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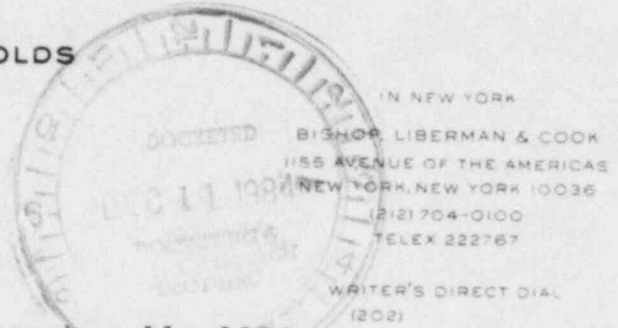
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December 11, 1984

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Washington, D. C. 20555

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

Gentlemen:

We enclose documents responsive to the Intervenor's request that Applicants produce a copy of inspection procedure CP-QCP-2.11. Enclosure 1 to this is a copy of the original CP-QCP-2.11 effective September 28, 1977. Enclosure 2 consists of a revision to CP-QCP-2.11, consisting of a revised cover sheet and page 1 of 10. The revision became effective on January 10, 1978. All other pages of the procedure were unchanged in this revision.

Respectfully submitted,

McNeill Watkins II
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Counsel for Applicants

Enclosures

cc: Service List (w/enclosures)

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ENCLOSURE 1

QUALITY CONTROL PROCEDURE

CP-QCP-2.11

INSPECTION OF STAINLESS STEEL

POOL LINER SYSTEMS

FOR INFORMATION ONLY.

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COMANCHE PEAK STEAM ELECTRIC STATION

TEXAS UTILITIES SERVICES, INC.

J. A. Meyer
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INSPECTION OF STAINLESS STEEL
POOL LINER SYSTEMS

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FOR INFORMATION ONLY

INSPECTION OF STAINLESS STEEL
POOL LINER SYSTEMS

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1.0 PURPOSE

This procedure delineates the installation/erection inspection, monitoring, and control for stainless steel pool systems at the Comanche Peak Steam Electric Stations (CPSES).

2.0 SCOPE

This procedure applies to Quality Control (QC) inspection activities performed during the installation/erection of stainless steel pool liner systems within the reactor and fuel buildings, Units 1 and 2, comprised of the refueling cavity, transfer canals, spent fuel storage pools, and cask reloading pits in accordance with References 3-A and 3-B.

3.0 REFERENCES

- 3-A G&H Specification 2323-SS-18, "Stainless Steel Liner"
- 3-B B&R Construction Procedure 35-1195-CCP-38, "Stainless Steel Refueling Cavity Liner Erection"
- 3-C G&H Specification 2323-SS-9, "Concrete"
- 3-D Procedure No. CP-QCP-2.4, "Concrete Inspection and Testing"
- 3-E Procedure No. CP-QCP-2.13, "Inspection of Fabrication Miscellaneous and Structural Steel"
- 3-F Procedure No. CP-QCP-2.10, "Protective Coatings"
- 3-G B&R Nondestructive Examination Procedures Manual
- 3-H Procedure No. CP-QAP-15.1, "Control of Deficiencies and Nonconforming Items"

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INSPECTION OF STAINLESS STEEL
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4.0 GENERAL

Not applicable.

5.0 PROCEDURE

5.1 PREPARATION FOR INSTALLATION/ERECTION

5.1.1 Inspection Prior To Placement Of Floor Support Concrete

Prior to placement of the concrete floor support, the following operations must be performed (See appropriate portion of Stainless Steel Liner Checklist, Attachment 6-A and 6-B):

- a. Examine embeds to assure that the top surface of the support surfaces are level and flush.
- b. Examine blockout drainage groove forms and leak chase channels or tubes to assure they satisfy the drawing requirements.
- c. Verify that drainage piping or tubing is not obstructed with internal foreign bodies and that the (end-cap) wooden plugs have been securely installed.
- d. Verify that all embeds to first tier wall spacing are securely positioned to drawing requirements.
- e. Verify that all formwork meet the tolerances and cleanliness conditions required by References 3-A and 3-C.
- f. Verify that embeds are securely positioned so that movement not occur during concrete placement and all pre-placement inspections required by References 3-B have been performed.

