Revamp Results if Based on TRT investigation different

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

May 25, 1984

NOTE TO: Tom Ippolito

SUBJECT: COMANCHE PEAK - TELECON WITH H. MYERS/J. SIMPSON

On May 4, 1984 I received a phone call from H. Myers and J. Simpson. Their call related to Comanche Peak. Several question or concerns were passed on to me that I'd like for you to follow up on and get me a written report within two weeks. Part of their concern related to their belief that the NRC doesn't follow up on such concerns.

The principal matters raised included:

1. The allegation regarding the forcing in place of the main steam line using a crane. Did it occur; was it acceptable; was it properly reported; did the NRC issue an evaluation.

2. Concern as to whether there was an adequate technical bases for the derated value for the polar crane. Is the new derated value coincidently the maximum load expected?

3. Regarding [redacted] concern about welding, does the NRC believe he was, or was not, requested to perform a welding that is outside the approved procedure. What is our technical view for such work?

Darrell G. Eisenhut

cc: John Collins
H. Denton

P/181

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

JUN 18 1984

H. ~~~~ VIETTI

MEMORANDUM FOR: Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

FROM: Thomas A. Ippolito, Project Director
Comanche Peak
Division of Licensing

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION - RESPONSE TO ALLEGATIONS

REFERENCE: Note to, T. A. Ippolito from D. G. Eisenhut, dated May 25, 1984

By the above referenced note, you requested responses to three (3) concerns identified to you by H. Myers and J. Simpson on the Comanche Peak Steam Electric Station (CPSES). The principal matters raised deal with allegations that were related to us through the Atomic Safety and Licensing Board hearing. Enclosed are the staff responses to these allegations. If I can be of further assistance, please let me know.

Sincerely,

Thomas A. Ippolito, Project Director
Comanche Peak
Division of Licensing

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Allegation 1. One of the main steam lines in Unit 1 was moved using the polar crane, thereby placing the section of pipe line in an unsafe stressed condition.

Response

The above alleged improper construction practice was expressed by [redacted] in an affidavit dated February 3, 1983, prepared for Citizens Association for Sound Energy (CASE) and in an interview conducted on April 14, 1983, by members of the NRC Office of Investigations Field Office, Region IV. An inspection of this and other allegations was conducted May 10 - July 1 and September 9-22, 1983 and documented in Inspection Report 50-445/83-27, dated September 29, 1983 (See Enclosure 1 Allegation #2).

Although Brown & Root personnel named by [redacted] as being involved with the movement of the Steam Line contradicted the allegation, the NRC inspector conducted an independent review of the onsite documented records regarding this matter.

The reactor building polar crane was utilized in a vertical lift to assist repositioning a section of permanent piping mentioned by [redacted] The licensee has maintained a documented engineering record of the specific line movement. The NRC inspector noted that the movement of the line was necessary in order that a large section of temporarily installed flushing pipe could be removed, and to relocate the permanent section of the main steam line that had "sagged" due to the weight of the temporary pipe. The record folder contains meeting notes (memorandum) which reflect discussions with Westinghouse (NSSS Supplier) and the cognizant A/E representatives prior to the work activity, in addition to establishing engineering limitations and acceptability. The line was moved on January 16, 1982 under the supervision of the field mechanical engineering group, and was witnessed by an engineering representative who observed the installation and use of the dynamometer (to register crane lifting loads) throughout the operation. The lift connections and applied forces were recorded and retained in the file. The lifting points were consistent with the hanger locations to simulate the permanent support system. The as-built configuration was analyzed for stress and the acceptability of the line confirmed. In addition, the recent completion of the "Reactor Hot Functional Test" did not reveal any undue stress conditions. The allegation could not be substantiated. No violations or deviations were identified in this area of the inspection.

Allegation 2. The Containment Polar Crane was derated. Why was it derated to a point where it was still able to move the reactor vessel head?

Response

Containment Polar Crane derating is an accepted, anticipated practice during the transition from the construction phase to the operation phase. As stated in the Applicant's Final Safety Analysis Report (FSAR), Section 9.1.4.3.1, "The Containment Polar Crane is used during the plant construction phase for lifts up to 475 tons (for handling the reactor vessel and steam generators) prior to its intended normal service. The use of the crane during the construction phase does not imply any nuclear safety related condition. During refueling or maintenance operations, the Containment Polar Crane handles a maximum noncritical load of 175 tons. The heaviest load expected to be lifted is the reactor vessel head assembly."

Originally, the Polar Crane was rated at 499 tons and during the preconstruction phase of Comanche Peak appropriate testing of the Crane was completed. Prior to preoperational testing, the polar crane was derated to 175 tons, consistent with the load requirements for plant operation. The containment polar crane was adequately tested in its derated configuration for handling the maximum critical load (Reactor Vessel head assembly). Static and dynamic tests with a load equal to 125% of the maximum critical load were performed subsequent to the derating modifications to the main hoist. The Safety Evaluation for Containment Polar Crane Testing (See Enclosure 2) will appear in a future supplement to the Safety Evaluation Report for Comanche Peak Steam Electric Station.

Allegation 3. [redacted] was required to perform welding activities in violation of the approved procedures.

Response

This allegation is still under litigation in the Atomic Safety and Licensing Board (ASLB) hearing. [redacted] cited specific concerns that fall into the scope of this general allegation. The staff expanded the scope of the specific concerns and performed inspections in these areas. These inspections raised questions by the staff. Resolution of these matters will depend on the applicant's response to staff inquiries.

SEP 29 1983

In Reply Refer To:
Dockets: 50-445/83-27

Texas Utilities Generating Company
ATTN: R. J. Gary, Executive Vice
President & General Manager
2001 Bryan Tower
Dallas, Texas 75201

Gentlemen:

This refers to the inspection conducted by Mr. R. C. Stewart of this office during the periods May 10-July 1, and September 9-22, 1983, of activities authorized by NRC Construction Permit CPPR-126 for the Comanche Peak, Unit 1.

Areas examined during the inspection included inspection of alleged improper construction practices expressed by Robert L. Messerly and an individual who requested confidentiality. 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.

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).

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

Sincerely,

"Original Signed by:
G. L. MADSEN"

G. L. Madsen, Chief
Reactor Project Branch 1

Enclosure:
Appendix - NRC Inspection Report
50-445/83-27

cc w/enclosure:
H. C. Schmidt, Project Manager
Texas Utilities Generating Company
2001 Bryan Tower
Dallas, Texas 75201

R. B. Clements, Vice President-
Nuclear
(same address as above)

Texas Utilities Generating Company
ATTN: H. C. Schmidt, Project Manager
2001 Bryan Tower
Dallas, Texas 75201

Texas Utilities Generating Company
ATTN: B. R. Clements, Vice President, Nuclear
2001 Bryan Tower, Suite 1735
Dallas, Texas 75201

bcc to DMB (IE01)

bcc distrib. by RIV:

RPB1	D. Kelley, SRI-Ops
RPB2	R. Taylor, SRI-Cons
TPB	Section Chief (RPS-A)
J. Collins, RA	J. Gagliardo, DRRP&EP
C. Wisner, PAO	T. F. Westerman, ES
M. Rothschild, ELD	M. Resner, OIA

MIS SYSTEM
RIV File
TEXAS STATE DEPT. OF HEALTH
Juanita Ellis
David Preister

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/83-27

Docket: 50-445

Construction Permit: CPPR-126

Licensee: Texas Utilities Generating Company (TUGCO)
2001 Bryan Tower
Dallas, Texas 75201

Facility Name: Comanche Peak, Unit 1

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

Inspection Conducted: May 10-July 1, and September 9-22, 1983

Inspector: _____ 7-28-83
R. C. Stewart, Reactor Inspector — Date
Reactor Project Section A

Approved: D M Hunnicutt 9/28/83
D. M. Hunnicutt, Chief — Date
Reactor Project Section A

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Inspection Summary

Inspection Conducted May 10-July 1, and September 9-22, 1983
(Report 50-445/83-27)

Areas Inspected: Special, unannounced inspection of alleged improper construction practices expressed by Robert L. Messerly in an affidavit dated February 3, 1983, prepared for Citizens Association for Sound Energy (CASE) and in an interview conducted on April 14, 1983, by members of the NRC Office of Investigations Field Office, Region IV. The inspection involved 120 inspector-hours onsite by one NRC inspector.

Additional information was received from an individual, who requested confidentiality, that a former B&R millwright had drilled holes through rebar without the required engineering approvals. This supplemental inspection involved 10 inspector-hours onsite by one NRC inspector.

Results: Of the seven allegations regarding improper construction practices expressed by Mr. Messerly, five were found to be unsubstantiated. One allegation regarding improper documentation was found to be substantiated, however, the error was properly corrected by the licensee and appears to lack technical merit; and one allegation regarding the posting of NRC Form 3, could neither be refuted nor substantiated, however, it too appears to lack technical merit. No violations or deviations were identified.

Results of Supplemental Inspection

The allegation that unauthorized cutting of rebar during installation of "trolley tracks" in the fuel handling building is considered to be unsubstantiated. No violations or deviations were identified.

Details

A. Persons Contacted

Texas Utilities Services Incorporated (TUSI) Employees

B. G. Scott, Quality Engineering Supervisor
G. Tanley, General Superintendent
C. R. Hooton, Lead Civil Engineer
R. M. Kissinger, Project Civil Engineer
C. Fleming, Field Engineer

Brown & Root (B&R) Employees

W. Wright, Project Welding Engineer
S. Hauser, Field Engineering Superintendent
C. Osborn, Tool Crib Foreman

The NRC inspector also contacted other licensee and contractor employees during the course of the inspection.

Note: Prior to this inspection, separate and independent investigative interviews were conducted by members of the Office of Investigation Field Office, Region IV (see attached Report A4-83-005, dated May 20, 1983).

B. Alleged Improper Construction Practices

The NRC inspector, through an interpretative review of Mr. R. L. Messerly's affidavit, dated February 3, 1983, and his statements during his interview, April 14, 1983, determined that there were seven specifically alleged matters that required a detailed inspection effort to assess their technical merit and/or their potential impact on safety-related systems, component, and structures.

The seven areas of NRC concern which Mr. Messerly alleged to have occurred are summarized as follows:

1. That B&R employees drilled undocumented and unauthorized holes that cut through reinforcing steel and that such drilling and cutting was done at the direction of supervisors. Mr. Messerly provided a copy of a personal diary which, he alleged, reflected undocumented and unauthorized drilling.

