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TUGCO QA AUDIT PLAN

VENDOR/ORGANIZATION: Gibbs & Hill - Site based design change review team.

AUDIT NO.: TGH-23 AUDIT DATE: 8/20-24/84

AUDIT SCOPE: This audit will concentrate on Unit 1 Quality Related activities for which the G&H site based design change review team has responsibility. Audit activity will involve evaluation of the program established/implemented for site review and processing of CMC's, DCA's, S-0910 packages and associated calculations.

APPLICABLE CODES & STANDARDS: 10CFR50, Appendix B criteria I, II, III, V, VI, XVII, ANSI N45.2 - 1971; ANSI N45.2.11 - Draft 2, Rev. 2; ANSI N45.2.9 - Draft 11, R.0

REFERENCE DOCUMENTS: 2323 Project Guides - PG-24, PG-27 & PG-29
Design Control Procedures - DC-7 & DC-8

PROJECTED SAMPLING PLAN: Between 200 and 400 Design Change Review Packages

PREVIOUS AUDIT(S) APPLICABLE TO THIS SCOPE: None

OPEN ITEM(S) REQUIRING FOLLOW-UP: None

AUDIT SCHEDULE: Pre-Audit Meeting, 8/20/84, 9:30 a.m.
Audit Conduct, 8/20-24/84
Post-Audit Meeting, 8/24/84, 2:00 p.m.

**Included with checklist
-PG-24, Attachment C
-PG-27, Attachment B

CHECKLIST AND/OR PROCEDURES: ATTACHED (CHECKLIST CONSISTS OF 10** PAGES)

Audit Plan and Checklist Prepared by: K.E. Ormstedt, Audit Team Leader — Date: 8-17-84

Audit Plan and Checklist Approved by: D.L. Anderson, Audit Group Supervisor — Date: 8/17/84

DISTRIBUTION:
D. L. Anderson (Orig.)
Audit File
Team Members: T.B. Cook (QLA)

FOIA-85-151
A/89

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
ANSI N45.2.11 DRAFT 2; REV. 2 1. Do program documents and procedures establish controls in the following areas: (para. 2.2) a. Responsibilities within the Design Organization b. Technical information exchange across external/internal interfaces c. Document Control d. Maintenance and Retention of Design Documents e. Preparation of Design Documents f. Specifying quality levels, acceptance standards and record requirements g. Selection of design verification methods h. Performance of design verification i. Controlling design changes. 2. Do methods provide for traceability of the sources of design information and its flow through the design process? (para. 4.1) 3. Are procedures established to control the flow of design information between organizational units? (para. 5.2.4)		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
4. Is transmitted design information documented and controlled? (para. 5.2.4)		
5. Do transmittals identify the status of the design information or document provided and, where necessary, identify incomplete items which require further evaluation, review or approval? (para. 5.2.4)		
6. Are Design Documentation and Records collected, stored and maintained in accordance with ANSI N45.2.9 requirements? (para. 10.0)		
GENERAL		
1. Define full scope of Unit 1 site design change review activity. (PG-29, para. D)		
2. Obtain a list of G&H Design Reviewers for CMC's/DCA's/S-0910's and associated calculations and verify that each reviewer has been designated by the appropriate discipline Chief Engineer. (PG-29, para. C)		
3. Obtain a list of TNE personnel designated as team members for review of CMC's and verify that reviews are accomplished in accordance with screening criteria established in PG-24, para. O. (PG-29, para. C)		
4. Identify responsibility for maintaining current lists of designated design reviewers?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
REVIEW AND PROCESSING OF CMC'S/DCA'S		
5. Identify the organization responsible for maintaining the Master Log. (PG-24, para. C.1)		
6. Verify the following data is entered into The Master Log for each design change generated: (PG-24, para. C.1) a. CMC/DCA number and revision. b. System designated (CMC ony). c. Safety related classification 'Q'. d. Originating discipline. e. Transmittal (CPPA) number and date. f. Unit designation. g. Affected documents code, number and revision. h. Vendor action required and purchase order number (DCA only).		
7. Pull a sample of 100 completed DCA review packages and 100 completed CMC review packages, and verify the following requirements: (PG-29, para. E.) a. Are all design changes stamped with received date? b. Is a log maintained for all CMC's/DCA's received?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
c. Verify that the Change Verification Checklist (CVC) associated with each CMC/DCA is completed in accordance with PG-24, Attachment C, Instructions for completing the CVC for CMC's and DCA's.		
8. What is the Lead Discipline Engineer's basis for determining when design reviews and interdiscipline engineering reviews are appropriate? Is this criteria established in writing?		
9. Verify the following distribution and filing requirements: (PG-29, para E.1)		
a. Are original CMC packages filed with DCTG?		
b. Are copies of CMC verificaton checklists transmitted to G&H NY? (Review Transmittals)		
c. Are DCA packages with original CVC's transmitted to G&H NY?		
d. Are copies of DCA CVC's and telecon records/calculations maintained by DCTG?		
10. Verify the project coordinator accomplishes the following:		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
a. Logging in the disposition and date of completion of review of each CMC/DCA; b. logging changes to the "Affected G&H Documents," "Unit" designation, or safety related "Q" classificaton; c. logging "Remarks; d. reviewing the final distribution of the CMC/DCA entered on the CVC by the discipline engineers; e. making final distribution of the CMC/DCA package? (PG-24, para. D.7) 11. Are CMC/DCA revision issues processed as new CMC's/DCA's? (PG-24, para. G.) 12. If it is necessary to change the status of a CMC/DCA, which has completed the review cycle, is this change documented and processed in accordance with PG-24, para. K? 13. How is the project coordinator notified when approved CMC's/DCA's are incorporated into G&H drawings? (PG-24, para. L) 14. Is incorporation of approved CMC's/DCA's logged in the appropriate Master Index Log? (PG-24, para. L) 15. Are Security System CMC's/DCA's handled in accordance with PG-24, para. P?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
16. Is partial approval of CMC's/DCA's accomplished in accordance with PG-24, Attachment E criteria?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
REVIEW AND PROCESSING OF TECHNICAL CALCULATIONS Review technical calculations associated with applicable CMC's/DCA's and verify the following: 17. Verify that each calculation is prepared and processed in accordance with procedure DC-7, para. 4.1 thru 4.6.5, as applicable. 18. Are calculations checked in accordance with criteria of PG-29, para. G.2? 19. For design changes issued without supporting calculations, does the design change review team prepare new calculations, or revisions to existing calculations in accordance with DC-7? (PG-29, para. G.2) 20. For non-G&H personnel performing as reviewers, verify documented evidence of QA indoctrination in the applications of DC-7 and DC-8. (PG-29, para. G.2)		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
21. Does the Job Engineer maintain an index of outstanding CMC's, DCA's or DECD's to be incorporated into calculations? (DC-7, para. 4.7.1)		
22. Verify the index identifies calculation number by the design change. (DC-7, para. 4.7.1)		
23. Verify the Job Engineer reviews this index monthly and assigns action to update those calculations with greater than two design changes which may affect the function of the component/system. (DC-7, para. 4.7.2)		
24. Verify the following indexing and filing requirements: (DC-7, para. 4.8) a. Are computer sheets bound in binders, properly indexed and filed. b. Does the calculation index contain: 1. Calculation number 2. Subject 3. Revision Number 4. Safety identification 5. Voided/superseded calculations c. Is the index kept current? d. Are updated copies sent quarterly to the duplicate file?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
25. Unless calculations have been fully approved and incorporated in an original calc. book, are copies of completed calcs. attached to the design change? (PG-29, para. 6.3)		
26. How and when are original site generated new/revised calcs. transmitted to G&H N.Y? (PG-29, para. G.5)		
27. Verify that guidelines for reviewing CMC/DCA documents specified in PG-29, Attachments B, C and D are implemented properly.		
REVIEW AND PROCESSING OF S-0910 PACKAGES		
28. Pull a sample of 50 completed S-0910 packages and verify the following, as applicable.		
29. Is the CVC associated with each S-0910 completed in accordance with PG-27, Attachment B, Instructions for Completing the CVC for S-0910 Sheets?		
30. Are associated calculations reviewed in accordance with PG-27, Attachment C, Procedure for Checking of Site Generated Calculations?		
31. Are changes of status of a completed S-0910 sheet review documented and processed in accordance with PG-27, para. D.3?		