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5.1.2 Inspection After Floor Support Concrete Placement

Upon completion of the floor support system concrete placement and adequate curing, inspect and document in the applicable portions of Attachment 6-A and 6-B the following operations:

- a. Verify that all removable forms and blockout forms for drainage and leak chase systems are removed. Confirm that leak chase systems serve the correct location identified on drawings.
- b. Verify that interconnected drainage grooves are continuous and meet with drawing requirements and that all excess concrete laitance or other foreign material is removed in accordance with Reference 3-D.
- c. Verify that concrete repairs and that floor support concrete placement has been cleaned and inspected in accordance with Reference 3-D.
- d. Verify the continuity of the drainage piping and leak chase tubing. Ensure that protective plugs have been replaced after continuity check.
- e. Verify that concrete, embed surfaces, leak chase systems, and welds which will subsequently be concealed have been inspected, when inspections are required in accordance with References 3-A or 3-C.

5.2 ERECTION INSPECTION OF WALL LINER PLATES

5.2.1 Inspection Prior to Wall Concrete Placement

Prior to concrete placement for the stainless steel pool liner wall support during installation of the wall plates, the following

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inspection operations shall be performed (See the appropriate portion of Attachment 6-A and 6-B):

- a. Confirm that the first tier wall plates are set in place meeting the minimum gap requirement between plates specified in Reference 3-B.
- b. Verify termination of reinforcing steel and installation of leak chase system in accordance with Reference 3-B at first tier plate level. Confirm that leak chase interconnects are complete and drainage blockout plugs are in place and secured.
- c. Verify that concrete anchors to secure wall plates have been installed and tested to the stud welding requirements and production testing in accordance with Reference 3-E (Paragraphs 5.3.5 to 5.3.7). Confirm that remaining reinforcement steel to elevation 860' has been installed in accordance with Reference 3-D.
- d. Confirm the presence of backing strips and gap requirements (Reference 3-B) between plates prior to installation of leak chase system channels.
- e. Verify that leak chase channels over plate gaps have been welded and inspected in accordance with Reference 3-A and 3-B. Confirm that the leak chase channel serves the correct location identified on drawing and are free of obstructions.

5.2.2 Inspection After Wall Support Concrete Placement

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Upon completion of the wall support concrete placement and removal of internal form support system, the following inspection operations shall be performed, (See appropriate portions of Attachment 6-A and 6-B):

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- a. Verify that the alignments and positions (line and grade) of the wall liner plates have not changed due to form movement.
- b. Verify the removal of the form attachment screw studs. Ensure that the studs are removed in such a manner that damage to the liner plate does not occur. Upon removal, verify that attachment surfaces have been ground flush. Area of attachment removal shall be penetrant inspected as specified in paragraph 5.5.2.
- c. Verify that the materials and process used in finish welding the wall plate seams are in compliance with the requirements of Reference 3-A.
- d. Examine the finish weld seams to ensure the smoothness satisfies the requirements specified in paragraph 5.5.1. All finished weld seams shall be nondestructively examined by liquid penetrant and vacuum box leak tested as specified in paragraphs 5.5.2 and 5.5.3.
- e. Confirm that the wall stainless steel plates have received a final buffing to ensure the removal of rough surface conditions, i.e., such as burrs, gouges and scratches, and has an effective smoothness in accordance with project requirements.

5.3 ERECTION INSPECTION OF FLOOR LINER PLATES

5.3.1 Inspection Prior To Erection Of Floor Liner Plates

The following operations shall be performed prior to installation of the floor liner plates (See appropriate portion of Attachment 6-~~2~~).

- a. Verify complete removal of wall support forms and floor protective wood covering. Ensure the removal of blockout forms for drainage grooves and plugs of leak chase systems. Confirm

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that leak chase and drainage systems are free from restrictions to flow.