2. That one of the main steam lines in Unit 1 was moved using the polar crane, thereby placing the section of pipe line in an undesirable stressed condition.

3. That he had cut through concrete reinforcing steel as directed by work instructions that were not in accordance with the approved method of documentation.

4. That tubular hanger/support steel anchor bolt holes were enlarged with a burning torch which he said was unauthorized.

5. That (Richmond) anchor bolts were not perpendicular to concrete surface and, therefore, unacceptable.

6. That stainless steel pipe attachments were welded on piping without an inerting purge.

7. That NRC Form 3, "Notice to Employees" was not posted on three main bulletin boards.

C. Inspection Findings

Allegation 1

1. Discussion

Mr. Messerly stated that during his assignment as foreman over the first crew responsible for drilling through concrete and reinforcing steel (rebar) during installation of cable tray and pipe hanger supports, he was ordered by his supervisors to loan out drill bits and/or drill undocumented and unauthorized holes through rebar.

To further support his allegation, Mr. Messerly named B&R employees responsible for the alleged improprieties and those who could substantiate his allegations. 1/

In addition, Mr. Messerly provided the NRC staff a copy of his personal daily diary in which he logged drilling of holes for electric cable trays/hanger supports and rebar cutting details. He stated that this diary also identified holes he drilled, in or through, rebar and concrete without having documentation and authorization.

2. Chronological Findings 1978-1982

In order to determine the magnitude of implication and the resulting findings of Mr. Messerly's allegations.

1/ See attached "Assistance to Inspection Report," Report A4-83-005, dated May 20, 1983

The NRC inspector reconstructed, through the use of record archives and interviews with site personnel, the onsite construction activities and QA/QC program being implemented in the specific area of concern during the period 1978-1979.

3. Rebar Cutting Capabilities

The NRC inspector found from B&R purchases that during 1975 through 1982, the type of onsite equipment (drills) capable of cutting through rebar and available to craft personnel were restricted almost exclusively to the (water cooled) type diamond core drill bits (rebar eater) and associated drill motors, purchased from Drillco Equipment Company, Inc., (Drillco) Miami, Florida. The Drillco water cooled diamond core drill bits purchased are hollow, tubular in shape, varying in sizes from 1/2" to 16" in diameter and from 2" to 14" in length. The drilling end has a series of carbide rectangular shaped teeth impregnated with industrial diamond dust. When worn, or dull, the bits can be reconditioned and reused.

The NRC inspector found that the initial core drilling requirements (1975 to 1978) were under the control of the concrete department. Drilling was restricted to investigative type core drilling (identifing concrete honeycomb, voids or cold joints) in the base mats (NRC Inspection Report 445/446/76-04 dated April 20, 1976).

In late 1977, record archives contain copies of the original "Core Drilling Procedure," MCP-13, dated September 27, 1977, and issued for implementation April 21, 1978. The procedure was developed for core drilling through walls and slabs for the purpose of installing pipe sleeves, conduits, instrumentation sleeves, etc. Penetrations which were shown on drawings or included in design documents prior to concrete placement and inadvertently omitted, or penetrations which were added by the architect engineer (A/E) but for which the installation information was not available to the field prior to concrete placement were covered by this procedure. The procedure was applicable for all core drilling required in the plant. Core drilling was assigned to the millwright department.

The procedure and its controlling document, "Core Drill Request Form," requires delineation of exact location, size and rebar location, and contains review and approval signoffs. This procedure continues to be the principal core drilling procedure (Revision 3, dated December 2, 1981). However, current policy (as determined by the cognizant project civil engineer and reflected in documented records) is the assignment of core drilling of 2-1/2" diameter and larger to the millwright department and 1/2" to 2" diameter core drilling to the steel fabrication department drilling crew. The NRC inspector also noted that "Core Drilling Request Forms" do not imply rebar cutting; in fact, rebar cutting has for the most part, been avoided where possible as stated by the project civil engineer during discussions with engineering personnel. This fact was observed by the NRC

inspector during his review of randomly selected "Core Drilling Request Forms" (1978 through 1982).

Construction records indicate that electrical cable tray, conduit hangers, and pipe hanger support installations were initially started in late 1978. This coincides with the formation of the steel fabrication department pipe hanger crew(s), special drilling crew (headed up by Mr. Messerly , and the requisition of the water cooled diamond core drills and motors by the steel fabrication department (of which Mr. Messerly was a member) on September 6, 1978. A record search indicated a Design Change/Design Deviation Authorization 2470, dated September 5, 1978, authorizing rebar cutting for Cable Tray Support No. 597. This was an initial rebar cut made on September 9, 1978, and identified by Mr. Messerly in his personal handwritten diary (see paragraph 6).

The primary anchor and fasteners utilized at CPSES for the attachment of cable tray supports, conduit supports, pipe hanger supports, etc., to concrete surfaces are the "Hilti" drilled-in concrete expansion anchor and "Richmond" screw anchor. The Richmond screw anchor is positioned prior to concrete placement, whereas the Hilti requires concrete drilling and placement at the time of component installation (a licensee representative stated, that based on purchase orders, over one million Hilti bolts 1/2" to 1-1/4" in diameter, have been installed to date). Drilled-in expansion bolts are bolts having expansion wedges so arranged that, when placed in a drilled hole and the nut tightened, the wedges are expanded and the bolt is securely anchored.

The most predominant means of drilling holes into concrete for expansion bolts is the use of Hilti power drills, using Hilti carbide masonry bits of the same nominal size as the bolt. This form of drilling does not have the capability to drill through rebar.

In limited access areas where the Hilti power drills cannot be used, a flexible Drillco drive drill with drill press/vacuum base and Drillco water cooled carbide/diamond bits are used. This form of drilling has the capability of drilling through rebar and was restricted to the steel fabrication department special drilling crew (headed by Mr. Messerly from September 1978 through October 1979).

For these two methods of drilling, no authorization is required for Hilti bolt installations (other than an approved hanger support installation "traveler" with its accompanying location drawings). A design change authorization is only required if relocation is beyond the drawing tolerance limits, or if rebar is encountered and requires cutting. Construction quality programs of this nature rely heavily on each individuals personnal integrity to adhere to prescribed procedure requirements.

A research of purchase orders for 1978 through 1979 conducted by the NRC inspector, indicated that only seven (Drillco) power drives that facilitate water cooling capability were purchased during that time frame. Two were issued to the millwright department and five were issued to the steel fabrication department (under the control of Mr. Messerly . Mr. Messerly requisitioned (from the B&R warehouse) three drill machines, with water cooling splash guards, and one flex shaft unit on September 6, 1978. An additional flex shaft unit was requisitioned by Mr. Messerly on October 6, 1978.

In discussing the method of drilling with the Drillco water cooled diamond bits with cognizant site personnel, the NRC inspector was informed that when drilling with the diamond core bits, water cooling is mandatory. The water provides two primary functions: it removes drilling debris (concrete/steel) as drilling progresses, otherwise the drill bit would bind; secondly and most important, without water cooling, the drill bit will readily "burn up," particularly when attempting to cut through rebar steel. In addition, a drilling foreman stated that, drilling equipment is heavy and bulky and drilling set-up time (mounting to walls or ceiling) generally takes half an hour to one hour. When drilling, the water cooling creates a concrete/water mist deluge requiring crew members (normally two) to wear rain type outer protective clothing.

4. Diamond Core Drill Bit Control

In verifying the purchase and control of the diamond core drill bits, the NRC inspector reviewed 21 B&R purchase orders awarded to Drillco dating from January 13, 1978 through February 13, 1980.

The NRC inspector found that of the total 21 purchase orders, 10 requisitions were initiated by the steel fabrication department general superintendent, representing 293 core drill bit purchases, and 11 purchase orders were intiated by millwright supervisory personnel representing 122 core drill bit purchases.

In reviewing the accompanying warehouse requisitions contained in each of the purchase order files, the NRC inspector noted that in the case of the steel fabrication department orders, all requisitions bore the signatures of Mr. Messerly or his department personnel. Correspondingly all equipment ordered by the millwrights was issued to and signed for by a cognizant millwright foreman.

The NRC inspector conducted an inspection at each of the respective department tool crib areas (mi rights and steel fabrication). The millwrights maintain a tool r· area enclosed by heavy gauge wire screen and a locked counter access. The tool crib attendant maintained a clip board type log specifically for the control of Drillco diamond core bits. The log icentified the individual, along with checkout and return dates. Entries in this log date back to October 16, 1978.

The steel fabrication department maintains a small separate building where the hanger installation crew controls the drilling equipment and bits. The NRC inspector observed that the Drillco diamond core bits were separately stored in a large wooden cabinet with an accompanying combination lock. The method of control over drills and bits was discussed with the cognizant foreman. The foreman stated that he had been in charge of diamond core bits and the fabrication department drilling crew since April of 1982. He stated that he did not cut any rebar without an approved "request for rebar cutting" form, which he further demonstrated by utilizing an inprocess form dated June 14, 1983, No. 135. The NRC inspector determined that this was in accordance with the prescribed procedure, CC-P-47, "Request for Rebar Cutting," dated June 17, 1981.

In interviewing former supervisors, foremen, and members of diamond core drilling crews 1/, all interviewees stated that the present method of controlling diamond bits has been in effect since the initial purchase of Drillco bits; i.e., only cognizant supervisors, foremen, or drill crew members have access to the diamond bits (those interviewed included five former members of Mr. Messerly's drill crew).

5. Procedure Reviews and Procedure Implementation

During the inspection, the NRC inspector reviewed B&R procedures and procedural implementation applicable to concrete core drilling and drilling requirements for Hilti bolt installations.

Included in the review were the original versions of issued procedures from archive files that were applicable during 1978 and 1979.