CHECKLIST ITEMS	EVIDENCE OBSERVED	EVALUATION OF EVIDENCE
32. Are completed S-0910 packages distributed as followed? (PG-29, para. F.1.f) a. Are S-0910 packages with original CVC's, telecon records and calculations filed with DCTG? b. Are copies of CVC's transmitted to G&H NY? (Review transmittals) 33. Is partial approval of S-0910 sheets accomplished in accordance with PG-27, Attachment D, Procedure for Partial Approval of S-0910 Sheets?		

Instructions for Completing the "Change Verification Checklist for CMC's and DCA's"

0. RECEIVED DATE _____

The Project Coordinator or designee enters the received date.

1. DISTR. OF REVIEWED CMC/DCA: 875 (CMC), 865 (DCA), TUSI DCTG, _____

All personnel participating in the review process add their names on the line if they wish to receive a copy of the reviewed CMC/DCA.

2. CMC/DCA NUMBER_____ REVISION _____

Project Coordinator or designee crosses out, as appropriate, either "CMC" or "DCA" and inserts the number of the document and appropriate revision. If the revision is "0" then a "0" is inserted.

3. FOR DCA: IS DCA CONSISTENT WITH DECD?
DECD NUMBER _____ REVISION _____

The job engineer's designee circles either NA (Not Applicable), YES or NO. If the DCA is consistent with DECD, designee inserts the number and revision. The designee indicates that the DCA is "APP", signs and dates the form (line 11), and returns it to the job engineer. The job engineer signs and dates the form on the appropriate line (see item 13 below).

If the DCA is inconsistent with DECD, appropriate review is required.

4. FOR CMC: IS CMC CONSISTENT WITH DCA/DECD?
DCA NO._____ REV.____ DECD NO._____ REV.____

The job engineer's designee circles either NA, YES, or NO. If the CMC is consistent with the DCA and DECD, designee inserts the number and revision of appropriate document. The designee indicates that the CMC is "APP", signs and dates the form (line 11), and returns it to the job engineer. The job engineer signs and dates the form on the appropriate line (see item 13 below).

If the CMC is inconsistent with DCA/DECD, appropriate review is required.

5. IS A NEW OR REVISED CALCULATION REQUIRED?

The job engineer's designee reviewing the CMC/DCA is to complete this section regarding calculations. Calculations identified here shall also be entered on the appropriate line of item 6 "G&H Documents Affected."

If the original calculations are not revised or added to, attach copies of new calculation sheets to the CMC/DCA. Either revised original or new calculations must reference the CMC/DCA number.

6. G&H DOCUMENTS AFFECTED (DWGS., SPEC., CALCULATIONS, LINE LIST, INSTR. LIST, ETC.)

The lead discipline engineer or designee and each supporting discipline reviewing the CMC/DCA is to complete this item, listing affected documents (drawings, specifications or calculations) for their discipline. The discipline engineers or designees determine whether the CMC/DCA changes do, or do not, need to be incorporated on the affected G&H documents, entering the documents on the appropriate line:

"Incorporation Required": List G&H documents which are affected by the change (will be incorporated as approved by TUSI).

"No Incorporation (NI)": List documents which are indirectly affected by the change (will not be incorporated).

Where the design change incorrectly lists a G&H document as affected, the document shall be entered on the "Not Applicable (NA)" line.

A supporting discipline who determines that their documents must be revised to incorporate the CMC/DCA changes shall follow either (a) or (b) below:

a) If the package is complete, send the lead CMC/DCA through the supporting discipline design review, if applicable. The supporting discipline design reviewer adds his signature and date to line 12. The supporting discipline job engineer adds his signature and date to line 13.

b) If the CMC/DCA package is incomplete, advise site personnel to issue a separate CMC/DCA. Add a note to this effect in the "Remarks" section of the checklist on the lead CMC/DCA.

7. RWMS-QA APPLICABLE?

Where appropriate, the lead discipline job engineer or designee shall complete this item. He shall review the changes in accordance with mechanical instruction ME-2 for applicability of Branch Technical Position ETSB 11-1 (Rev. 1) (Design Guidance for Radioactive Waste Management Systems, RWMS), circling either "YES" or "NO" as applicable. If "YES", he shall have the document stamped or otherwise marked "RWMS-QA". He shall enter "RWMS" in the vacant line of the interdiscipline review box of the CVC and send the document to the designated RWMS Reviewer as part of the interdiscipline review. (Refer to mechanical instruction ME-2 for details).

8. DESIGN REVIEW REQUIRED?

This question is to be answered by the job engineer or designee.

What Based on?

9. UNIT AFFECTED?

This is to be completed by the lead discipline.

a) If the CMC/DCA affects only Unit 1 and Common systems or equipment, circle "1 & COMMON."

b) If the CMC/DCA affects only Unit 2 systems or equipment, circle "2".

c) If the CMC/DCA affects both Unit 1 and Unit 2 systems or equipment, circle "BOTH."

i) Although a change could affect both units, it may not actually affect both. The jobsite must identify on the CMC/DCA if both units are affected.

ii) If "BOTH" is circled all affected documents shall be indicated in line 6.

10. INTERDISCIPLINE REVIEW

The Job Engineer or designee is responsible for ensuring the completeness of interdiscipline review. He shall line out those disciplines that do not have to review the CMC/DCA.

Each supporting discipline which does review the document is to indicate on the CVC if they approve (APP), reject (REJ) or receive for information only (INFO) the CMC/DCA, initial and date on the appropriate line. If a supporting discipline rejects the CMC/DCA, they are to work with the lead discipline in resolving the problem and documenting communications with the site on the subject.

If a discipline is sent a CMC/DCA which they choose not to review, they shall acknowledge receipt by initialing in the information column.

11. ENGINEERING REVIEW COMPLETE: APP COMM** Phb Pfa REJ** NR

VOID SUPERSEDED BY _____

ENGINEER_____ DATE_____

The lead discipline engineer or designee completes this item. The actions associated with each of the available dispositions shall be as follows:

a) Approved

The lead discipline engineer or designee circles "APP".

b) Approved with Comments

If there is an editorial or other minor error, the CMC/DCA may be "approved with comments" as follows:

1) the lead discipline engineer or designee circles "APP" and "COMM**".

2) make appropriate corrections/alterations to the CMC/DCA.

3) write a brief explanation in the "Remarks" section of the CVC.

4) notify the originator (site) of the comment if the correction/alteration is other than one of spelling or a change to the list of affected G&P documents. A copy of the telecon record or other relevant correspondence shall be attached to the CMC/DCA.

c) Partial Approval

For the G&H Structural Department only, partial approval of CMC's/DCA's is permitted in certain circumstances, as follows:

1) the lead discipline engineer or designee circles "APP", and "Phb" (Hilti bolts) or "Pfa" (frame analysis) as appropriate.

2) write a brief explanation in the "Remarks" section of the CVC.

Refer to Attachment E for details.

d) Rejected

If the CMC/DCA is rejected by the lead or other engineering discipline, the lead discipline engineer or designee circles "REJ**". He shall coordinate Gibbs & Hill's effort to resolve the problem with the responsible site personnel. Pertinent telephone conversations are to be documented. A copy of each telecon record and other relevant correspondence shall be attached to the CMC/DCA. The site personnel shall be requested to make the necessary corrections and then issue a revised CMC/DCA, if applicable.

e) Not Required

If a CMC/DCA does not require a G&H engineering review because the CMC/DCA is not within Gibbs & Hill scope of responsibility (e.g., pipe hanger changes), "NR" (not required) is to be circled and a note added to the "Remarks" section of the CVC (line 14). If vendor review is required, it shall be noted in "Remarks."

f) Void

If the lead discipline engineer or designee learns from the originator that a design change has been withdrawn and will not be implemented, he shall:

1) enter a check-mark in the "Void" box.

