



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

March 31, 1977

In Reply Refer To:

RIV

Docket Nos. 50-445/Rpt. 77-03 -163
50-446/Rpt. 77-03 -161

TUC

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

Gentlemen:

This refers to the inspection conducted by Mr. R. C. Stewart and other members of our staff during the period March 15-18, 1977, of activities authorized by NRC Construction Permit Nos. CPPR-126 and 127 for the Comanche Peak facility, Units No. 1 and 2, and to the discussions of our findings with Mr. L. F. Fikar and other members of your staff at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspectors.

Within the scope of the inspection, no items of noncompliance were identified.

We have also examined actions you have taken with regard to previously identified unresolved items. The status of these items is identified in Section IV of the Summary of the enclosed report.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If the report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office, within 20 days of the date of this letter, requesting that such information be withheld from public disclosure. The application must include a full statement of the reasons why it is claimed that the

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Texas Utilities Generating Co. -2-

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information is proprietary. The application should be prepared so that any proprietary information identified is contained in an enclosure to the application, since the application without the enclosure will also be placed in the Public Document Room. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

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

Sincerely,

W. C. Seidle, Chief
Reactor Construction and
Engineering Support Branch

Enclosure:
IE Inspection Report Nos. 50-445/77-03
50-446/77-03

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

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report Nos. 50-445/77-03
50-446/77-03

Docket Nos. 50-445
50-446

Licensee: Texas Utilities Generating Company

Category A2

Facility: Comanche Peak Steam Electric Station
Units No. 1 and 2

Location: Glen Rose, Texas

Type of Licensee: Two W PWR's, 1161 MW(e) each

Type of Inspection: Routine, Unannounced

Dates of Inspection: March 15-18, 1977

Dates of Previous Inspection: March 1-4, 1977

Principal Inspector: W. Crossman

R. C. Stewart, Reactor Inspector
(3/18/77 only)

3/31/77
Date

Accompanying
Inspectors:

A. B. Rosenberg, Reactor Inspector (Details I)
R. A. Hermann, Reactor Inspector (Details II)

Other Accompanying
Personnel:

R. E. Hall, Chief, Engineering Support Section (3/18/77 only)
C. L. Heck, Engineering Aide

Reviewed By: W. Crossman

W. A. Crossman, Chief, Projects Section

3/31/77
Date

SUMMARY OF FINDINGS

- I. Enforcement Action
 - A. Items of Noncompliance

None
 - B. Deviations

None

- II. Licensee Action on Previously Identified Enforcement Matters
 - A. Items of Noncompliance
 - 1. Violations

None
 - 2. Infractions
 - 77-02/A.2.1. Procedural Infraction - Certification/Documentation of Inspectors

Not reviewed during this inspection.
 - 77-02/A.2.2. Procedural Infraction - Subcontractors Failure to Report Item of Noncompliance

Not reviewed during this inspection.
 - 3. Deficiencies

None
 - B. Deviations
 - 77-02/B.1. PSAR-ASME Code Commitment Deviation

Not reviewed during this inspection.

- III. New Unresolved Items

None

- IV. Status of Previously Reported Unresolved Items
 - 76-09/III.A. Supplier Control For Calibration Services

Not reviewed during this inspection.

77-01/III.A. Cold Weather Concrete Curing

This matter will remain open pending licensee's resolution of site surveillance reports, Nos. C-134-77 and C-135-77.

76-09/III.B. Calibration of Argon Flow Meters

Not reviewed during this inspection.

77-02/II.1. Field Control of Nonconforming Items - Procedural Disparity

Not reviewed during this inspection.

- V. Design Changes
- VI. Unusual Occurrences
- VII. Other Significant Items
- VIII. Management Interview

None

None

None

Site Meeting

On March 18, 1977, at the conclusion of the inspection, a meeting was held with the following licensee representatives in attendance:

Texas Utilities Generating Company (TUGCO)

R. G. Tolson, Site QA Supervisor

Texas Utilities Services, Inc. (TUSI)

L. F. Fikar, Vice President, Engineering and Construction

J. B. George, Nuclear Construction Manager

C. H. Gatchell, Resident Manager

Gibbs & Hill (G&H)

J. J. Moorhead, Resident Engineer

Brown & Root, Inc. (B&R)

H. C. Dodd, Project Manager

P. L. Bussolini, Project QA Manager

The IE Inspectors reviewed their specific areas covered during the inspection. They indicated that no items of noncompliance, nor unresolved items, were identified during the inspection.