Applicable procedures reviewed included the following:

- B&R Procedure 35-1195-CEI-20, "Installation of 'Hilti' Drilled-In Bolts," dated May 31, 1978;

- B&R Procedure 35-1195-CEI-20, "Installation of 'Hilti' Drilled-in Bolts," Revision 8, dated January 26, 1983;

- TUSI Procedure QI-QP-11.3-2, "Cable Tray and Conduit Hanger Inspection," dated June 3, 1978;

- B&R Procedure 35-1195-MCP-13, "Core Drilling," dated September 27, 1977;

- B&R Procedure 35-1195-MCP-13, "Core Drilling," Revision 1, dated April 21, 1978;

- TUSI Procedure CP-QP-11.2, "Surveillance and Inspection of Concrete Anchor Bolt Installation," dated December 10, 1979;

- B&R Procedure 35-1195-CCP-47, "Request for Rebar Cutting," dated June 17, 1981;

- TUSI Procedure QI-QP-11.2-1, "Concrete Anchor Bolt Installation," dated December 13, 1979; and

- G&H Specification 2323-SS-30, "Structural Embedments."

The principal construction procedure applicable for Hilti bolt installation was B&R Procedure 35-1195-CEI-20, originally issued May 31, 1978. Section 3.2.1 states, "Expansion bolt holes shall not be drilled into concrete reinforcing steel unless approved by the Gibbs & Hill, resident engineer or his representative." This requirement has been retained in all subsequent (eight) revisions to the procedure. The statement is currently found in Section 3.1.2.1 of Revision 8, dated January 26, 1983.

In discussing the method of "engineering approval" established in the period 1978-1979 with the cognizant project civil engineer, the NRC inspector was informed that an "Interference Task Force" was established in September of 1978, composed of three TUSI project civil engineers who coordinated any design changes or rebar cutting with the cognizant onsite, A/E Civil Design Engineer. Where interference between the expansion bolt and reinforcment was encountered, the bolt location was generally adjusted within the tolerances allowed by the design drawings, otherwise a design change/design deviation authorization (DC/DDA), design change authorization (DCA), or a component modification change (CMC) was initiated and issued. The various forms of design change documents have subsequently been reduced to the DCA and CMC forms of design change approval. Where interference with reinforcing steel cannot be avoided and the cutting of rebar is required, the approval authorization is initiated by the A/E site project civil engineer who evaluates all requests for cutting rebar. The criteria for such evaluation is based on design parameters determined by the A/E. Final design approval for any rebar cutting remains the responsibility of the A/E's New York office.

The A/E site project civil engineer maintains a CMC DCA issuing log, for rebar cutting. The earliest entry noted by the NRC inspector is CMC 0188, dated October 3, 1978. The information on the DCA or CMC; i.e., number of rebar cut, size and location is transferred to a separate set of building structural drawings especially established for showing "as-built" rebar cutting entitled "rebar drawings cutting criteria." In interviews with the cognizant A/E site project civil engineer assigned during 1978-1979 1/, the NRC investigators were informed that although requests to cut rebar came from a number of different B&R craft personnel, he, almost always, gave the approving CMC to Mr. Messerly, since his crew did the rebar cutting. He further stated that he had no knowledge of rebar cutting without

engineering approval. The NRC inspector subsequently conducted a detailed review and documentation verification of the above procedures.

5. Messerly's Diary (Log)

During the interview on April 14, 1983, Mr. Messerly provided the NRC investigators with a copy of his personal diary log entitled, "Start of New Crew and New Operation Rebar Cutting Detail." The diary consists of 24 handwritten pages of columniation entries on standard 8-1/2" x 11" paper dating from September 7, 1978, through October 17, 1979. Five columns delineating print numbers (cable tray/hanger support numbers); building location; rebar cut; day and date; and position (floor, wall, flex, DC/DDA, DCA, or CMC number) were recorded by Mr. Messerly. In addition, various notes regarding work activities are interspersed thoughout the 24 pages.

During a detailed review of the diary, the NRC inspector observed that (barring errors due to legibility) Mr. Messerly recorded drilling a total of 2976 holes associated with 415 hanger/supports. Of the 2976 holes drilled, 280 rebars were cut. This means that rebar requiring cutting was encountered in less than 10% of the holes drilled. All rebar cuts, as noted by Mr. Messerly, were identified by either a DC/DDA, DCA, or a CMC. A total of 84 such authorizations were identified.

Twenty-one of these rebar cuts were related to nonsafety-related buildings; therefore, the NRC inspector did not review these particular authorizations. In addition, of the 2976 holes drilled, 247 were identified by Mr. Messerly as being in the turbine building.

Of the remaining 63 documents authorizing rebar cutting, the NRC inspector made a random selection of 32 authorizations for a comparative verification against Mr. Messerly's diary. The NRC inspector verified 132 rebar cuts identified in the 32 authorizations. In all cases, the location, size, and number of rebar were identified on the DCA or CMC. In addition, all 132 cut rebars were traced to, and identified on, the specific building structural drawings, "rebar drawings cutting criteria," with the corresponding authorizing document number.

There was no rebar cutting, as identified by Mr. Messerly in his diary, that does not have a corresponding authorization number. It was also observed by the NRC inspector, that a handwritten note in the diary (assumed to be written by Mr. Messerly states "Ordered to drill by (name withheld) - floor S.W.I." Adjacent to the date July 23, 1979, and Hanger/Support Number SW-2-035-004-J03R. Under the rebar cutting column Mr. Messerly noted, "None ?". Mr. Messerly also noted that eight holes were drilled. During

an investigation of this particular support (SW-2-035-004-J03R) in the service water intake structure (S.W.I.), the NRC inspector found that the support was deleted on July 30, 1980.

The original bolt holes were subsequently grouted and concrete surfaces painted. It is assumed that, by indicating a question mark after his notation, Mr. Messerly was not a witness to the actual drilling of the specific holes drilled by his crew members, and since seven persons formerly associated with drilling operations have stated 1/ that they have no knowledge of unauthorized rebar cutting. The NRC inspector did not pursue this matter further.

It was also observed by the NRC inspector that, during a verification review of the 32 DCA's and CMC's identified by the Mr. Messerly's diary, CMC 3307 identified 48 rebar cuts in the service water tunnel alone. This was also mentioned by Mr. Messerly during his interview. All 48 rebar cuts were traced to the design change authorization documents.

Although Mr. Messerly's diary consistently identified the percentage of rebar cut, the established G&H design criteria considers any reduction in individual bars a 100% loss of the bar.

The NRC inspector found no unauthorized rebar cutting identified by Mr. Messerly in his handwritten diary.

7. Conculsion - Allegation 1

Mr. Messerly s allegation that B&R employees drilled undocumented and unauthorized holes that cut through reinforcing steel could not be substantiated for the following reasons:

a. Mr. Messerly's statements lack sufficient specificity as to who he "loaned" the water cooled diamond drill bits to cut rebar, or who specifically ordered him to cut rebar when and where.

   Former supervisors deny ordering Mr. Messerly to "loan" out drills or cut unauthorized rebar, nor did any of the five former crew members support this contention.

b. In the event an unauthorized person did use a water cooled diamond bit, it is highly unlikely that cutting of rebar would be accomplished without the accompanying water cooling drive equipment, or if a drill bit was "loaned" for drilling concrete only, it is conceivable that drilling would be successful without water cooling, but not necessarily resulting in defective workmanship.

c. Although Mr. Messerly implied that his personal diary contained identification of unauthorized and undocument rebar cutting, unless shrouded by omission or misinformation, the NRC inspector could not identify a rebar cut that was not authorized by DC/DDA, DCA, or CMC.

d. Although the method of diamond bit accountability/control exhibits a weakness, the need for relying on individual personal integrity would not be diminished. The inspection findings did not, nor do not, suggest indiscriminate cutting of rebar was done. Documented records exhibit a purposeful avoidance of rebar interference. Furthermore, the Messerly diary demonstrates that less than 10% of the recorded total holes drilled by his crew encounted rebar that required cutting.

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

Allegation 2

1. Discussion

Mr. Messerly stated in his affidavit of February 3, 1983, and in his interview on April 14, 1983, that he had witnessed the use of the Unit 1 reactor containment building polar crane by a pipefitter supervisor in relocating a main steam line in a manner that put undue tension on the pipe. In addition, Mr. Messerly provided the names of persons involved with the movement of the steam line 1/.

2. Conclusion - Allegation 2

Although B&R personnel named by Mr. Messerly contradicted his allegation 1/, the NRC inspector conducted an independent review of the onsite documented records regarding this matter.

It was observed by the NRC inspector that the specific 32-inch steam line mentioned by Mr. Messerly is, Loop 1, Line number MS-1-RB-001-1302-2, and the reactor building polar crane was utilized in a vertical lift to assist repositioning a section of this permanent piping. The licensee has maintained a documented engineering record of the specific line movement. The NRC inspector noted that the movement of the line was necessary in order that a large section of temporary piping (attached to the steam generator feedwater nozzle and previously used for water flushing) be removed and to relocate the permanent section of the main steam line that had "sagged" due to the weight of the temporarly installed flushing pipe. The record folder contains meeting notes (memorandum) which reflect discussions with Westinghouse (NSS Supplier) and the cognizant A/E representatives prior to the work activity, in addition to establishing engineering limitations and acceptability. The line was moved on January 16, 1982 under the

supervision of the field mechanical engineering group, and was witnessed by an engineering representative who observed the installation and use of the dynamometer (to register crane lifting loads) throughout the operation. The lift connections and applied forces were recorded and retained in the file. The lifting points were consistent with the hanger locations to simulate the permanent support system. The as-built configuration was analyzed for stress and the acceptability of the line confirmed. In addition, the recent completion of the "Reactor Hot Functional Test" did not reveal any undue stress conditions. This allegation cannot be substantiated.

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

Allegation 3

1. Discussion

During Mr. Messerly's interview on April 14, 1983, Mr. Messerly (in referencing his personal diary) stated that he initially started drilling rebar based on the instructions of three-part memos, DC/DDAS, and subsequently the CMC. Although Mr. Messerly did not allege that the CMC was an improper document, he did imply that the DC/DDA and the three-part memo were not the right documentation.