2) write a brief explanation in the "Remarks" section of the CVC.

3) attach a copy of the telecon record or other relevant correspondence to the CMC/DCA.

If a CMC/DCA is issued as a "Void Not Superseded" revision, the lead discipline engineer or designee shall enter a check-mark in the "Void" box.

g) Superseded

If the lead discipline engineer or designee knows that a design change is superseded by a later revision received by G&H he shall enter a check-mark in the "Superseded" box and note the revision number of the superseding issue on the line.

If, in discussion with the originator, it is agreed that a new revision will be issued to supersede the current revision, the lead discipline engineer or designee shall:

1) disposition the design change under review as "Rejected."

2) write a brief explanation in the "Remarks" section of the CVC.

3) attach a copy of the telecon record or other relevant correspondence to the CMC/DCA.

Note:

A. All CMC/DCA telecon records must contain the following:

1) A clear positive statement of the agreed disposition; i.e., rejected, approved with comments, void, superseded, etc., etc.

2) A summary of the discussion.

B. Regardless of the Gibbs & Hill disposition, if it is determined that engineering and/or design review by a vendor is required, a note to that effect shall be entered in the "Remarks" section of the CVC.

12. DESIGN REVIEW COMPLETE: APP REJ**

DESIGN REVIEWER(S)_____ DATE_____

Since DECD's have been design reviewed (when applicable) prior to being issued, a design reviewer does not have to signoff if a CMC/DCA is consistent with a previously reviewed

DECD (see items 3 and 4 above). If a design reviewer rejects the CMC/DCA, he shall work with the lead discipline and site in resolving the problem and documenting communication on this subject.

13. JOB ENGINEER(S)_____ DATE(S)_____

The job engineer signature verifies that the CMC/DCA has been reviewed and dispositioned in accordance with Engineering and QA requirements.

Job engineer shall sign the CMC/DCA only after all internal discipline review signoff and design review has been completed.

14. REMARKS

Information regarding void or superseded documents, change of status, reference calculation, editorial error, comment or follow-up item, vendor review requirement and other remarks shall be provided.

Notes on Completing Change Verification Checklists

A. Checklists shall be completed using plain leaded pencil or pen (preferably black to ensure good reproduction quality). Colored pencils shall not be used.

B. Checklists should be completed with care to minimize the need for alterations. When it is necessary to make a change, the following methods may be used:

1) erasure (pencil entries)

2) white-out

3) line through

Regardless of the method adopted, the individual making the change shall enter his/her initials and date next to the change. Failing this, the lead discipline job engineer shall initial and date all changes at the time of the sign-off review.

0. (35-40) RECEIVED DATE _____

1. DISTR. OF REVIEWED CMC/DCA: 875 (CMC), 865 (DCA), TUSI DCTG _____

(4-11) CMC/DCA NUMBER _____ REVISION _____

3. FOR DCA: IS DCA CONSISTENT WITH DECD?: NA YES NO
DECD NUMBER _____ REVISION _____

4. FOR CMC: IS CMC CONSISTENT WITH DCA/DECD?: NA YES NO
DCA NUMBER _____ REV. _____ DECD NO. _____ REV. _____

5. IS A NEW OR REVISED CALCULATION REQUIRED?: YES NO
NUMBER _____ SET _____ REV. _____ DATE _____
HAS CALCULATION BEEN COMPLETED AND APPROVED?: NA YES NO

6. (16-31) G&H DOCUMENTS AFFECTED:
INCORP. REQ'D.: _____
NO INCORP. (NI): _____
NOT APPLICABLE (NA): _____

Reviewed c/c.

7. RWMS-QA APPLICABLE?: YES NO

8. DESIGN REVIEW REQ'D?: YES NO

9. UNIT AFFECTED?: 1 & COMMON
2
BOTH

10. INTERDISCIPLINE REVIEW:

	APP	REJ	INFO	INITIALS	DATE
STRUCT					
MECH					
ELEC					
I&C					
ARCH					
CHEM SVCS					
PBS					
SPEC ANAL					
APP MECH					
QA/QC					
NUCLEAR					

11. ENGINEERING REVIEW COMPLETE: (42-47) APP COMM** Phb Pta (51-56) REJ** (49) NR
(49) |_| VOID |_| SUPERSEDED BY _____
ENGINEER _____ DATE _____

12. DESIGN REVIEW COMPLETE: APP REJ**
DESIGN REVIEWER(S) _____ DATE _____
_____ DATE _____
**ATTACH COPIES OF SITE NOTIFICATION AND REFERENCE DOCUMENT HERE: _____ DATE _____

13. JOB ENGINEER(S) _____ DATE(S) _____

14. (13-56) REMARKS: _____

ATTACHMENT "B"

Instructions for Completing the "Change Verification Checklist for S-0910 Sheets"

0. RECEIVED DATE _____

The Project Coordinator or designee shall enter the received date.

1. DISTR. OF REVIEWED S-0910 SHEET: TUSI DCTG,

FILE 888,_____

All personnel participating in the review process shall add their names on the line if they wish to receive a copy of the reviewed S-0910 sheet.

2. S-0910 SHEET NUMBER _____ REVISION NO. _____

The Project Coordinator or designee shall insert the number and revision. If the revision is "0" then a "0" is inserted.

3. IS THE ABOVE SHEET CONSISTENT WITH ORIGINAL 2323-S-0910 PACKAGE ISSUED BY G&H? NA YES NO

The job engineer's designee shall circle either NA (Not Applicable), YES or NO. If consistent with an original S-0910 sheet, the designee shall identify the page number, sheet number and revision number, complete item 4 "G&H Documents Affected" and item 7 "Unit Affected", and return it to the job engineer. Design review is not required.

If the S-0910 is inconsistent with an original S-0910 sheet, appropriate review is required.

4. G&H DOCUMENTS AFFECTED (DRAWINGS, SPECIFICATIONS, CALCULATIONS, ETC)

The lead discipline engineer reviewing the S-0910 sheet is to complete this item.

5. DESIGN REVIEW REQUIRED? YES NO

This question is to be answered by the Job Engineer or designee.

6. UNIT AFFECTED?

This is to be completed by the lead discipline:

a) If the S-0910 sheet only affects Unit 1 and Common systems or equipment, circle "1 & COMMON"

b) If the S-0910 sheet only affects Unit 2 systems or equipment, circle "2"

c) If the S-0910 sheet affects both Unit 1 and Unit 2 systems or equipment, circle "BOTH".

i) The jobsite must identify on the S-0910 if both units are affected.

ii) If "BOTH" is circled all affected documents shall be indicated in line 6.

7. INTERDISCIPLINE REVIEW

The Job Engineer or designee is responsible for ensuring the completeness of interdiscipline review. He shall line out those disciplines that do not have to review the S-0910 sheet. Each supporting discipline which does review the document is to indicate on the CVC if they approve (APP), reject (REJ) or receive for information only (INFO) the S-0910 sheet, initial and date on the appropriate line. If a supporting discipline rejects the S-0910 sheet they are to work with the lead discipline in resolving the problem and documenting communications with the site on the subject.

If a discipline is sent an S-0910 which they choose not to review, they shall acknowledge receipt by initialing in the information column.

8. ENGINEERING REVIEW COMPLETE: APP COMM** Pfa REJ**
VOID SUPERSEDED BY. _____

ENGINEER_____ DATE_____

The lead discipline engineer or designee completes this item. The actions associated with each of the available dispositions shall be as follows:

a) Approved

The lead discipline engineer or designee circles "APP".

b) Approved with Comments

If there is an editorial or other minor error, the S-0910 sheet may be "approved with comments" as follows:

1) the lead discipline engineer or designee circles "APP" and "COMM**"

2) make appropriate corrections/alterations to the S-0910 sheet.

3) write a brief explanation in the "Remarks" section of the CVC.

4) notify the originator (site) of the comment if the correction/alteration is other than one of spelling or a change to the list of affected G&H documents. A copy of the telecon record or other relevant correspondence shall be attached to the S-0910 sheet.

c) Partial Approval

For the G&H Structural Department only, partial approval of S-0910 sheets is permitted in certain circumstances, as follows:

1) the lead discipline engineer or designee circles "APP" and "Pfa" (frame analysis).