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DETAILS I

Accompanying Inspector: A. B. Rosenberg
A. B. Rosenberg, Reactor Inspector
Engineering Support Section

Accompanying Inspector: C. L. Heck
for C. L. Heck, Engineering Aide
Engineering Support Section

Reviewed by: R. E. Hall
for R. E. Hall, Chief, Engineering Support Section

1. Persons Contacted

- a. Texas Utilities Generating Company (TUGCO)
R. G. Tolson, Site QA Supervisor
- b. Gibbs & Hill (G&H)
R. V. Fleck, Site QA Supervisor
J. V. Hawkins, Site QA Representative
- c. Brown & Root (B&R)
S. F. Miller, QC Engineer (Civil)
C. T. Robinson, Concrete Inspector Level II
B. Smith, Engineering Inspector

2. Scope of Inspection

The scope of this inspection included review of records for concrete placements in the containment structures, observation of a concrete placement in the Auxiliary Building, and review of Cadweld testing records.

3. Status of Project

The licensee has reported that the overall plant progress is 15.2% complete as of February 26, 1977. (Unit No. 1, 13.5% and Unit No. 2, 1.7%.)

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The change of overall plant progress from 25.2% reported as of January 11, 1977, to 15.2% presently reported is the result of the licensee's re-evaluation of the method of estimating the progress.

4. Concrete Placement Records

Concrete records were reviewed for the following four placements in the containment structures:

Placement No.

Unit No. 1

101-5805-002 Containment Exterior Wall - Second Lift

101-4783-001 Cavity Exterior Wall - to EL 798'-8"

Unit No. 2

201-2805-002 Containment Base Mat

201-2805-004 Containment Base Mat

The records reviewed for each of these placements included:

Pre-Pour Plans

Concrete Pour Card

Concrete Placement Check List

Reinforcing Steel, Electrical and Embedded Item Placement Check List

Batch Tickets

QC Concrete Curing and Inspection Report

Curing Report Form and Check List

Concrete Cylinder 28-day Compressive Strengths

For placement No. 101-5805-002, additional records were reviewed including material test reports for cement, sieve analyses and moisture tests for aggregates, water quality tests, and marked drawings indicating reinforcing steel inspection.

Water/cement ratios (w/c) were calculated for a sample of batch tickets and were consistently found lower (conservative deviation) than the w/c identified for the individual design mixes. A substantial difference

was found in the w/c calculated from the batch tickets (sample of 8 batch tickets) versus the w/c for the design mix for placement No. 101-5805-002. Design mix No. 127 identified a w/c of .432 while the batch tickets indicated a typical w/c of .345 (a conservative variation tending to make the concrete stronger). Review of the design mix tests revealed that the tests were run with a slump of 5.5 inches (a worst expected condition, as required by ACI Code) and w/c of .432. The No. 127 design mix chart indicated an average slump of 4 inches, all other ingredients and parameters being the same as the test batches. In order to achieve the desired average 4 inch slump, the water addition was reduced resulting in the reduced water/cement ratio, as permitted by specification.

All records reviewed were found to be in accordance with site procedures.

No discrepancies were noted during this portion of the inspection.

5. Auxiliary Building Concrete Placement

Approximately 80% of concrete placement No. 002-4790-027 in the Auxiliary Building was observed. Placing and consolidation of concrete at the forms, and delivery and testing of concrete at the pumping stations were specifically observed. The temperature measurement at the beginning of the placement, and six slump tests and two air entrainment tests, during the placement were observed. Curing activities were also monitored during the two days following the placement. The activities and tests monitored met site procedural and specification requirements.

No discrepancies were noted during this portion of the inspection.

6. Reinforcing Steel Splicing - Cadwelding

Cadweld test and inspection records were reviewed for compliance with Regulatory Guide (RG) 1.10, "Mechanical (Cadweld) Splices in Reinforcing Bars of Category I Concrete Structures." Records reviewed included the Cadweld Sleeve Inspection Record and the Cadweld Sleeve Tensile Test Average Report. Ten files of Cadweld Splicer Consecutive Splice Records were reviewed and found to conform to the test frequency requirements of RG 1.10.

Cadweld marking and spacing were observed in several areas in Class I structures and found to be in accordance with site procedures and design requirements.

No discrepancies were noted during this inspection.

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DETAILS II

Accompanying Inspector: D. S. Kelley
for R. A. Hermann, Reactor Inspector
Engineering Support Section

Reviewed By: D. S. Kelley
for R. E. Hall, Chief, Engineering Support Section.

