUIT} PENETRATIONS
WERE FOUND NOT SEALED AND WITH NO IRN ON
FILE: 1083, 1084, 1085, THESE ARE 2 INCH PENETRATION

INSP. RPT. NO. 84-10 PAGE NO. 173-25 INSPECTOR: M.F. MURPHY
4/2/84

INSPECTION DATA CONTINUATION SHEET

INSPECTION ELEMENT: FOUR FLOOR ^{CABLE CONDUIT} PENETRATIONS WERE
FOUND THAT WERE NOT IDENTIFIED ON THE
BISCO DRAWINGS. THEY WERE SEALED.
SIX 3 HR-RATED FIRE DOORS WERE INSPECTED.
THEY ARE IDENTIFIED ON DWG. 2323-A1-0508
AS E-20, E-20A, E-20B, E-21, E-22, AND
E-29. E-29 IS A SPECIAL DOOR CONNECTING
THE CABLE SPREAD ROOM WITH THE CORRIDOR
ON THE SOUTH WALL, THIS DOOR HAS
TWO PENETRATIONS THROUGH THE DOOR FRAME;
ONE IS A COPPER TUBE AND THE OTHER
IS A CABLE CONDUIT WITH AN UNSEALED
AIR GAP AROUND THE EXTERIOR OF THE
CONDUIT. THE LICENSEE WAS ADVISED THAT
ANY MODIFICATION TO A RATED FIRE
DOOR AND/OR ITS FRAME, THAT WAS
NOT BEEN EVALUATED AND ACCEPTED BY
UL, COMPROMISED THE RATING OF THE DOOR.

THE NRC INSPECTOR WAS TOLD BY A REPRESENTATIVE
OF THE LICENSEE THAT THE FINAL WALKDOWN OF
CABLE PENETRATIONS ~~WAS~~ ^{HAS} NOT BEEN MADE
 INSP. RPT. NO: 84-10 PAGE: 242 ^{APP-26} INSPECTOR: M. S. Murphy

IN THE CABLE SPREADING ROOM FOR UNIT 1. THE
NRC INSPECTOR NOTED THAT THIS IS NOT
LISTED ON THE WORK ITEMS PUNCH LIST AS
AN OPEN ITEM.