2) write a brief explanation in the "Remarks" section of the CVC.

Refer to Attachment D for details.

d) Rejected

If the S-0910 sheet is rejected by the lead or other engineering discipline, the lead discipline engineer or designee circles "REJ**". He shall coordinate Gibbs & Hill's effort to resolve the problem with the responsible site personnel. Pertinent telephone conversations are to be documented. A copy of each telecon record and other relevant correspondence shall be attached to the S-0910 sheet. The site personnel

shall be requested to make the necessary corrections and then issue a revised S-0910 sheet, if applicable.

e) Void

If the lead discipline engineer or designee learns from the originator that a design change has been withdrawn and will not be implemented, he shall:

1) enter a check-mark in the "Void" box.

2) write a brief explanation in the "Remarks" section of the CVC.

3) attach a copy of the telecon record or other relevant correspondence to the CMC/DCA.

If an S-0910 sheet is issued as a "Void not Superseded" revision, the lead discipline engineer or designee shall enter a check mark in the "Void" box.

f) Superseded

If the lead discipline engineer or designee knows that a design change is superseded by a later revision received by G&H, he shall enter a check-mark in the "Superseded" box and note the revision number of the superseding issue on the line.

If, in discussion with the originator, it is agreed that a new revision will be issued to supersede the current revision, the lead discipline engineer or designee shall:

1) disposition the S-0910 sheet under review as "Rejected".

2) write a brief explanation in the "Remarks" section of the CVC.

3) attach a copy of the telecon record or other relevant correspondence to the S-0910 sheet.

Note: All S-0910 sheet telecon records must contain the following:

1) A clear positive statement of the agreed disposition; i.e., rejected, approved with comments, void, superseded, etc., etc.

2) A summary of the discussion.

9. DESIGN REVIEW COMPLETE: APP REJ**

DESIGN REVIEWER _____ DATE _____

If a design reviewer rejects the S-0910 sheet, he shall work with the lead discipline and site in resolving the problem and documenting communication on this subject.

10. JOB ENGINEER _____ DATE_____

Job Engineer signature verifies that the S-0910 sheet has been reviewed and dispositioned in accordance with engineering and QA requirements.

Job engineer shall sign the S-0910 sheet only after all internal discipline and design review has been completed.

11. REMARKS:

Information regarding void or superseded, reference calculation, editorial error comment or follow-up item, and other remarks, shall be provided.

Notes on Completing Change Verification Checklists.

A. Checklists shall be completed using plain leaded pencil or pen (preferably black to ensure good reproduction quality). Colored pencils shall not be used.

B. Checklists should be completed with care to minimize the need for alterations. When it is necessary to make a change, the following methods may be used:

1) erasure (pencil entries)

2) white-out

3) line through

Regardless of the method adopted, the individual making the change shall enter his/her initials and date next to the

change. Failing this, the lead discipline job engineer shall initial and date all changes at the time of the sign-off review.

ATTACHMENT A

CHANGE VERIFICATION CHECKLIST FOR S-0910 SHEETS - G&H JOB NO. 2323

0. RECEIVED DATE _____

1. DIST. OF REVIEWED S-0910 SHEET: TUSI DCTG, FILE 888, _____

_____

2. S-0910 SHEET NUMBER _____ REVISION NO. _____

3. IS THE ABOVE SHEET CONSISTENT WITH ORIGINAL 2323-S-0910 PACKAGE ISSUED BY G&H? NA YES NO

IF YES, IDENTIFY ORIGINAL S-0910 SHEET:

PAGE NO. _____ SHEET NO. _____ REV. NO. _____

IF NO, OR NA, HAS A NEW OR REVISED CALCULATION BEEN PREPARED? YES NO

NUMBER _____ SET _____ REV. _____ DATE _____

4. G&H DOCUMENTS AFFECTED: _____

_____

5. DESIGN REVIEW REQUIRED?: YES NO

6. UNIT AFFECTED?: 1&COMMON 2 BOTH

7. INTERDISCIPLINE REVIEW:

	APP	REJ	INFO	INITIALS	DATE
MECH					
ELEC					
I&C					
SPEC. ANAL					

8. ENGINEERING REVIEW COMPLETE: APP COMM** Pfa REJ**

☐ Void ☐ Superseded By: _____

ENGINEER _____ DATE _____

9. DESIGN REVIEW COMPLETE: APP REJ**
DESIGN REVIEWER _____ DATE _____

**ATTACH COPIES OF SITE NOTIFICATION AND REFERENCE DOCUMENT HERE _____ DATE _____

10. JOB ENGINEER _____ DATE _____

11. REMARKS: _____

_____

SAMPLE (1)

FIELD DESIGN CHANGE & REVIEW STATUS LOG
AFFECTED DOCUMENT UPDATE REPORT

DWG 2323-M1-0250 SHEET REV CP5

NUMBER		REV	STATUS	NUMBER		REV	STATUS	NUMBER	REV	STATUS
CMC	044700	001	NI	DCD	070010	000	NI			
CMC	044700	002	VNI	DMC	070010	001	07			
CMC	047000	002	CP2	[illegible]	070011	000	NI			
CMC	051937	002	NI	DMC	070011	001	07			
CMC	052701	000	07	[illegible]	071054	000	10			
CMC	055411	000	NI	CMC	091912	000	CP2			
CMC	055418	001	VNI	DCA	008237	000	NI			
CMC	060099	002	CP4	DCA	008237	001	NI			
CMC	062711	000	NI	DCA	008237	002	NI			
CMC	062711	000	07	DCA	008237	003	VNI			
CMC	062747	001	07	DCA	010245	003	NI			
CMC	062749	001	NI	DCA	010245	004	NI			
CMC	062749	001	07	DCA	010245	005	NI			
CMC	064471	001	NI	DCA	010245	006	07			
CMC	064472	004	NI	DCA	010245	007	NI			
CMC	064502	000	NI	DCA	010245	008	07			
CMC	064502	001	05	DCA	010268	000	NI			
CMC	064503	000	NI	DCA	010268	001	NI			
CMC	064503	001	07	DCA	010268	002	VNI			
CMC	064504	000	NI	DCA	010912	000	NI			
CMC	064504	001	07	DCA	010912	001	NI			
CMC	064504	002	NI	DCA	010912	002	09			
CMC	064505	001	09	DCA	011162	000	07			
CMC	064506	001	NI	DCA	012212	000	CP4			
CMC	064506	002	NI	DCA	012212	001	VNI			
CMC	064506	003	07	DCA	012534	000	NI			
CMC	064507	000	NI	DCA	012534	001	07			
CMC	064507	001	09	DCA	014171	000	NI			
CMC	064508	000	NI	DCA	014171	001	NI			
CMC	064508	001	09	DCA	014171	002	NA			
CMC	064508	002	NI	DCA	014171	003	NA			
CMC	077298	000	07	DCA	014644	000	09			
CMC	077620	001	05	DCA	014644	001	NI			
CMC	077644	001	NA	DCA	014796	000	NI			
CMC	078504	000	NI	DCA	014796	001	CP2			
CMC	078504	001	07							
CMC	078505	000	07							
CMC	078509	000	NI							
CMC	078509	001	NI							
CMC	078509	002	07							

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PREPARED BY: ______________________ __/__/__

APPROVED BY: ______________________ __/__/__

S hannon

COMANCHE PEAK STEAM ELECTRIC STATION

FSAR CHANGE REQUEST

Referenced Section of FSAR:

Section 1A(B) Page 59

Description of Change:

See attached FSAR Change Request

References:

FSAR Change Request 84-138

Justification:

Rev. number of Reg Guide Left off

Organization Originating Request: TUGCO QA

Originator: Susan Spencer Date: 8/25/84	Approval Recommended by: Robert A Spangler Date: 8/27/84	Approval Recommended by: DL Chapman Date: 8/27/84

TUSI: Request No. SX-146 BSD

Recommend-Approval ☒ Disapproval ☐ By: BSD Date: 8/29/84	Approved ☑ Not Approved ☐ By: [signature] Date: 8/29/84

Change Provided in Amendment 53

SLS

COMANCHE PEAK STEAM ELECTRIC STATION

FSAR CHANGE REQUEST

Referenced Section of FSAR:

Section 1A(B) Page 59

Description of Change:

See attached & marked up copy of page 59.