2. Conclusion - Allegation 3

During the NRC inspector's review of Mr. Messerly's personal diary (paragraph 6), it was observed by the inspector that the first four holes (rebar cuts) he drilled on September 7 and 8, 1978, for cable tray hangers 596, 642, and 643, Mr. Messerly made the notation "RFIC". In researching the archive files, the NRC inspector found the original Request for Information or Clarification (RFIC) documents, Request Nos. EH-14 and EH-15, dated August 29, 1978. Although the instructions authorizing rebar cutting contained in the RFIC were correct and authorized by the cognizant A/E design engineer, the RFIC document was not the "approved" method of authorizing a design change. The NRC inspector noted that this documentation error was corrected by CMC No. 00766 issued on October 16, 1978. The original document, the RFIC contained a note to this effect. On September 9, 1978, Mr. Messerly's diary contains a reference to DC/DDA No. 2489 for two rebar cuts for hanger No. 597. In researching this particular DC/DDA, the inspector found that DC/DDA No. 2489 was not related to hanger No. 597. The NRC inspector found that DC/DDA No. 2470 correctly identified the rebar cutting authorization. The location and number of rebar cut was also traced to CMC No. 01146, dated September 20, 1978, and to the as-built building structrual drawings, "Rebar Drawings Cutting Criteria." This allegation by Mr. Messerly was substantiated; however, the original documentation error was identified a short time after its occurrence and immediately corrected and did not impact on plant safety.

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

Allegation 4

1. Discussion

During Mr. Messerly's interview on April 14, 1983, and as stated in his February 3, 1983 affidavit, Mr. Messerly indicated that anchor bolt holes in tubular steel hanger supports were enlarged with a burning torch in order to compensate for the angularity of the previously installed (Richmond) anchor bolts, rather than redrill the holes.

2. Conclusion - Allegation 4

The results of the interviews of eight B&R employees, whose names were provided by Mr. Messerly and alleged to have knowledge concerning the improper use of cutting torches on hanger material, is contained in the attached "Assistance to Inspection Report." 1/ Two individuals stated that they recall an instance during a redesign modification of a hanger where it was discovered that holes had been enlarged by a burning torch, therefore, that portion of the hanger was scrapped.

During the onsite followup inspection concerning this matter, the NRC inspector discussed the use of cutting torches with the licensee's welding engineers and fabrication department engineers. The NRC inspector was informed that the use of cutting torches is not prohibited, provided it is done in accordance with prescribed B&R procedures and/or ASME, Section III, Subsection 4211 (thermal cutting). In the case of tubular hanger installations, the preferred method of correction for hole misalignment is to drill offset hole(s). This has been done on many occasions via the design change CMC document. The cognizant project engineer, responsible for approving and issuing CMC's for hanger modifications, stated that he knew of no CMC that involved authorization of hole enlargement or hole relocation on tubular hanger supports utilizing thermal cutting; however, thermal cutting has been permitted as necessary on other types of carbon steel supports, base plates, etc.

The NRC inspector conducted a walk-through of the containment building to examine accessible installed tubular hangers, specifically in the plant areas mentioned by Mr. Messerly during his interview. The inspector examined approximately 60 hangers at the 905' and 860' elevations in the containment building. Although limited in visual accessibility to each 1" or 1-1/4" drilled hole in each section of the tubular hangers, the NRC inspector did not find any hole that was enlarged by a cutting torch.

In addition, the NRC inspector discussed the subject of thermal cutting with the cognizant QC supervising inspector who was involved with inspections of tubular hanger installation during 1980-1982. The QC supervisor stated, that neither he nor any inspector discovered

an installed tubular hanger hole having been enlarged by a cutting torch.

Based on the lack of specificity by Mr. Messerly, the lack of corroborative testimony by Messerly's witnesses, interviews by the NRC inspector with cognizant site personnel, and the (limited) examinations of installed hangers, this allegation could not be substantiated.

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

Allegation 5

1. Discussion

During the interview on April 14, 1983, Mr. Messerly stated that Richmond Insert anchor bolts installed between elevations 905' and 860' in the reactor containment building have not been installed perpendicular to the concrete surfaces and, therefore, are unacceptable. In addition, Mr. Messerly stated, ". . . whatever angle it is, we would drill it at that angle so that it would come through the tube (i.e., tubular steel) and when it comes out the other side of the tube, it comes out as close to center as we could get it."

Mr. Messerly also stated, "Just go out there and pull any . . . studded rod out of there, pull three of them and two of them is [sic] crooked."

2. Conclusion - Allegation 5

During the NRC inspector's onsite follow up of this matter, the inspector found that the L&R Procedure CP-CPM 9.10, "Fabrication of ASME-Related Component Supports," (original issue 12/28/78) is the primary construction installation procedure to be implemented and followed by the hanger installation crews. The "General Fabrication and Installation Requirements," Section 3.3.1.2 "Installation Tolerances," states in part,

"Field Fit Tolerances

"The tolerances discussed above shall be maintained for support fabrication activities. However, if during the installation, the support won't fit, the members may be "field fit" provided the piping and elevation tolerances shown below have been maintained. All other tolerances regarding axial location, alignment, and base plate attachments must be adhered to unless otherwise noted on the drawing."

In addition, Section 3.3.2, states in part,

> ". . . Surfaces of bolted parts in contact with the bolt or nut shall have a slope of no more than 1:20 with respect to a plane normal to the bolt axis. Where the surface of a high strength bolted part has a slope or more than 1:20, a beveled washer shall be used to compensate for the lack of parallelism."

During discussions with the cognizant design engineers concerning the specific installation requirements relative to the limiting perpendicular angle of the anchor bolts (Richmond Inserts), the NRC inspector was informed that the limiting perpendicular angle of anchor bolts (Richmond Inserts) to the concrete surface is, aside from the requirements of Section 3.3.2, is handled on a case-by-case basis. No enlargement of the existing predrilled holes in the tubular steel is permitted without prior approval; however, numerous CMC's have been issued wherein offset holes have been authorized. The approval is generally accompanied by the requirement that the large square bolt washer be welded in place using a 1/4" fillet on 2 sides. The cognizant engineer further stated that the requirement above only applies to safety-related supports (ASME III, Subsection NF, Classes 1, 2, and 3 component supports). Enlargement of the predrilled holes in the tubular steel for nonsafety supports is permitted without prior engineering approval.

Since Mr. Messerly specifically referred to the 860' and 905' elevations in the reactor containment building in his testimony, it was assumed by the NRC inspector that his specific concern was in reference to the permitted angularity of the safety-related Richmond Insert anchor bolts. Mr. Messerly was apparently of the opinion that the anchor bolt should be precisely perpendicular to the concrete surface, which appears to be a misunderstanding on his part of the installation specification. Furthermore, Mr. Messerly's testimony reflected his awareness and knowledge of the procedural requirements, therefore, it must be assumed that Mr. Messerly did not ignore procedural requirements and did not indiscriminately enlarge predrilled tubular steel holes in safety-related supports. Further, that any offset or enlargement done by Mr. Messerly had prior engineering approval as required. As noted in Allegation 4, paragraph 2, the NRC inspector conducted a limited visual examination of approximately 60 hanger supports at the 905' and 860' elevations in the containment building. During the examination, the NRC inspector found no hole enlargements or anchor bolt angles (parallelism of bolt nut surface to washer surface) that appeared to violate the above installation specifications. It is concluded by the NRC inspector that this specific allegation appears to be more of a design concern by Mr. Messerly, than an improper installation construction practice having been implemented by him.

The need for the Richmond Insert anchor bolt to be precisely perpendicular to the concrete surface is not required according to the documented criteria established by the licensee, therefore, this concern alleged by Mr. Messerly is not substantiated.

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

Allegation 6

1. Discussion

During Mr. Messerly's interview on April 14, 1983, Mr. Messerly stated, "There was a welding foreman out there that done [sic] a lot of welding illegally without documentation, such as lugs on pipes without purges." In addition, Mr. Messerly identified three individuals who would have knowledge of attachments (lugs) being welded on pipe without an inerting purge 1/, with specific reference to the 832' elevation in the reactor containment building.

2. Conclusion - Allegation 6

As noted in attachment 1/, two individuals identified by Mr. Messerly were interviewed concerning their alleged knowledge of lugs improperly welded on to stainless steel pipe without purging the pipe when required. Both interviewees denied any knowledge of improper welding activities.

During this inspection, the NRC inspector conducted an onsite follow up review of this matter.

The licensee's pipe welding procedures had been established prior to the initial piping installation early in the construction phase. The procedures and implementation activities had been inspected and documented on numerous occasions throughout that phase of construction by the NRC senior resident inspector and independently by NRC regional staff personnel. Therefore, during this inspection, the NRC inspector limited the review to pipe welding purge requirement established by the licensee.

The NRC inspector observed that the primary welding procedures associated with safety-related piping are B&R CPM-6.9, Appendix D, "Welding and Related Processes," and B&R Inspection Procedure QI-QAP-11.1-26, "ASME Pipe Fabrication and Installation Inspection." Paragraph 3.5 of this procedure, states, in part,

> "Purging shall be maintained for welding of attachments to stainless steel piping having a wall thickness of 1/4 inch or less for field welds only. This may be waived on a case-by-case basis by the PWE and Engineering. This waiver shall be documented on the applicable WDC."

In discussing this matter with the cognizant project welding engineers, the NRC inspector was informed that when a welding purge is required for attachment welds, the requirement would be noted on the weld data card (WDC) and a "Hold Point" established for verification by a QC inspector. However, in instances where the purge is waived, an interoffice memo waiving the purge is attached to the WDC. The interoffice memo is controlled by a chronological numbering system and filed within the permanent record files. It was further pointed out by the B&R welding engineers that the majority of stainless steel piping at the 832' elevation have pipe wall thickness in excess of the limiting 1/4" wall, therefore, an inerting purge would not be required for weld of attachment lugs.

Based on the fact that prior NRC inspections have not identified a concern in this area, that Mr. Messerly's allegation lacks specificity (i.e., safety-related piping, pipe line numbers, size, location, etc.), that the majority of stainless steel piping at the 832' elevation exceeds 1/4" wall thickness, and that persons named by Mr. Messerly did not support the allegation, this allegation was not substantiated.

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

Allegation 7

1. Discussion

It was observed by the NRC inspector in Mr. Messerly's affidavit of February 3, 1983, and during his interview on April 14, 1983, he stated he did not remember seeing the posting of a copy of NRC Form 3, "Notice to Employees," on three main onsite bulletin boards.

2. Conclusion - Allegation 7

The Code of Federal Regulations, Part 50 (10 CFR 50), was revised by 47 FR 30452 to add 10 CFR 50.7, "Employee Protection." The change was published July 14, 1982, and had an effective date of October 12, 1982. An important element of the change is that of a requirement to post NRC Form 3 at locations where the form can be readily viewed by employees on their way to or from their place of work.