- b. Verify the cleanliness of the floor support concrete and embedment surfaces are free from laitance, oil, grease, and/or other loose foreign materials in preparation for protective paint coating.
- c. Verify that the paint coating is cured and satisfies the requirements of References 3-A and 3-B and is inspected for thickness requirements (20 mils) in accordance with Reference 3-F.

5.3.2 Inspection During Installation Erection Of Floor Liner Plates

While the floor liner plates are being erected and placed into position, the following operations of inspection shall be performed, (See appropriate portion of Attachment 6-A and 6-B):

- a. Ensure that the painted coating surface is free of loose foreign materials before each floor plate is laid into position.
- b. Verify that each plate is correctly (by identification) positioned into place in accordance to the Engineering drawing requirements and that the minimum gap of 3/16 inch is maintained between abutting seam weld plate edges. Should welded attachments or spacers on the inner liner surfaces of the plates be required to maintain gap tolerances, verify that the materials are in accordance with Reference 3-A requirements, and that the tack welds are made in accordance with the approved welding procedures used for joining stainless steel liner materials.

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- c. Verify that the liner plates are forced tightly against the embedments to ensure positive contact prior to welding.
- d. When temporary attachment tack welds have been made on liner plates or embed surfaces, verify that such tack welds have been removed and the surface ground flush prior to positioning the next subsequent liner plate. When tack welds have been removed from the exposed surface of the liner plates, such surfaces shall be liquid penetrant inspected as defined in paragraph 5.5.2.
- e. Examine finished liner plate seam and fillet welds by liquid penetrant and vacuum box leak test as specified in paragraphs 5.5.2 and 5.5.3.
- f. Visually examine finished seam and fillet welds as specified in paragraph 5.5.1.
- g. Verify final buffing as described in paragraph 5.2.2e after completion of stainless steel liner erection.

5.3.3 Inspection of Corner-Joint Installation

The Corner Joint between the flooring plates and the wall plates shall be inspected as described in sections b through g of paragraph 5.3.2.

5.4 CONTAMINATION CONTROL

5.4.1 Solutions

Solution used for cleaning of stainless steel materials shall be certified as containing acceptable limits of chlorides and fluorides, as specified in Reference 3-A.

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5.4.2 Inspection Materials

Materials used on stainless steel shall be certified as containing acceptable limits of chlorides and fluorides specified in Reference 3-A.

5.4.3 Tools and Instruments

Equipment used for grinding, buffing, brushing, cleaning or in any other manner upon stainless steel surfaces shall not have been previously used on carbon steel or low melting alloys. Tools and equipment used on stainless steel material surfaces must be identified with fluorescent orange paint. Marking materials used on stainless steel shall be certified as containing acceptable limits of chlorides and sulphurs as specified in Reference 3-A.

5.4.4 Protective Covering

Materials used for protective covering on the exposed surfaces of the stainless steel liner shall be certified as containing acceptable limits of leachable chlorides as specified in Reference 3-A.

5.5 INSPECTION AND TESTING

5.5.1 Visual Inspection (VT)

In addition to the requirements for visual examination specified in CP-NDEP-200 of Reference 3-G, the following acceptance criteria shall be used. NDE Report to be attached to checklist (Attachment 6-A.)

- a. Finished buffed stainless steel interior liner surfaces shall be free from any rough irregularities, gouges, serrations, ridges, crevices or pinholes greater in depth than 1/32 inch.

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- b. Permanent marks, grooves or valleys (caused by mismatch) which exceed 1/32 inch depth or difference in heights shall be unacceptable.

5.5.2 Liquid Penetrant (PT)

Liquid penetrant examination shall be performed in accordance with CP-NDEP-300 of Reference 3-G using acceptance criteria specified in Reference 3-A and the NDE Report attached to Checklist (Attachment 6-A). Identification of welds inspected shall be made in accordance with Section 5.5.5.

5.5.3 Leak Detection (LT)

Leak detection shall be performed by the vacuum box method described in CP-NDEP-600 of Reference 3-G and NDE Report attached to Checklist (Attachment 6-A). Identification of welds tested shall be made in accordance with Section 5.5.5.