References:

U.S.NRC's
Comanche Peak Special Review Team Report
dated July 13, 1984 (Eisenhut to Spence)

Justification:

The failure to establish measures to audit vendors at least triennially is considered a potential enforcement issue in the referenced report. This change request will establish the requirement for a triennial audit of safety-related vendors.

Organization Originating Request: TUGCO QA, Dallas

Originator: Susan Spencer Date: 7/27/84	Approval Recommended by: R. L. Spangler Date: 8/1/84	Approval Recommended by: D. N. Chapman Date: 8/3/84

TUSI: Request No. _____

Recommend-Approval ☐ Disapproval ☐ By: Date:	Approved ☐ Not Approved ☐ By: Date:

Change Provided in Amendment _____

Discussion

This regulatory guide is not applicable to CPSES; however the design of safety-related concrete structures is discussed in Section 3.8.

Regulatory Guide 1.143 | 8

Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants

Discussion

This regulatory guide is not applicable to CPSES. Reference Section 11.2, 11.3 and 11.4 for related information. | 42

Regulatory Guide 1.144

Auditing of Quality Assurance Programs for Nuclear Power Plants

Discussion

~~This regulatory guide is not applicable to CPSES.~~ Delete and insert attached discussion

Regulatory Guide 1.145

Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants | 8

Discussion

This regulatory guide is not applicable to CPSES.

Regulatory Guide 1.144

Auditing of Quality Assurance Progams for Nuclear Power Plants

Discussion

This regulatory guide is not applicable in its entirity to CPSES in that TUGCO QA audits are conducted in accordance with ANSI N45.2.12, Draft 3, Revision 0 for construction and ANSI N45.2.12, Draft 4, Revision 2 for operations (see FSAR chapters 17.1 and 17.2). TUGCO has elected to adopt, as an alternative commitment to the above referenced ANSI standards, the guidance provided by RG1.144, Rev. 1 paragraph C.3(b), "External Audits".

TCP Index

001 Compliance with QA commitments & procedural requirements (3/20-23/78)

002 Implementation of TCP-1 corrective actions (6/26-30/78)

003 Welding, concrete and cadwelding (9/7-13/78)

004 Implementation of corrective action to SSR # 02-78 (4/10-12/79)

005 CRSES Site Activities (8/27-30/79)

006 Site Engineering Activities (12/79-1/21/80) Followup #2(1/19-2/10/81), #3(2/10-19/81)

007 QA/QC Management (12/26-28/79)

008 Procurement and IEEE qualifications (2/11-3/13/80) followup (5/11-22/81)

009 Receiving, Maintenance and Storage (3/24-4/1/80)

010 Installation and welding of Safety-Related Piping Systems (4/28-5/2/80)

011 DAMAGE STUDY
Fire Hazards Analysis (4/29-5/1/80) (5/20-6/5/80) # Followup (3/9-20/81)

012 ELECTRICAL: containment penetrations, cable tray, conduit, cable, supports. (6/16-7/7/80)

013 MECHANICAL: containment penetrations, safety-related piping & piping supports. Followup (3/30-4/10/81)

014 Damage Study (8/20-22/80)

015 CIVIL: concrete placements, protective coating (structural steel, liner (10/6-8/80)

016 CCW CANCELLED

017 Damage Study (10/28-29/80)

018 Processing & Design Review of CMC's (12/2-4/80)

TCP Index

1981

019 TUSI commitments to TGH-015 (3/30-4/3/81)

020 IE Bulletins (4/20-24/81)

021 I&C Installation (5/11-22/81)

022 Procurement and Damage Study (8/3-7/81)

023 Document Control Center (9/21-25/81)

024 Protective Coatings (9/14-18/81)

025 Receiving, Storage & Maintenance (9/21-25/81)

026 Permanent Plant Records (10/5-9/81)

027 Penetration Seal (TUSI & Southwest Research) (11/2-9-13/81)

028 Nonconformance Reports (11/16-20/81)

029 Class 1E lighting and fire protection (11/30-12/4/81)

1982

030 Protective Coatings - CONCRETE (1/25-29/82)

031 IEEE Qualification (1/25-29/82)
(2/8-12/82)

032 Mechanical Engr: site stress analysis, mech. design group, as-built piping

033 Technical Support (2/10-17/82)

034 Procurement (1/18-29/82)

035 I&C: construction and QA/QC (3/8-12/82)

036 QA/QC Training (3/8-12/82)

037 Civil - Hilti Bolts, Grouting & Seismic Restraint Cable (3/15-19/82)

038 ENGR: PIPE SUPPORT ENGR. Group (CAR-003) (4/13-15/82)

039 Constr/QC: ASME-MECH. PIPING & SUPPORTS (4/19-23/82)

040 DOCUMENT CONTROL (4/26-30/82)

041 Constr/QC: ELECTRICAL - CABLE, TERMINATIONS, RACEWAY... (5/3-7/82)

042 Constr/QC: Protective Coatings - Steel (5/10-14/82)

043 ENGR: DESIGN CONTROL (5/17-21/82)

044 Constr/QC: MTE (6/21-24/82)

045 ENGR: DAMAGE Study (6/29-7/2/82)

046 ASME PROCUREMENT/DOCU. Control (7/6-8/82)

047 ENGR: TECHNICAL SERVICES DESIGN REVIEW (8/3-5/82)

048 Constr/QC: RECEIVING, STORAGE, MAINTENANCE (8/16-19/82)

049 ENGR: CONCEPTUAL ENGR (8/30-9/1/82)

050 ENGR: AS BUILT PIPING VERIF. (9/13-17/82) (9/13-17/82)

051 Constr/QC: ASME MOMENT RESTRAINTS/MECH. SNUBBERS

052 ENGR: PIPE SUPPORT ENGR (9/27-10/1/82)

053 Constr/QC: PROTECTIVE COATINGS - CONCRETE (9/28-10/1/82)

054 Constr/QC: ELECTRICAL - FIRE PROT/DETECTION (10/11-14/82)

055 ENGR: IEEE QUALIFICATIONS (10/18-21/82) (11/8-12/82)

056 ENGR/Constr/QC: TRAINING/NONCONFORMANCE

057 QA/QE: AS-BUILT INSPECTION (10/25-27/82)

058 ENGR: DAMAGE STUDY (11/29-12/3/82)

059 ENGR: GEH 53AG (12/14-16/82)

060 ENGR: DESIGN CHANGE ACTIVITIES (11/29-12/2 & 1/25-28/83)

1983

061 ENGR: DRAWING UPDATE

062 Constr/QC: Thermolag Application/Inspection

063 ENGR/Constr/QC: I&C

064 ENGR: PIPE SUPPORT ENGR - Stress Analysis

065 ENGR: PROCUREMENT

066 Constr/QC: RADWASTE MGMT.

067 Constr/QC: Civil/structural

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Westinghouse

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INTRODUCTION

This topical report describes the Quality Assurance Plan used in applying a Quality Assurance Program to the Westinghouse Water Reactor Divisions. In its present form, the report represents a combination of several years development by Westinghouse and review by the Nuclear Regulatory Commission. The original issue of the program description was in RESAR-3 submitted in June, 1972. This issue addressed the requirements of the SAR Format and Content Guide issued February, 1972. Changes to the program description were made as a result of license reviews on the Catawba and Vogtle projects, the revised SAR Format and Content Guide (October, 1972), the original issue of the "Gray" and "Green" Books, issued ANSI Quality Assurance standards, and the generic questions associated with the LaSalle project Quality Assurance review. The Nuclear Regulatory Commission has issued Revision 1 to the "Gray" Book, WASH-1283, dated May 24, 1974. This document allows Quality Assurance Program descriptions in the form of topical reports. This report contains the documentation necessary to be responsive to that option.