During a prior review of this matter by the NRC senior resident inspector (SRI) (see NRC Inspection Report 50-445/83-03; 50-446/83-01, dated March 28, 1983), the NRC Form 3 was observed by the SRI to be posted in early January 1983. However, the precise date (between October through January) of the posting of NRC

Form 3 could not be established. S&R personnel records indicate that Mr. Messerly was terminated on December 6, 1982.

The allegation cannot be refuted nor substantiated. Furthermore, the matter lacks any technical merit relative to an impact on the safety of the plant.

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

SUPPLEMENTAL INSPECTION

September 9 - 22, 1983

1. Discussion

As noted in the attached assistance to NRC inspection report, "Supplemental," dated September 7, 1983 2/, during the course of an unrelated investigation, information was received that a former B&R millwright had drilled holes through rebar without the required engineering authorization.

During the period September 9 - 22, 1983, the NRC inspector conducted an onsite follow up on this matter.

From the information provided by the interviewees, the NRC inspector identified the specific "Trolley Tracks" 2/, as the drum and spent filter handling equipment, liner transfer trolley process aisle rails, located on the 810'-6" floor level, in room 252, of the fuel handling building.

The system is currently in the preoperational testing phase; however, this system is not a safety-related system. In reviewing the construction documentation records regarding the installation of the rail assemblies, the NRC inspector found that the rail base plates, rail clips, drilled Hilti anchor bolts, and rails were installed per drawing, "Anchoring Details for Radwaste Solidification System," Figure 39, Sheet 5 of 5, and by direction of Design Change Authorization (DCA) 7041, Revisions 4, 8, and 9, dated October 22, 1980, October 28, 1982, and November 11, 1982, respectively. It was observed by the NRC inspector that Drawing Figure 39, Sheet 5 of 5, contained the following pertinent notes, "2: Expansion bolts and base plate may be moved in east-west direction to avoid interference with rebar running in north-south direction." and, "3: For rebar running in east-west direction, holes may be drilled through the uppermost #18 bar @ only one rail location and expansion bolts shall be installed through the hole (it is assumed that bar interference shall occur at any one rail only)."

2/ See attached assistance to inspection report "Supplemental," dated September 7, 1983, Report No. A4-83-005.

In addition, Revision 8, of DCA 7041 directed the addition of extending the length of the rails from the original 24'-3" long to 27'-6" (3'-3" section added to east end); also, Revision 9 permitted the modification of Hilti bolts (shortening) to avoid cutting any additional rebar.

The NRC inspector met with the superintendent of the millwright department and interviewed millwright craft personnel that were directly involved in installation of the rail assemblies. During the interviews, the NRC inspector found that the rail assemblies were installed during two different time periods. Although actual dates were not established, it appears that the initial 24'-3" rail sections were installed in late 1982 and the 3'-3" extension sections were installed early in 1983. The individual interviewed on September 1, 1983 2/, stated that he was not aware of the 3'-3" extension of the rails; therefore, his reference to his work activities involved only the installation of the initial 24'-3" rail sections.

In addition, it has been established that, aside from the core drilling foreman, five millwrights and one millwright foreman were directly involved in the installation of the base plates and rail assemblies. (Three of the millwrights and the millwright foreman were individuals also interviewed.)

2. Inspection Findings

As a result of the onsite followup inspection, records review, and interviews with personnel, the inspection findings are as follows:

a. As stated by the millwright interviewed on September 1, 1983 2/, and acknowledged by other millwrights, only the east-west, #18 rebar, running parallel with the east-west rail, was drilled through to accommodate the 1/2" Hilti bolts which secure the rail base plates to the 810'-6" floor. This rebar cutting was authorized per Note 3, Drawing Figure 39, Sheet 5 of 5, DCA 7041.

b. The alleger stated that the 3'-3" extension rails were installed in accordance with the DCA 7041, and that rebar was drilled through for the south rail Hilti bolts by the steel fabrication department drilling crew and that no unauthorized rebar was cut during installation of the 3'-3" rail extension.

c. The millwright foreman stated that during installation of the 24'-3" rail base plates, the steel fabrication department drilling crew foreman arrived with the "rebar eater" drilling equipment by himself, therefore, he assigned one of the millwrights to assist the drilling crew foreman in drilling the holes in which rebar required being cut. He further stated that only rebar that was authorized to be cut per the DCA was cut.

d. During the inspection, two of the millwrights interviewed stated that north-south rebar was encountered during drilling Hilti bolt holes for base plates for the north rail and that since cutting of the particular rebar was not permitted by the DCA, the Hilti bolt was modified (shortened) as authorized by Revision 9 of DCA 7041.

The NRC inspector had a TUGCO licensee representative locate and verify the modification of the specific Hilti bolt. The bolt was located at the west end of the north rail and further supports the millwright's contention that no unauthorized rebar was cut.

e. In discussing the use of the core drilling equipment with the craft supervisory personnel, the NRC inspector was informed that there is no hard set policy as to who can or who cannot use the core drilling equipment as long as the equipment is used properly and the drilling being done is authorized and directed by craft foreman or supervisory personnel. As with the millwright interviewed September 1, 1983 2/, wherein he stated that when the core drilling foreman did not show up, he (the millwright) completed drilling the remaining (approximately 10) 1/2" diameter holes for the south rail base plate Hilti bolts.

f. The NRC inspector found no evidence to support the allegation that unauthorized cutting of rebar was done during installation of the "Trolley Tracks" for the drum and spent filter handling equipment.

3. Results

The allegation that unauthorized cutting of rebar was done during installation of the drum and spent filter handling equipment process aisle rails is considered to be unsubstantiated.

NUCLEAR REGULATORY COMMISSION

OFFICE OF INVESTIGATIONS FIELD OFFICE, REGION IV

611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

ASSISTANCE TO INSPECTION REPORT

May 20, 1983

BJECT: COMANCHE PEAK
ALLEGED IMPROPER CONSTRUCTION PRACTICES

PORT NUMBER: A4-83-005

On February 3, 1983, [redacted] provided an affidavit to the Citizens Association for Sound Energy (CASE), an intervenor that included three allegations regarding improper construction practices by Brown & Root personnel at the Comanche Peak Steam Electric Station. [redacted] alleged the following:

a. That Brown & Root employees drilled undocumented unauthorized holes through rebar, and such cutting of rebar was done at the direction of supervisors.

b. That the main steam line pipe in Unit I was moved using the polar crane, thereby placing the pipe under unsafe tension.

c. That a Brown & Root employee used a cutting torch on hanger material in violation of procedure.

On April 6, 1983, [redacted] was contacted by the reporting investigator, and a meeting was arranged with [redacted] for the following day. [redacted] contacted reporting investigator on April 7, 1983, and requested the meeting be changed to April 8, 1983.

On April 8, 1983, NRC OIFO Director R.K. HERR and the reporting investigator met [redacted] at a restaurant in Fort Worth, Texas. [redacted] was accompanied by [redacted] a CASE representative, and [redacted] husband. [redacted] wished to record the meeting; however, OIFO:RIV was not previously informed of her intended presence nor of her desire to record the interview. OIFO did not have a recorder, and in accordance with OI's policy, the meeting was rescheduled. On April 10, 1983, arrangements were made to use a room at the U. S. Attorney's office, Fort Worth, Texas, and for a court reporter to transcribe the interview of [redacted]

On April 14, 1983, [redacted] was interviewed at the U.S. Attorney's office with [redacted] present. [redacted] testimony was taken under oath, Attachment (1), and [redacted] made her own personal recording of the interview. In his testimony, [redacted] expanded in detail on his original allegations. [redacted] named Brown & Root employees responsible for the alleged improprieties and those who could substantiate his allegations. [redacted] also identified numerous employees by title, and agreed to later provide the corresponding names when he was able to refresh his memory with his personal records located at his residence. [redacted] also provided the NRC with a copy of a log. [redacted] explained that he maintained this log to document the cutting of rebar at Comanche Peak. (Note: [redacted] did not allege that all the entries in the log documented unauthorized cuts through rebar, but rather that some of the entries in the log may have been for holes drilled through rebar that may not have had the appropriate accompanying authorizations.) During this interview, [redacted] made a fourth allegation regarding instances of

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Brown & Root welders failing to purge stainless steel pipes during welding.

5. On April 21, 1983, a copy of the recorded testimony was mailed to [redacted] at his residence. On April 27, 1983, [redacted] was contacted by HERR, and acknowledged receipt of the transcript, but postponed giving the names of the Brown & Root employees he had identified by title in the transcript. [redacted] stated he had not as yet had an opportunity to read his entire testimony. On April 29, 1983, [redacted] was again contacted by HERR, but he again postponed providing the names, explaining he was very busy. On May 1, 1983, the reporting investigator telephoned [redacted] at his residence, and [redacted] provided twelve, additional names of Brown & Root employees at Comanche Peak he alleged had knowledge of unauthorized cuts through rebar.

6. On May 3, 1983, interviews were initiated at the Comanche Peak site addressing the four allegations. [redacted] identified 38 individuals allegedly responsible for, or having knowledge of, the allegations. Review of employment records determined that eighteen individuals were no longer employed at Comanche Peak.

7. Between May 3, 1983 and May 10, 1983, 19 Brown & Root employees and 1 Dravo Constructors Inc. employee (formerly employed by Gibbs & Hill) named by [redacted] were interviewed, and signed, sworn statements were taken from 19 of them. One Brown and Root employee interviewed left on vacation before a signed, sworn statement was obtained from him, and his testimony was recorded in the form of a Results of Interview. One Piping Design Serivces Inc. — engineer was identified by the reporting investigator as responsible for the movement of the main steam line. This engineer was interviewed, and executed a signed, sworn statement.

8. Nine individuals alleged to have knowledge of improper, unauthorized cutting of rebar were interviewed and provided sworn statements. These individuals denied having knowledge of rebar that was cut without proper authorization. A 10th individual responsible for issuing the Component Modification Cards (CMC), authorizing cuts through rebar, was interviewed and provided a signed, sworn statement denying knowledge of any procedural violations. Testimony identified instances where rebar was accidentally cut, but this testimony also established that in these instances, CMC's were obtained after the cuts were reported to the enigneers. There was no testimony received indicating that holes were drilled or rebar was cut without proper documentation, and no evidence was found to contradict the testimony of these individuals.