1. Persons Contacted

- a. Texas Utilities Generating Company (TUGCO)
R. G. Tolson, Site QA Supervisor
- b. Gibbs & Hill (G&H)
R. V. Fleck, Site QA Supervisor
J. V. Hawkins, Site QA Representative
R. C. Barber, Senior Construction Engineer - Welding
- c. Brown & Root (B&R)
R. Crosno, Mechanical QC Engineer
G. Parks, Civil QC Inspector
M. Fowler, Survey Party Chief
C. Brannon, Project Welding Engineer
- d. Chicago Bridge & Iron Company (CB&I)
M. Jeffers, Welding and QA Supervisor
E. Dildy, Project Foreman
D. Williams, NDE Inspector

2. Scope of Inspection

The scope of the inspection included: observation of work of CB&I and review of records with regard to the installation, erection and welding of the containment liners; and the observation of work of B&R and review of records for the installation of the anchor bolts for the primary piping supports and restraints.

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3. Containment Liners

a. Observation of Work

The welding of the circumferential seams joining rings three (3) to four (4) and one (1) to two (2) on the Unit No. 2 containment liner was inspected and found consistent with the requirements of G&H Specification 2323-SS-14, Revision 3, which invokes draft ASME B&PV Code, Section III, Revision 2. All shielded metal arc welding (SMAW) performed on the liners was to a single weld procedure Specification, WPS-E8018-C1-74-2427/8. Filler material for SMAW was limited to E 8018 material.

Eleven (11) sets of radiographs prepared in accordance with CB&I Procedure RTP-74-2427/8, Revision 3, for weld seams on Unit No. 1 which required repairs, were reviewed. In addition, thirteen (13) sets of radiographs for girth and vertical seams on ring 3-4 were reviewed. The quality and interpretation of the radiographs appeared consistent with draft ASME B&PV Code, Section III, Revision 2 requirements.

b. Review of Records

The records relative to the receiving, installation, field welding and field inspection of the escape lock, assembly 200-A, and the personnel airlock, assembly 100-A for Unit No. 1, were inspected and found consistent with the requirements of draft ASME B&PV Code, Section III, Revision 2. The records listed in the following table were inspected:

	Escape Lock, 200-A DWG. 3, Rev. 11	Personnel Air Lock, 100-A DWG 4, Rev. 11
Receiving	Shop release for shipment, GO 681	Shop release for shipment, GO 681
Installation	Dimensional Record 11/27/76 Location - E1 -837' 13/16", ϕ - 317°00 min 45 sec.	Not completed
Welding	Record DWG R-42, Rev. 1 Seam P-10	Record DWG R-19, Rev. 2 Seam P-57
NDE	Record DWG R-42, Rev. 1	Record DWG R-19, Rev. 2
Radiography per Procedure RTP-7424-27/8, Rev. 7	6 films - Report 40	5 films - Report not complete

Vacuum Box Testing per procedure VTP-7424-27/8,-4B, Rev. 3	Report 103	Not complete
Magnetic Particle Testing per procedure MTP-7424-27/8-13B, Rev. 1	Report 314	Not complete
NDE Personnel	All CB&I Site NDE personnel certified	All CB&I Site NDE personnel certified
NDE Equipment calibration	Mag. particle yokes daily	Mag. particle yokes daily

No discrepancies were noted in this part of the inspection.

4. Anchor Bolts

The receiving, installation, and inspection of the anchor bolts which will be attached to the primary piping supports and restraints were inspected. The anchor bolts were purchased from Arkansas Foundry Co. by B&R P.O. 35-1195-6806, in which the requirements are delineated by G&H Specification 2323-SS-17, Rev. 1, and G&H Drawing 2323-SI-0550 and 0551. The inspector reviewed the B&R receiving report, vendor certificate of conformance, materials certifications, and heat records, and found the bolt materials to be quenched and tempered A 540, B23, as specified. Installation of the anchor bolts was per B&R Construction Procedure 35-1195-CCP-31. Welding was specified in accordance with AWS Structural Welding Code, D1.1, and appeared consistent with the requirement. Inspection of the welding was performed in accordance with B&R QC Procedure CP-QCP-2.17, "Inspection of Miscellaneous Steel Installations." Location of the anchors was verified in accordance with construction Procedure 35-1195-CCP-14, "Concrete Prepour Inspection and Pour Card Sign-Off."

No discrepancies were noted during this part of the inspection.

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