To maintain this topical report current with regulatory requirements and the dynamic nature of the Quality Assurance Program, amendments will be submitted: changes which affect the progam definition will be submitted to the NRC for approval; changes which do not affect the program definition will be submitted to the NRC for information. The original issue shows Amendment 6 because this was the current version of Chapter 17 in RESAR-3. For consistency, amendments will be identified with sequential revision numbers, starting with seven (7). Revision 7 of this report was reviewed and approved by NRC on December 31, 1974. On September 16, 1977 the NRC approved Revision 8A conditioned upon their evaluation of the underground facility for single site storage of permanent records. The NRC approved Revision 9A on October 16, 1979.

This program description applies to Quality Assurance Programs in effect at this time. Thus, activities accomplished in the current time peri will be performed in accordance with the systems and procedures described herein. This amendment and future amendments to this report will be issued to document the program modifications and improvements applicable to the activities performed in the subsequent period. Thus, Westingh will incorporate new requirements into the ongoing program in a timely manner, but will not automatically backfit the requirements into previously accomplished activities. It should be recognized that certain new requirements may take a considerable period of time to implement fully. If there are unusual time periods required for implementation, Westinghouse will identify these in the amendment which addresses the new requirements.

The use of the word applicant throughout identifies the plant owner who will seek a construction permit from NRC. The NRC acceptance of this Topical Report occurs prior to the approval of the individual applicant's PSAR.

demonstrated capability of performing the assigned tasks to predetermined standards or levels of proficiency as the primary basis for evaluating the qualifications and certifying the personnel as an acceptable alternative to the specific years of education/experience.

The procedures include the qualification requirements appropriate for the activities performed, and provisions for: maintenance of training and physical examination commensurate with the activity assignment. Each record or certificate of qualification includes in definitive terms, the activities the individual is qualified to perform and the basis used for certification. Personnel are qualified for the tasks they are assigned to perform. Westinghouse evaluates the adequacy of the personnel qualification programs through its audit and/or surveillance activities.

17.1.3 DESIGN CONTROL

Water Reactor Divisions involved in NSSS design provide measures to assure effective design control in a planned, controlled, and orderly manner. The design control methods used, as applied to each tier or supply, are summarized in Tables 17-2, 17-3, and described throughout this section. These methods include such activities as: specifying quality standards, determination that equipment characteristics are inspectable/testable, selection and review of design methods and inputs, design change control, design interface actions, and implementation of design procedures.

Measures are established to correctly translate the applicable regulatory requirements and design bases into specifications, drawings, written procedures, and instructions. Quality standards are specified in the design documents, and deviations and changes from these quality standards are controlled. Suitable design controls are applied to such activities as reactor physics; seismic, stress, thermal, hydraulic, radiation, and accident analyses; compatibility of materials; and accessibility for inservice inspection, maintenance, and repair.

The project manager is responsible for identifying to engineering, purchasing, licensing and product assurance groups the standards and special customer requirements applicable to each nuclear power plant. This identification process is the start of the design activity on a nuclear power plant. Changes to distributed information are also issued by the project manager. This process is defined in written procedures.

The licensing group (e.g. Nuclear Safety Department) prepares safety analysis reports. Prior to the submittal of NSSS portions of safety analysis reports to the applicant, nuclear safety engineers obtain engineering review and concurrence of technical content. Also, product assurance review and concurrence is obtained for the quality assurance section of safety analysis reports. The review process is formal and documented. As further elaborated in this section and Section 17.1.6, appropriate procedural controls (e.g. written procedures to aid in selecting single or multiple-reviewer verification approaches and for verifying the adequacy of the selections) are established for design documents, that incorporate the regulatory requirements of the NSSS portion of the safety analysis reports.

Based upon the identified technical parameters, systems engineering groups review the design of NSSS equipment to determine that functional, safety and regulatory requirements are met. Mechanical and electrical design engineers participate in the functional design process by identifying equipment limitations and resolving functional requirements with equipment capabilities.

Equipment engineers are responsible for designing or specifying NSSS equipment. Nuclear safety engineers specify safety parameters and provide them to engineering groups for incorporation into components and systems specifications. Equipment specifications are prepared by the electrical and mechanical design engineers. The term "equipment specifications" as used in this plan includes drawings when they are used instead of equipment specifications. Measures are established for the selection of suitable materials, parts, equipment, and processes for safety-related structures, systems, and components which include the use

of valid industry standards and specifications. Materials, parts, and equipment which are standard, commercial (off the shelf) or which have been previously approved for a different application are reviewed for suitability prior to selection. Detailed quality control requirements are specified in the equipment specification, its references, or in the procurement document.

Examples of these are non-destructive examinations, acceptance criteria, functional tests, and recording of the measured values of key characteristics. In the few cases when equipment specifications or design drawings are not used, the specific quality control requirements, tests and acceptance criteria are identified in the purchase order. The design of equipment also provides for access to components for inservice inspection and maintenance as required to assure continued integrity throughout the life of the plant.

Equipment specifications and changes to equipment specifications are reviewed to verify that they correctly incorporate design bases and meet system requirements, conform to established engineering standards, meet code requirements, satisfy safety requirements including those specified in safety analysis reports and contain necessary quality requirements. The design interfaces are a function of the type of component being designed. The equipment specification author/shop order holder, based on detailed knowledge of the specification content and the content source, is responsible for the selection of reviewers. Written procedures exist for aiding in this selection. Further, the cognizant manager, by independent determination, verifies the adequacy of the list of reviewers. Reviews are conducted by design and input interface groups as required, in their area of cognizance, to assure the proper application of design requirements and parameters.

All equipment specifications and subsequent changes are reviewed by product assurance for quality requirements, including inspection and test requirements and acceptance criteria, and this review is documented. Written engineering instructions prescribe preparation. review,

approval and methods for changes to equipment specifications. These instructions assure that the reviews properly accomplish the design verification function.

In addition to design verifications for equipment specification, Water Reactor Divisions perform other design verification activities. In performing these activities the design verification method is selected for proper accomplishment, and may involve such methods as design review, alternate calculations, or qualification testing. Procedures identify responsibilities of the verifier, areas and pertinent considerations to be verified, and the required documentation. Where a test program is used in lieu of other verifying or checking processes, a qualification test of a prototype unit under conditions designed to simulate the most adverse design conditions is used. Generally, test programs are used in conjunction with other means of design analysis. In these cases, analysis is used to verify selected portions of the operating performance regions, and the test program is used to verify design at the remaining intervals of operating conditions. The design verification is performed by individuals or groups other than those who performed the original design. In exceptional cases, when the designer's supervisor is the only available technically competent person, the supervisor will perform the design verification function. When the immediate supervisor performs the verification, the justification is individually documented and approved in advance by the supervisor's management. In cases where design verification (other than qualification testing) is not completed prior to release of the documents involving design interface, the design verification may be deferred providing the action is justified and affected design output/input documents are appropriately identified (as to status) and controlled. Thus the design verification procedure(s) assure completion prior to fuel load (for a plant under construction) or prior to relying upon the component, system, or structure to perform its function. Design alterations initiated as a result of design review, discovery of design deficiency or design error, are formally documented as design changes. Errors and deficiencies in the design, including the design process, that could adversely affect safety-related structures, systems, and components are documented and corrected; and corrective action is taken to preclude repetition. Where computer programs are used in

design analysis, these programs are verified and their usage is controlled. Control procedures include such quality activities as development, verification (to produce accurate results), qualification (of application), configuration control, and records retention.

Written procedures control design changes, including field changes. These procedures require review by those design input groups whose area of cognizance is affected by the change. Design control, such as reviews and approvals, commensurate with the measures applied to the original design, is accomplished in accordance with written engineering instructions. Upon approval, engineering initiates the required action(s) to amend the drawings and specifications to accurately reflect the design change. When approved for release, copies of the revised documents are provided to the applicant as well as other organizations needing the documents for subsequent work. As discussed in Section 17.1.6, this distribution system is controlled.