9. Three Brown & Root employees alleged to have knowledge concerning the use of the polar crane to move a portion of the main steam line in Unit 1 were interviewed and provided signed, sworn statements. A Piping Design Services Inc. engineer responsible for relocating the steam line, provided testimony of his evaluation and direction of the relocation of the line. The testimony taken from these four witnesses indicated that the relocation of the main steam line was done under the direction of engineers, and was accomplished to remove stress on the line and to return it to its designed location. No testimony was recieved to indicate that the line was "cold sprung" or installed under stress.

10. Eight Brown & Root employees alleged to have knowledge concerning the improper use of cutting torches on hanger material were interviewed. Two witnesses stated they remembered an instance during the redesign of a hanger in which a piece of tube steel was discovered to have had the bolt holes enlarged using a torch, which was a procedural violation. The testimony of the two witnesses indicated that this hanger was scrapped because of the procedural violation, and was replaced with new material. The other six had no knowledge of improper use of cutting torches or hangers.

11. Two Brown & Root employees were interviewed concerning their alleged knowledge of lugs improperly welded onto stainless steel pipe without purging the pipe. Both executed signed, sworn statements, and indicated that they did not know of any instances where welding was done on stainless steel pipe which required purging by procedure unless a "purge deletion" was received from the engineers.

12. All of the employees mentioned by [redacted] in his affidavit who were still employed or available for interview denied the allegations made by [redacted]. No evidence was uncovered during these inquiries which indicated deception on the part of the witnesses. The witnesses ranged from pipe fitter helpers to Brown & Root superintendents. A Piping Design Services Inc. engineer and the Bravo Constructors Inc. project manager also provided testimony which contradicted the allegations.

13. The signed, sworn statements are maintained in OIFO:RIV. No further inquiries are anticipated unless staff inspections identify additional pertinent information that would tend to substantiate the allegations or discredit the interviewees.

Attachments:

(1) Testimony of [redacted] - dated 4-14-83

(2) List of Interviewees

(3) List of terminated employees identified in Attachment (1)

REPORTED BY: H. Brooks Griffin

H. Brooks Griffin, Investigator
OI Field Office, Region IV

APPROVED BY: Richard K. Herr

Richard K. Herr, Director
OI Field Office, Region IV

cc: W. Ward, OI:DFO - w/attachments
C. Collins, RIV - w/attachments
E. Johnson, RIV - w/o attachments

NUCLEAR REGULATORY COMMISSION

OFFICE OF INVESTIGATIONS FIELD OFFICE REGION IV

611 RYAN PLAZA DRIVE SUITE 1000
ARLINGTON TEXAS 76011

ASSISTANCE TO INSPECTION REPORT
"SUPPLEMENTAL"

September 7, 1983

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION:
ALLEGED IMPROPER CONSTRUCTION PRACTICES

REPORT NUMBER: A4-83-005

1. During the course of an unrelated investigation, information was received, from an individual who requested confidentiality, that a former Brown & Root, Inc., millwright had drilled holes through rebar without the required engineering authorization.

2. On September 1, 1983, this millwright was interviewed and provided information wherein he stated he possibly drilled holes through rebar in a concrete floor without a Component Modification Card (CMC) or a Design Change Authorization (DCA). He explained that he drilled about 10 holes in January 1983 while installing 22 metal plates using a core drill. He said these metal plates were used to secure the trolley tracks located in the Fuel Handling Building as part of the Waste Monitor System. He stated that he and his crew used a core drill borrowed from the Core Drilling Crew. The millwright said that the holes made with the core drill were located on the southwest corner of the trolley tracks. He explained that the blueprints he used authorized the cutting of one piece of rebar on each hole, and he added that it is his belief the holes were drilled properly.

3. The Results of Interview with the former Brown & Root millwright is maintained in OI Field Office, Region IV.

Attachment (1) - Results of Interview with millwright, dated September 1, 1983.

REPORTED BY: H. Brooks Griffin
H. Brooks Griffin, Investigator
OI Field Office
Region IV

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APPROVED BY:
Richard L. Herr, Director
OI Field Office
Region IV

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cc: W. J. Ward, OI:DFO (w/attachment)
F. C. Saci, OI:DFO (w/attachment)
C. T. Collins, RIV (w/attachment)
T. F. Westerman, RIV (w/o attachment)

ATTACHMENT 2

IC 0535

INSPECTOR'S REPORT
Office of Inspection and Enforcement

REVIEWER: STOWART, RC / HUNNICUTT, D

INSPECTORS: R. C. STOWART

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)	REPORT NO.	SEQ	NEXT INSPEC. MO.
TUGCO	X I – INSERT	05000445	8327		
	M – MODIFY				
	D – DELETE				
	R – REPLACE				

PERIOD OF INVESTIGATION/INSPECTION

FROM MO.	DAY	YR.	TO MO.	DAY	YR.
5	10	83	09	28	83

INSPECTION PERFORMED BY

- X 1 – REGIONAL OFFICE STAFF
- 2 – RESIDENT INSPECTOR
- 3 – PERFORMANCE APPRAISAL TEAM
- OTHER

ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 "Manpower Planning—Weekly Manpower Reporting" for code)

REGION	DIVISION	BRANCH
4	C	A

REGIONAL ACTION (Check one box only)

- 1 – NRC FORM 591
- 2 – REGIONAL OFFICE LETTER

TYPE OF ACTIVITY CONDUCTED (Check one box only)

- X 02 – SAFETY
- 03 – INCIDENT
- 04 – ENFORCEMENT
- 05 – MGMT. AUDIT
- 06 – MGMT. VISIT
- 07 – SPECIAL
- 08 – VENDOR
- 09 – MAT. ACCT.
- 10 – PLANT SEC.
- 11 – INVENT. VER.
- 12 – SHIPMENT/EXPORT
- 13 – IMPORT
- 14 – INQUIRY
- 15 – INVESTIGATION

INSPECTION/INVESTIGATION FINDINGS (Check one box only)

- 1 – CLEAR
- 2 – VIOLATION
- 3 – DEVIATION
- 4 – VIOLATION & DEVIATION

TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS

ENFORCEMENT CONFERENCE HELD — 1 – YES

REPORT CONTAINS 2.790 INFORMATION — 1 – YES

LETTER OF REPORT TRANSMITTAL DATE

NRC FORM 591 OR REG LETTER ISSUED: 09 29 83

REPORT SENT TO HQ FOR ACTION

MODULE INFORMATION

PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEQ	PRIORITY	DIRECT INSPECTION EFFORT HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL
0	99	014		A		128						
				B								
				C								
				D								

E SEQUENCE IF ...

ENCLOSURE 2

SAFETY EVALUATION REPORT

COMANCHE PEAK STEAM ELECTRIC STATION

CONTAINMENT POLAR CRANE TESTING

In a letter dated November 21, 1983, the applicant for Comanche Peak provided information to show compliance with the guidance of NUREG-0554, "Single Failure Proof Cranes for Nuclear Power Plants" relative to the preoperational testing of the containment polar crane. For single failure proof cranes, compliance with the testing guidelines of NUREG-0554 also satisfies the testing guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." Our evaluation of the Comanche Peak polar crane tests relative to the testing guidelines of NUREG-0554 and NUREG-0612 is provided below. The overall acceptability of the heavy load handling facilities at Comanche Peak as described in applicant submittals dated August 7, 1981, October 8, 1981, March 1, 1982 and June 8, 1983 is being reviewed separately under Multiplant Item C-10, "Control of Heavy Loads." The review of the containment polar crane against the other NUREG-0554 criteria for single failure proof cranes will be performed under Multiplant Item C-15, "Control of Heavy Loads, Phase II."

The applicant's November 21, 1983 letter provides the testing history of the containment polar crane. Originally, the polar crane was rated at 499 tons and during the preconstruction phase

of Comanche Peak underwent static and dynamic tests at 100 percent of rated load. The load was raised and lowered, rotated 360 degrees and moved across the width of the containment.

Prior to preoperational testing, the polar crane was derated to 175 tons consistent with the load requirements for plant operation. The main hoist was disassembled and repaired, and the gear train in the main hoist was modified for the lower rating. Subsequently the polar crane was statically tested at 125 percent of the maximum critical load (MCL) as required by ANSI B30.2-1976 for cranes that have undergone significant modifications. However, in telephone conversations with the staff, the applicant requested an exemption for the full range of dynamic testing required by ANSI B30.2-1976 as referenced in NUREG-0612. Full dynamic testing would involve raising and lowering the test load, rotating the bridge through 360 degrees and moving the trolley across the full length of the bridge while supporting the test load. The applicant expressed the concern that safety-related equipment in containment could be damaged by falling lead ingots that had been strapped together to form the test load. After discussions with the staff, the applicant performed a limited-range dynamic test as described in the November 21, 1983 submittal. The dynamic test consisted of raising and lowering the test load

(125 percent of MCL) with the main hook at various speeds. The bridge was rotated a minimum of 10 feet and the trolley was moved a minimum of five feet at slow speed. The applicant stated that these tests resulted in moving the trolley and bridge gearing through at least one revolution.

Based on the above, we conclude that the polar crane tests meet the intent of the NUREG-0554 and NUREG-0612 testing guidelines and are, therefore, acceptable. The preconstruction testing at 499 tons adequately tested the structural integrity of the bridge and trolley members for crane operation. The later testing at 125 percent of MCL adequately tests the main hoist gearing, as modified for the derated capacity, and adequately tests the bridge and trolley gearing for plant operational use. The acceptability of the containment polar crane relative to the other criteria of NUREG-0554 for single failure proof cranes will be evaluated under Multiplant Item C-15, "Control of Heavy Loads - Phase II."