5.5.4 Final Water Test

Quality Control shall monitor and document the results of the 48 hour water fill tests for leaks as required by Reference 3-A. Form to be used for documentation of this leak test shall be QA-507-1 used in conjunction with CP-NDEP-600 procedure of Reference 3-G.

- a. Witness Leak Test.
- b. Verify that testing water quality meets the chemical limits specified in Reference 3-A.

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5.5.5 Identification

The method and system used by the Construction Department for weld mapping, individual plate, embedment or reinforcement locations shall be used by Quality Control to document the results of their findings.

5.5.6 Nonconformance Reporting

Deficiencies and nonconforming items or conditions found during monitoring, inspections or testing during the performance of examinations conducted in compliance with this procedure shall be reported as required by Reference 3-H.

6.0 ATTACHMENTS

6-A Stainless Steel Liner System Welding Checklist.

6-B Stainless Steel Liner System Structural Checklist.

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Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT
STAINLESS STEEL LINER SYSTEMS
WELDING CHECKLIST

PROJECT: CPSES

JOB NO. 35 1195

UNIT: _____

PAGE _____ OF _____

5.1.1

PRIOR TO PLACEMENT OF FLOOR SUPPORT CONCRETE

	RESULTS	INITIAL	DATE
1.) DRAINAGE PIPING OR TUBING IS NOT OBSTRUCTED AND PLUGS HAVE BEEN SECURELY INSTALLED.	_____	_____	_____

5.1.2

AFTER FLOOR SUPPORT CONCRETE PLACEMENT

1.) CONTINUITY CHECK OF DRAINAGE PIPING AND LEAK CHASE TUBING. PROTECTIVE PLUGS ARE IN PLACE.	_____	_____	_____
2.) ALL WELDS AND SURFACES WHICH WILL BE CONCEALED HAVE BEEN INSPECTED.	_____	_____	_____

5.2.1

PRIOR TO WALL CONCRETE PLACEMENT

1.) FIT-UP OF WALL PLATE (SEE ATTACHED CHIT)	_____	_____	_____
2.) LEAK CHASE INTERCONNECTS ARE COMPLETE AND DRAINAGE BLOCKOUT PLUGS ARE IN PLACE	_____	_____	_____
3.) LEAK CHASE CHANNEL HAS BEEN INSPECTED (SEE ATTACHED CHIT)	_____	_____	_____
4.) STUD WELDING OPERATION	_____	_____	_____
A.) WPS _____	_____	_____	_____
B.) TWO QUALIFICATION STUDS HAVE BEEN BEND TESTED AND ARE ACCEPTABLE	_____	_____	_____
C.) THE "AFTERWELD LENGTH" OF EACH STUD HAS BEEN CHECKED.	_____	_____	_____
D.) _____ PRODUCTION STUDS HAVE BEEN BEND TESTED AND ARE ACCEPTABLE	_____	_____	_____
5.) ALL METAL SURFACES TO BE EMBEDDED BEEN CLEANED.	_____	_____	_____

5.2.2

AFTER WALL SUPPORT CONCRETE PLACEMENT

1.) ALL ATTACHMENT SCREWS HAVE BEEN REMOVED AND AREA OF REMOVAL LIQUID PENETRANT INSPECTED (SEE ATTACHED CHIT)	_____	_____	_____
2.) WELDING AND INSPECTION IS COMPLETE ON WALL SEAM WELDS (SEE ATTACHED CHIT)	_____	_____	_____

5.3.2

INSTALLATION/ERECTION OF FLOOR LINER PLATES

1.) FIT-UP OF FLOOR PLATE (SEE ATTACHED CHIT)	_____	_____	_____
2.) REMOVAL AND INSPECTION OF TEMPORARY TACK WELDS (SEE ATTACHED CHIT)	_____	_____	_____
3.) FLOOR PLATE SEAM WELDS HAVE BEEN INSPECTED (SEE ATTACHED CHIT)	_____	_____	_____
4.) FINAL BUFFING OF WALL PLATES AND FLOOR PLATES	_____	_____	_____

COMMENTS: _____

✓ = SATISFACTORY
X = UNSATISFACTORY
N/A = NOT APPLICABLE

QC INSPECTOR _____ DATE _____

QC 2.11/1.0

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ATTACHMENT 6-B

9/28/77

CP-QCP-2.11

6-B (1 of 1)



Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT
STAINLESS STEEL LINER SYSTEM
STRUCTURAL CHECKLIST

PROJECT: CPSES

JOB NO. 35-1195

PAGE _____ OF _____

STRUCTURE

POUR #

DATE: _____

S.1.1

FLOOR SUPPORT PREPARATION

1.) TOP SURFACE OF EMBEDS FLUSH AND LEVEL.