Design interface controls are established in procedures, instructions, and formal agreements. These controls include the review, approval, release, distribution, and revision of documents involving design interfaces with participating design organizations. Aspects of the equipment design that have an effect on that part of the plant design performed by the applicant or his agent/architect engineer are forwarded to them for their review. Applicant or architect engineer drawings which have an effect on the Water Reactor Division scope of supply are likewise sent to Water Reactor Divisions engineers for their review.
Interfaces between participating design organizations are documented to define the responsibilities between participating Water Reactor Divisions.

The Water Reactor Divisions establish the functional design criteria and parameters for systems. This information is transmitted in the form of equipment specifications or drawings to the manufacturer. In some cases the manufacturer is responsible for providing a detail design or process procedure based upon the criteria and parameters. These are submitted

by the supplier to Water Reactor Divisions, where they are reviewed and approved prior to their use in equipment manufacture. Document submittal requirements are clearly stated in purchase orders or in the case of the other Water Reactor Divisions in written interface agreements.

In addition to the interface between Water Reactor Divisions and manufacturers, there is an interface with the applicant and his design agents. Water Reactor Divisions' equipment specifications, fluid flow diagrams, and drawings are transmitted to the applicant or his design agents for information and use. Each project manager has a written procedure defining the process for transmittal of these documents and for controlling the status of action items and inquiries received from the applicant.

The implementation of the design control system is audited by product assurance group(s).

Design documents, design records, related records and changes there to are collected, stored, and maintained in a systematic and controlled manner.

17.1.4 PROCUREMENT DOCUMENT CONTROL

Water Reactor Divisions' procurements are from approved sources of supply; procurement documents are originated, reviewed, and issued as defined herein and further detailed in Section 17.1.6. In general, the procurement of components, systems, structures, material, and replacement parts within Water Reactor Divisions falls into three distinct areas:

1. Components procured from Water Reactor Divisions.

2. Components, systems and structures procured from suppliers and Westinghouse divisions outside Water Reactor Divisions.

3. Materials procured from suppliers. (Ref. Section 17.1.7).

RESPONSIBILITIES

2.1.1 Vice President, Nuclear Operations

The Vice President, Nuclear Operations is responsible for establishing, implementing and manning the Operations Review Committee in accordance with the requirements of the CPSES Technical Specifications and this manual.

2.1.2 Operations Review Committee (ORC)

The ORC shall report to and advise the Vice President, Nuclear Operations on those areas of responsibility as specified in the CPSES Technical Specifications and this manual. The committee shall discharge its responsibilities in accordance with the procedures set forth in this manual.

2.1.3 Chairman, ORC

The Chairman, ORC shall be responsible for the conduct of ORC meetings and for such other activities as designated in this manual.

PROCEDURE

2.2 Composition

2.2.1 The Operations Review Committee shall be composed of no less than five nor more than nine members of whom no more than a minority are members having line responsibility for operations at CPSES. Members will be appointed by the TUGCO Vice President, Nuclear Operations who will also designate a member to serve as the committee chairman. In order to comply with committments made before the ACRS (reference 1.4.7), at least two of the members shall be selected from outside of the Texas Utilities Electric Company.

2.2.2 Alternate members will be appointed by the Vice President, Nuclear Operations. Alternates shall be kept informed of ORC proceedings and are responsible to observe, at a minimum, one ORC meeting annually whether or not the regular member is present. As a minimum, minutes will be disseminated to alternate members. It is the responsibility of the Secretary, ORC to ensure that alternates receive background material necessary for the conduct of business in meetings which the alternates attend.

Alternate members who should attend ORC meetings will be notified in advance. The participation of alternates is restricted to the legitimate absence of a regular member. In the absence of any regular member, any alternate member may act with the full authority of regular members.

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2.2.3 The Vice President, Nuclear Operations will designate a member of his staff to serve as Secretary to the Operations Review Committee. The Secretary will be responsible for recording and preparing the agenda and minutes of the meeting, distribution of pertinent information to committee members, follow-up of action items, and dissemination of approved minutes. The Secretary will serve as a non-voting member of the ORC.

2.2.4 The Secretary, ORC, shall maintain a current list of regular members and their alternates.

2.3 Membership Qualifications

2.3.1 It is the responsibility of the Vice President, Nuclear Operations and the ORC Chairman to ensure the availability of individuals with the experience and competence required to review designated activities in the following areas:

a. Nuclear Power Plant Operations
b. Nuclear Engineering
c. Chemistry and Radiochemistry
d. Metallurgy
e. Instrumentation and Control
f. Radiological Safety
g. Mechanical and Electrical Engineering
h. Administrative Controls and Quality Assurance Practices
i. Emergency Preparedness
j. Other appropriate fields associated with the unique characteristics of CPSES

In the aggregate, the membership of the ORC shall have specific practical experience in the majority of the disciplines listed in a through i above.

2.3.2 The Vice President, Nuclear Operations or the Chairman, ORC may supplement the Committee expertise in any of the disciplines listed in paragraph 2.3.1, through the use of consultants or the appointment of ORC advisors. Advisors serve on a non-voting basis.

2.3.3 ORC members shall hold a bachelor's degree in an engineering or physical science field, or have the equivalent in experience, and have a minimum of five years of technical experience of which at least three years shall be in one or more of the disciplines of paragraph 2.3.1 above.

2.3.4 ORC members and alternates may visit CPSES to observe plant operations and to interact with plant staff. Prior arrangements for visits may be set up via the Manager, Plant Operations. Each ORC member and alternate should visit the site at least annually.

ORC

2.4 Meeting Frequency

2.4.1 The Chairman shall ensure that formal meetings of the ORC are held at least once per calendar quarter during the initial year of CPSES operation following fuel loading, and at least once per six months thereafter.

2.4.2 Unscheduled meetings of the ORC may be called by the Chairman as the need occurs.

a. An unscheduled meeting may be called to address a single purpose (such as a change in Technical Specifications) or a broad agenda. If the agenda is similar to that of a formal meeting, the unscheduled meeting may be substituted for the formal meeting referenced in 2.4.1.

b. In extenuating circumstances where it is impractical to convene a quorum to consider a topic due to time constraints, the Chairman may use the telephone (conference call or polling of members) in lieu of a meeting. In such cases, the action taken shall be reviewed by the ORC at its next regularly scheduled meeting.

2.4.3 The Chairman shall ensure that at least one meeting of the ORC is conducted at CPSES annually.

2.5 Quorum

2.5.1 The minimum quorum of the ORC necessary for the performance of the ORC review and audit functions as listed in the Technical Specifications or in this Manual shall consist of not less than a majority of the appointed members (or their alternates, subject to 2.5.2 below) including the chairman or his designated alternate.

2.5.2 Within the membership of a quorum, no more than a minority of the quorum formed shall have line responsibility for the operation of CPSES. Furthermore, no more than two alternate members shall at any one time participate as voting members in the conduct of ORC activities.

2.6 Voting Procedure

2.6.1 Decisions will be reached by a simple majority of the membership present, as indicated by a voice vote. A member of the voting minority may request that a dissenting opinion and the vote of each individual member be recorded in the meeting minutes.

undated

ATTACHMENT B

1983 Audit Status

TUSI ENGINEERING & CONSTRUCTION/QC:

I. Audits Scheduled/Not Performed:

- Receiving/Storage/Maintenance - Audit TCP-92 performed January 1984
- ASME Administration - N5 Program - Activities were reviewed during audit TCP-70, TCP-79, TCP-80, and TCP-88. The program will be reviewed during early 1984.
- 2nd Damage Study Audit - An audit is planned for 2nd quarter 1984.

II. Audits Added:

- Document Control - TCP-68
- INPO Items Verification - TNO-2
- Permanent Equipment Transfers - TCP-72
- Civil/Structural - TCP-78
- Pre-Service Inspection - TUG-34
- Area Turnover - TCP-80
- Turnover/Completion Activities - TCP-88

III. Discussion:

During mid-1983, Construction/QC/Engineering emphasis shifted to a room/area turnover concept. As a consequence of this effort, audit activity was added to address this process. These are multi-discipline, and multi-activity audits to review adequacy of the turnover/completion process.