July 5, 1984

AI	Intimidation	30	1	31
AM	Miscellaneous	23	6	29
AD	✓ Design of Pipe/Pipe Supports ~~Shaw~~ Tarev/Frei	19	0	19
AV	Vendor/Generic	18	0	18
AT	Test Program	13	4	17
AA	Independent Assessment Program	7	0	7
	Total	403	57	460

P/183

July 5, 1984

QA/QC (GENERAL)

NUMBERS AQ-85 -- AQ-109

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

4 - Zero Power Testing

5 - Low Power Testing

6 - Power Ascension Testing

7 - Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQ-85	Abuse of forms IDR's, IR's and MAR's that should be NCR's	Open		X			1 ART			GAP #4
AQ-86	QC Engineers supervisor makes it difficult for QC to do followup inspections to NCR's	Open		X			1 ART			GAP witness I #6
AQ-87	Craft (not QC) have been signing off NCR's that QC refuses to sign off	Open		X			1 ART			GAP witness I #7
AQ-88	Illegal aliens were used to do Q-work without paperwork	Open		X			1 ART			GAP witness I #8
AQ-89	ISO drawings no longer being sent to Gibbs & Hill but are being corrected on site by B&R	Open		X			1 ART			GAP witness O #1
AQ-90	Iterative design process has broken down, engineers are not performing any analysis on design changes			X			1 ART			GAP witness O, A, C #2, #3
AQ-91	Improper inadequate training of testers (no supervision of tester in the field)			X			1 ART			GAP witness H #12

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ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQ-92	Packages arriving to STE's with DCA's issued against drawings. (Aux. Relay Room)	Open		X			1 ART			GAP #15
AQ-93	Print changes with no DCA's in package arriving at STE	Open		X			1 ART			GAP witness H #17
AQ-94	No procedure to ensure that STE has proper documentation	Open		X			1			GAP witness H #18
AQ-95	Possible misuse of NCR's to cover more than one "traveler"	Open		X			1 ART			GAP witness A, D #24
AQ-96	Use of open-ended Field Job Order-"blank check" #40 or 04 makes work appear to have been pre-approved	Open		X			1 ART			GAP witness J #29
AQ-97	Permanent documentation is being pulled out of the vault and new NCR's written on old problems because the documentation did not match the log book	Open		X			1 ART			GAP witness C #32

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATION AND/OR INVESTIGATIONS SUMMARY

ALLEGATION OR PROBLEM	ALLEGATION STATUS	SOURCE AREA	SOURCE CORR ID	NR/DATE	CROSS REF. /OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATA RETRIEVABLE SOURCE DOCUMENT REF.
Extensive delay in repairs of materials	Open		X			1 ART			GAP witness C #5
Numerous complaints about QAI accepting flawed packages and known deficient documentation	Open					1 ART			GAP witness see #3
Some task force employees (under five groups) violate [illegible] and release individual controlled documents (instead of complete package)	Open		X			1 ART			Current OI Investigation D. Norman to R. Bangert
Requested documents were not updated or revised in the violations or task force	Open		X			1 ART			Current OI Investigation D. Norman to R. Bangert
QAI employees state Safety are solely responsible for all procedural violations. However, these violations were not provided to CPSES CA representatives for review to consideration at the time.	Open		X			1 ART			Current OI Investigation D. Norman to R. Bangert

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQ-103	In mid-May 1984, design changes not incorporated in the drawing were deleted from the open design change logs printed out on the computer. These changes were critical to ongoing inspections and construction and work may have been performed w/o all the necessary information.	Open		X			1 ART			Current OI Investigation D. Norman to R. Bangart
AQ-104	A DCC supervisor authorized the release of individual documents "for reference only," and soon most of the document requests were made in this manner. A week later this authorization was suspended.	Open		X			1 ART			Current OI Investigations D. Norman to R. Bangart
AQ-105	The FSE-159 cable tray hanger drawings were switched from civil control to DCC. These drawings were not accompanied by logs showing what documentation was against each drawing. For a period of time there was no sign-out logs for FSE-159 drawings.	Open		X			1 ART			Current OI Investigations D. Norman to R. Bangart

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQ-106	INE (engineers) have placed uncontrolled design change documents into start-up work authorizations (SWAs), and NCRs have been written because the changes had not been reviewed and distributed as controlled documents.	Open		X			1 ART			Current OI Investigations D. Norman to R. Bangart
AQ-107	Until about March 1984, craft and QC telephoned requests for individual documents using a traveler number which effectively circumvented the requirements of DCP-3. When the instructions for the satellite's release of documentation for travelers were changed to require craft to bring the hard copies of the travelers to the satellites to obtain the documents, the requests were reduced dramatically.	Open		X			1 ART			Current OI Investigations D. Norman to R. Bangart

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

[illegible] CONCERN	ACTION/STATUS	SOURCE ASLB	SOURCE CORR ID	BR/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DOCK [illegible] SOURCE DOCUMENT REF
[illegible] the QA/QC program for [illegible] supports was inadequate in that the inspectors initially assigned to the task of inspecting some 2500 [illegible] that had already been [illegible] were not adequately trained and/or [illegible]	Ltr to IE from R. Bangart IR 80-15		X			1 ART			Ltr to IE from R. Bangart identifying 2 deficiencies IR 80-15
[illegible] of Mr. Atchison [illegible] allegation (challenge) [illegible] from the presentation [illegible] of IER's	Initial Disposition IR 81-14			1		1 ART			IR 81-14 #2

July 5, 1984

WELDING

AQW - 1
AW - 1
2

Key to Completion Category

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

4 - Zero Power Testing

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6 - Power Ascension Testing

7 - Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BH/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQW-67	Documentation errors on welds for the steam generators	Open		X			1 ART			GAP witness H #2.
AW-68	Supports on tanks to RH heat exchangers has undersized welding filler materials (Westinghouse)	Open		X			1 ART			GAP witness C, I #3.

July 5, 1984

CONCRETE/REBAR

AQC - 0
AC - 1
I

KEY TO COMPLETION CATEGORY:

1 - Prior to OL

2 - Fuel Loading

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7- Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AC-44	Cracks in concrete pad beneath the reactor vessel	Initial disposition OI Report Q4-84-016				RIV-84-A-0029	1 ART			A-46 2/28/84 Q4-84-016 P. 1

July 5, 1984

COATINGS

AQO - 1
AO - 0
1

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7** LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQQ-43	Coatings Inspector Certifications and Training may be inadequate	IR 84-08 contains report of IE inspector visit to coatings inspector training session	X				1 ART			5/2/84 Anon. phone call received by HQ Operations Center Duty Officer after RIV working hours. Tape recording and transcript made

July 5, 1984

ELECTRICAL

AQE - 2
AE - 5
7

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AE-18	Cables are being "butt-spliced" in violation of procedures	Open		X			1 ART			GAP #6
AE-19	Overloaded cable trays	Open		X			1 ART			GAP witness A, H #5
AE-20	Violation of cable tray separation requirements (inconsistent procedures regarding cable tray separation)	Open		X			1 ART			GAP witness H #7
AQE-21	Duel numerical designation system in electrical/mechanical area has resulted in massive confusion regarding as-built. (System numbers assigned for both components and not accurately reflected in each systems package)	Open		X			1 ART			GAP witness H #13
AE-22	Unauthorized "cable pulling" to substitute cable that came up short (control room)	Open		X			1 ART			GAP witness H #16

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COMANCHE PEAK NUCLEAR POWER PLANT
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TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AQE-23	Extensive revisions in the electrical post-construction verification inspections			X			1 ART			GAP witness I #25
AE-24	A cable tray held by a temporary hanger fell several levels and ripped out instrumentation wires going to the control room			X			1 ART			GAP witness anonymous #33

July 5, 1984

PIPE & PIPE SUPPORTS (NON W/D)

AQP - 0
AP - ~~8~~ 6
~~8~~ 6

Key to Completion Category:

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7 - Full Power

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TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AP-18	On 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 out rigger. This gap was welded in violation of fit-up limitations.	Initial dispostion IR 84-05		X			1 RIV/ART			IR 84-05 Martin/Oberg
AP-19	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.	Initial dispos-tion IR 84-05		X			1 RIV/ART			IR 84-05 Martin/Oberg
AP-20	Pipe support MS-1-003-009-C72k. The stanchions of this item were welded on the inside with "heliarc" and back welded because of excessive cutoff at "lower point". This was filled in by welding, grinding, and polishing.	Initial dispos-tion IR 84-05		X			1 RIV/ART			IR 84-05 Martin/Oberg

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COMANCHE PEAK NUCLEAR POWER PLANT
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TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7 LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AP-21	Pipe Support MS-1-003-010-C72k The bottom saddle cut in four pieces. The left hand back piece did not fit due to curvature of the pipe. The piece was heated, and a 20 ton hydraulic jack and hammering were used to bend the metal into place.	Initial dispostion IR 84-05		X			1 RIV/ART			IR 84-05 Martin/Oberg
AP-22	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.	Initial dispostion IR 84-05		X			1 RIV/ART			IR 84-05 Martin/Oberg
AQP-23	Inspector for approx. 2500 pipe supports were not adequately trained or supervised	Open ltr to TUECo being prepared by RIV in June 1984					1 ART			IR 80-15 - para 6 OL Hearings Transcripts at 4132 and 4180

July 5, 1984

HANGERS

AQH - 2
AH - 1
3

Key to Completion Category:

1 - Prior to OL

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7 - Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7** LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AH-14	Cable tray hangers have not been installed where designed therefore, stress analysis is inaccurate and do not have proper material traceability.	Open		X			1 ART			GAP #4
AH-15	Use of non-Q material in Q-components - Fire sprinkler system system done by Grinnel - pipe hangers	Open		X			1 ART			GAP Witness J #28
AQH-16	Hanger packages are being taken out of the vault and "screened" (old material is put in manilla folders so that it is not looked at instead of packages reflecting all documentation (25-50 per day) Screening being performed by Hanger Task Force and DCC clerks	Open		X			1 ART			GAP witness H, I #31

July 5, 1984

BOLTS

NUMBERS AB-12

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

4 - Zero Power Testing

5 - Low Power Testing

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7** LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AB-12	S/G laterial support bolts had been cut off (shortened from 9 inches to 7⅛ inches	Initial Disposition IR 84-12		X			1 ARI			IR 84-12

July 5, 1984

INTIMIDATION

NUMBERS AI-31

KEY TO COMPLETION CATEGORY

1 - Prior to OL

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AI-31	Harassment and Intimidation for accurately doing job, and contacting the NRC	Open		X			1 OI			GAP witness H #2

J.L 5
June 22, 1984

MISCELLANEOUS

NUMBERS AM-24 -- AM-29

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

4 - Zero Power Testing

5 - Low Power Testing

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7 - Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
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TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7** LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AM-24	Damage to stainless steel rods in upper internals components of reactor vessel (Thermal couple columns)	Initial disposition in OI Rpt. Q4 84-016 and IR 84-08				RIV 84-A-0029	1 RIV			A-46 2/28/84 Q4-84-016 P. 1 IR 84-08
AM-25	Polar Crane problems with electrical cables and crane rotation	Initial disposition in OI Rpt. Q4-84-016				RIV 84-A-0029	1 RIV			A-46 2/28/84 QA-84-016 p.1
AM-26	Prenotification of site visit of ASLB (3/20/84)	Open		X			1 ART			Anonymous letter GAP witness O #1
AM-27	Prenotification of all NRC audit inspections	Open		X			1 ART			GAP witness J, I, H, K #5
AM-28	Past Design Practice Concern - Construction	Open		X			1 ART			Former Contractor Employee, 5/29/84 Allegation Data Form Received by J. Blake - RII
AM-29	Possible inadequate Alternate Analysis Procedures used in Design Applic.	Open RII transferred to Region IV		X		RII - 84-0081	1 ART			Former contractor employee 3/27/84 Allegation made to W. Liu of Region II.