RESULTS

INITIAL

DATE _____

2) BLOCKOUT DRAINAGE GROUP FORMS AND LEAK CHASE CHANNELS

OR TUBES ARE CORRECTLY INSTALLED AS PER DRAWING REQUIREMENTS.

3.3 EMBEDS AND FORMWORK SECURED.

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FLOOR SUPPORT POST CONCRETE INSPECTION

1.) ALL FORMS REMOVED

2.) INTERCONNECTED DRAINAGE GROOVES ARE CONTINUOUS,
AND FREE OF LAITANCE OR FOREIGN MATERIAL.

3.) ALL CONCRETE REPAIRS COMPLETE.

4) PROTECTION SYSTEM IMPLEMENTED PRIOR TO ADDITIONAL
INSTALLATION OR ERECTION.

5.2.1

WALL ERECTION PREPARATION

1.1 CONCRETE STUD ANCHORS INSTALLED AS PER DRAWINGS

S.2.2

WALL INSPECTION AFTER CONCRETE PLACEMENT

1.) WALL LINER PLATES WITHIN LINE AND GRADE.

5.3.1

FLOOR PLATE INSTALLATION PREPARATION AND ERECTION

1.) ALL LEAK CHASE AND DRAINAGE SYSTEMS ARE FREE FROM RESTRICTIONS TO FLOW.

2.) PROTECTIVE COATING APPLIED AND CURED.

3.) PROTECTIVE COATING FREE OF LOOSE FOREIGN

MATERIALS PRIOR TO FLOOR PLATE INSTALLATION

5.3.2

COMMENTS: INSPECTED TO CP-QCP 2-11 REV. AND G&H 2323 SS-18 REV.

[illegible]

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✓	=	SATISFACTORY
X	=	UNSATISFACTORY
N/A	=	NOT APPLICABLE

QC INSPECTOR

DATE _____

QC-2-11/2-0

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ENCLOSURE 2

QUALITY CONTROL PROCEDURE

CP-QCP-2.11

INSPECTION OF STAINLESS STEEL

POOL LINER SYSTEMS

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COMANCHE PEAK STEAM ELECTRIC STATION

TEXAS UTILITIES SERVICES, INC.

FOR INFORMATION ONLY.

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T. L. Keller
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September 28, 1977
REVISION DATE: 1/10/78

1.0 PURPOSE

This procedure delineates the installation/erection inspection, monitoring, and control for stainless steel pool systems at the Comanche Peak Steam Electric Stations (CPSES).

2.0 SCOPE

This procedure applies to Quality Control (QC) inspection activities performed during the installation/erection of stainless steel pool liner systems within the reactor and fuel buildings, Units 1 and 2, comprised of the refueling cavity, transfer canals, spent fuel storage pools, and cask reloading pits in accordance with References 3-A and 3-B.

3.0 REFERENCES

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- 3-B B&R Construction Procedure 35-1195-CCP-38, "Stainless Steel Refueling Cavity Liner Erection"
- 3-C G&H Specification 2323-SS-9, "Concrete"
- 3-D Procedure No. CP-QCP-2.4, "Concrete Inspection and Testing"
- 3-E Procedure No. CI-QCP-2.13, "Inspection of Field Fabricated Miscellaneous and Structural Steel"
- 3-F G&H Specification 2323-AS-31, "Protective Coatings"
- 3-G B&R Nondestructive Examination Procedures Manual
- 3-H Procedure No. CP-QAP-15.1, "Control of Deficiencies and Nonconforming Items"

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