J.L.S

June 27, 1984

TESTING PROGRAM

NUMBERS AT-14 -- AT-17

Key to Completion Category:

1 - Prior to OL

2 - Fuel Loading

3 - Initial Criticality

4 - Zero Power Testing

5 - Low Power Testing

6 - Power Ascension Testing

7 - Full Power

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COMANCHE PEAK NUCLEAR POWER PLANT
ALLEGATIONS AND/OR INVESTIGATIONS SUMMARY

TASK NO.	ALLEGATION OR CONCERN	ACTION/STATUS	SOURCE ANON	SOURCE CONFID	BN/DATE	CROSS REF./OR TRACKING SYSTEM NO.	COMPLETION CATEGORY 1-7** LEAD	SCHEDULE OPEN	SCHEDULE COMPLETE	ALLEGER-DATE RECEIVED SOURCE DOCUMENT PAGE
AT-14	Test Program for pre-operation and startup is flawed	Open		X			2 ART			GAP witness H #8
AT-15	Functional testing is not proper, only doing continuity (acceptance) testing (CR latest safety injection pumps)	Open		X			2 ART			GAP witness H #9
AT-16	System turnover is uncontrolled activity			X			2 ART			Gap witness H #10
AT-17	Example of problems from HFT Test Deficiency Report (TDR) #853, TDR 555	Open		X			2 ART			Gap witness H #19

the ---

MR. GRIFFIN: Which letter are you referring to? Is this a letter you wrote or you received? CHARGE 4

[redacted]: No, sir. Either the Attorney General wrote it or the Anti-Nukes.

(At this point in the proceedings [redacted] paused to check his files for the letter and handed it to Mr. Griffin.)

MR. GRIFFIN: Okay. I believe I have seen this before. This was a request for information by the State of Texas on certain issues and problems at Comanche Peak.

Who sent you this letter?

[redacted]: [redacted] Do you know her?

MR. GRIFFIN: Yes.

[redacted] I am sure everybody knows her.

MR. GRIFFIN: She is the intervenor for CASE at Comanche Peak.

[redacted]: Weave welding I would say was the rule rather than the exception. Most of the welding inspectors I don't think knew weave welding from anything else. Where they got a lot of these inspectors and also the welders, they send them to school for two weeks. You know, they would be making moonshine or cutting cedar fence posts out in Glen Rose and two weeks later they would be an inspector or a welder.

away.

So at the end of two and a half years you have got a big hole in the system somewhere and you can't even start up because they threw a critical valve away.

MR. GRIFFIN: To go back to something we have discussed previously for a second, you were talking about the lack of experience of some of the welding inspectors. You were mentioning weave welding. Did that conclude what you had to say on weave welding?

[redacted]: First off, I saw very few, if any, inspectors carrying any kind of welding mask around with them to watch what the welders were doing, and it is kind of hard to tell what a welder is doing unless you have got a mask to watch him. I had one and I used to watch them all the time and you would see them get down there they are supposed to be welding stringer beads and they would be going back and forth like that -- (Indicating).

The only time the inspectors were down there was for the fit-up and maybe the first pass, the root pass. When they would finally finish their cover pass they would look for pits and what-not, you know, and put some liquid penetrant on and that would be it.

MR. GRIFFIN: What systems were they doing this welding on?

[redacted] Everything that was not X-rayed.

MR. GRIFFIN: But what systems were they working on at this time?

[redacted]: Nuclear piping systems, the whole nine yards, you know, the boron system ---

(At this point in the proceedings [redacted] again looks through his files and pulls out a document.)

All the boron lines, the sampling system lines, the waste gas collecting system, the chemical volume and control system, the containment spray system. They built most of that thing off the plant over in the backyard somewhere in bits and pieces and then drug it in. The residual heat removal system, some of that, the boron recycle system.

There was one instance, you can call it a vertical pipe chase, and there was probably 20 different lines there that were in some stage of construction. All of them were uncapped, which they are not supposed to do unless they are actually physically working it. They are supposed to keep a cap over the end of the pipe. There was grinding going on and these grindings were going into the line. They were pouring concrete and they had a leak in the form and there was concrete in the lines. There was trash all over the place and sitting right in the middle of the whole thing was this big fat welding inspector eating a banana or a candy bar or something like that,

[redacted]

1c

AGW-72

procedures in QAE, has instructed her to take all voided documentation from the hanger packages when they come back from ANI review and place them in large manilla envelopes and mark them "Historical". Once this has been done, the packages and envelopes are returned to the vault. I believe this is being done so that to anyone reviewing the hanger packages, it will not appear that the hangers have been reworked as many times as they have been. When [redacted] asked why this was being done, [redacted] told me that the person [redacted] talked to said they did not particularly want anyone looking at the old documentation.

Very recently, [redacted] both assistant project managers, sent about 10 or 11 new QC Inspectors to help review. [redacted] told [redacted] to train them for review. [redacted] refused to do so. I think this was done for two reasons: 1) since these QC Inspectors are new they are more likely to sign off on documentation without asking questions and without knowing if procedures are being violated; and 2) B&R gets more money for work done by QC Inspectors than it does for work done by Document Controllers, so I believe, as do the Document Controllers, that they are training their replacements.

There are also some other incidents which have happened recently that concern me. On April 3, [redacted] and I carried hanger packages to the permanent records vault. While we were talking with [redacted] a vault supervisor, came by and stopped. He showed us an RT film package for ISO CC-2-AB-3 on weld No. 9-1. The problem was that there is no weld No. 9-1 on this ISO.

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that they could rework.

Q Um-huh.

A And it's just more or less that it wouldn't appear that that much effort had gone into that one particular hanger. You've got thousands of hangers out there. This is one thing that has escalated the cost of that plant, is the number of revisions.

Q And rework?

A That's right. And it would just appear that there wasn't as much rework as there was.

Start of Allegation AQW-72

Q Okay, also in your affidavit here, you mention a recent incident in which you and [redacted] were taking hanger packages to the records vault, and you were talking to some other people --

A Yes.

Q -- and they showed you a package or ISO that contained no weld?

A Well, he had a film package, you know for this weld; and he started laughing and said, "you know, the funny part about this: thereis no weld 9-1 on this ISO."

And [redacted] says, "Well, where does it belong, then?"

And he says, "How can we find out? How do we know?"

Q Okay, we've got the ISO number here.

A Yuh, you sure do.

Q Yes.

A The film package is what you want on that, and then check it with the ISO.

Q Okay.

MR. IPPOLITO: That's all part of the package, though?

THE WITNESS: No. He had that in his hand by itself. I don't know if he put it with the package; I don't know.

BY MR. GRIFFIN:

Q For the record, that's ISO 16-2-AB-3, and it refers to Weld No. 9-1.

A And then he said -- they asked me how would we check this out to see that it was a good film; he says, "well, I can pull it out like this, and they can say, well, that looks like a pretty good weight; looks like it's pretty good plastic."

(Laughter)

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Q Okay, and then you give an example in here of -- a classic example -- of people not knowing -- you talk about flange?

A Yes.

Q And you've given that as an example of how work is being duplicated, and people do not know -- okay; that will help our inspectors out. They can be on the look-out for that.

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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INVESTIGATION
DALLAS FIELD OFFICE

REPORT OF INQUIRY

August 2, 1982

SUBJECT: ALLEGED IMPROPER WELD PRACTICES AT CPSES
(Q4-82-0005)

1. On June 9, 1982, [redacted], contacted NRC Region IV to report alleged weld problems at CPSES.

2. On June 10, 1982, [redacted] was interviewed by the reporting investigator. [redacted] stated [redacted] was employed at CPSES as a welder from late 1977 to early 1980. He stated he has 13 years' experience as a welder and believes that some of the weld practices he observed at CPSES will result in the plant being unsafe. [redacted] allegations pertained to observations he made while working at various locations at the site, although he was unable to provide any specific locations.

3. [redacted] made several allegations relating to the qualifications of personnel. He stated he did not think welders (not further identified) were adequately trained and that he did not believe weld QC inspectors (not further identified) had sufficient welding background to qualify them to do weld inspections during the period from late 1977 to early 1980. [redacted] also stated he believes that the poorest quality of weld rods are being used at CPSES. With regard to specific allegations of procedural violations, [redacted] stated that in some instances he is aware of occasions when required welds are not accomplished on piping when they are at inaccessible locations (he could provide no specific date or locations). He also stated that some weld procedures require that a heliarc weld be made prior to capping with stick welds. He stated it was frequently the practice to accomplish the entire weld using stick welds. [redacted] stated that he is aware of a general location (inside turbine building, ground level, and one level below) where a 52-inch steam line, containing "chrome molly pipe" was welded using carbon steel weld rods. [redacted] stated he and another individual had also done some repair work in this area without the required heatup being accomplished. Lastly, [redacted] surmised that if radiography of these welds was done, someone must have falsified the identification of radiographs.

4. Investigator's note: It is noted that [redacted] was very difficult to communicate with and to understand during this telephonic interview. It was the impression of this investigator that he may have been intoxicated. [redacted] indicated he could be available for a personal interview at his home.

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5. It is requested these allegations be evaluated by the technical staff to determine whether inspection effort is warranted. Investigative support will be provided upon request.

D. D. Driskill, Investigator

cc: J. Collins, RIV
J. Gagliardo, RIV

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