STARTUP:

I. Audits Scheduled/ Not Performed:

- Testing activities - 3 audits not performed

II. Audits Added:

None specific to Startup

III. Discussion:

During the 3rd and 4th quarter 1983, Startup testing activities were greatly reduced from original projections. Based on this reduction of activity and the continuing surveillance efforts of the Startup/Turnover QA group, three testing audits were not performed. Audit manpower was utilized to support other audit areas.

Undated

LICENSING CORRESPONDENCE REVIEW LOG

FOR INFORMATION ONLY

DOCUMENT NUMBER	DATE RECEIVED BY OPER. SUPT.	TITLE	ASSIGNED TO / LCR NO.		STATUS				
			DATE	COMP. DATE	RESPONSE DUE DATE	ACTION REQUIRED	ACTION COMP. DATE	TNO NUMBER	DATE CLOSED
IEB-83-08	1/10/84	Electrical Circuit Breakers with an undervoltage trip feature in use in Safety-Related	J.L. Montgomery 1/12/84	84-001 1-16-84	4/6/84	Verify no CB's depend on UV trip device for safety function and submit declaration or perform action items.	2/27/84	84129	2/27/84
Proposed Rules: 10CFR 50 Fed. Reg. Vol 49	2/29/84	"Analysis of Potential; Pressurized Thermal Shock Events." Fed. Reg. Vol 49 No. 26 Date 2/7/84	S. Smith 2/29/84	84-002 3/14/84	3/7/84	Applicants required to provide RTNDT (projected) values. Action Items enclosed in TNO-84403			
TXX-4069 Letter from H.C. Schmidt to Youngblood; NRC	2/29/84	CPSES Docket Nos. 50-445 & 50-446. Transmittal of Leak-Before-Break Analysis. (Postulated RCS Pipe Breaks)	S. Smith 2/29/84	84-003 3/28/84	3/29/84	NONE	NA	NA	3/28/84
Proposed Rule change 10CFR50	2/24/84	Analysis of Potential Pressurized Thermal Shock Events. Fed. Reg. Vol. 49 Memo: Bullock to Kahler	S. Smith 3/5/84	84-004 3/14/84	3/7/84	See LCR 84-002 for action Items			
Generic Letter 84-04	3/5/84	Safety Evaluation of Westinghouse Topical Reports Dealing with Elimination of Postulated Pipe Breaks in PWR Primary Main Loops	S. Smith 3/5/84	84-005 3-26-84	3/29/84	Provide technical Data to NRC for relief from GDC-4. Bob Profio taking lead for Licensing.	NA	NA	3-26-84
NRC Letter 10 CFR 20 10 CFR 61	3/6/84	Additional Guidance on the Implementation of 10 CFR 61	R. Jeanes 3/6/84	84-006 3/12/84	NA	Station Radwaste Group should Review Procedures for compliance with this document	3/12/84	84401	3/12/84
Board Notification 84-039	3/5/84	FIRE Research Results Concerning Fires in Electrical Cabinets in the Control Rm.	J.L. Montgomery 3-19-84	84-007 3-21-84	NA	Immediate action not required pending NRC staff study	NA	NA	3/23/84
IE B 84-02	3/22/84	Failures of General Electric Type HFA Relays in use in Class 1E Safety Systems	J.L. Montgomery 3-23-84	84-008 3-26-84	7/9/84	Implement applicable action items in 3, 2, 4 sequence.	7/2/84	841014	7/2/84
Fed. Register 10 CFR 50 3/15/84	3/21/84	10CFR 50 Codes and Standards for Nuclear Power Plants Final Rule	E. Lyons 4/3/84	84-009 4/11/84	NA	NONE	NA	NA	4/11/84
Fed. Register 10CFR50 3/7/84	3/16/84	EQ of Electrical Equipment 10 CFR 50, Removal of June 30, 1982 Deadline	B. Haynes 4/11/84	84-010 4/13/84	5/1/84	NONE	NA	NA	4/13/84

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1. Independent Review and Analysis of Comanche Peak QA Records Management System (RMS) performed by Ebasco
   Report dated June 29, 1981

2. Report by Fred Lobbin - December 1981-January 1982

3. Inhouse Evaluation to INPO Criteria (2/82)

4. INPO Evaluation by Sargent & Lundy - October 1982

5. NRC's CAT 1983

6. Cygna 1983 Independent Assessment Program Phase 1, 2, and 3

7. ASME, National Board, Hartford audits of Brown & Root

JUMA audit scheduled for 1985

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NEW PROCEDURE AFTER 1983 AUDIT

BISCO Project 3141

COMANCHE PEAK STEAM ELECTRIC STATION
TEXAS UTILITIES SERVICES, INC.

#238-3

FOR INFORMATION ONLY

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COMANCHE PEAK STEAM ELECTRIC STATION
TEXAS UTILITIES SERVICES, INC.

FOR INFORMATION ONLY

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~~DRSP~~
SPhillips

In Reply Refer To:
Dockets: 50-445/84-32
50-446/84-11

FEB 15 1985

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

Gentlemen:

This refers to the inspection conducted under the Resident Inspection Program by Mr. H. S. Phillips of this office and NRC contract personnel during the period August 20, 1984, through September 20, 1984, of activities authorized by NRC Construction Permits CPPR-126 and CPPR-127 for the Comanche Peak facility, Units 1 and 2, and to the discussion of our findings with Mr. D. Chapman and other members of your staff at the conclusion of the inspection.

Areas examined during the inspection included a review and evaluation of how effectively Texas Utilities Electric Company management has implemented the corporate quality assurance (QA) program for design, procurement, and construction activities. Special emphasis was placed on evaluating the management of the audit program; management's action to regularly review the status and adequacy of the QA program; and followup on findings pertinent to program management identified by previous NRC and consultant inspection teams. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspectors. These findings are documented in the enclosed inspection report.

During this inspection, it was found that certain of your activities were in violation of NRC requirements. Consequently, you are required to respond to this violation, in writing, in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Your response should be based on the specifics contained in the Notice of Violation enclosed with this letter.

These violations may be related to findings identified by the NRC Technical Review Team (TRT). If the issues are considered to be similar, you may respond to the items separately or as part of the Comanche Peak Response Team Action Plan.

RRI	TL/TF	D/DRS&S	C/RPB2	D/DRS&P	NRR
SPhillips/lt	DHunnicutt	RBangart	DHunter	RDenise	Noonan
2/12/85	2/12/85	/84	2/12/85	2/20/84	12/20/84

IE01

FOIA-85-151

8502220325 2pp

A/92

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

Sincerely,

"Original Signed by:
D. M. HUNNICUTT"

D. R. Hunter, Chief
Reactor Project Branch 2

Enclosure:
1. Appendix A - Notice of Violation
2. Appendix B - NRC Inspection Report
   50-445/84-32
   50-446/84-11

cc w/enclosure:

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

Texas Utilities Electric Company
ATTN: J. W. Beck, Manager
Nuclear Services
Skyway Tower
400 North Olive Street
Lock Box 81
Dallas, Texas 75201

bcc to DMB (IE01)

bcc distrib. by RIV:
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Juanita Ellis
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Billie Pirner Garde
S. Phillips

APPENDIX A

NOTICE OF VIOLATION

Texas Utilities Electric Company
Comanche Peak Steam Electric Station, Units 1 and 2

Dockets: 50-445/84-32
50-446/84-11

Construction Permits: CPPR-126
CPPR-127

Based on the results of an NRC inspection conducted during the period of August 20, 1984, through September 20, 1984, and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 49 FR 8583, dated March 8, 1984, the following violations were identified:

1. Failure to Regularly Review the Status and Adequacy of the QA Program

Criterion II of Appendix B to 10 CFR 50, as implemented by the Preliminary Safety Analysis Report (PSAR) and the Final Safety Analysis Report (FSAR), Section 17.1, "Quality Assurance Program," and ANSI N45.2-1971, requires that the quality assurance program shall provide for the regular review by the management participating in the program, of the status and adequacy of the part of the quality assurance program for which they have designated responsibility.

Contrary to the above, the applicant did not establish quality assurance procedures to regularly review the status and adequacy of the construction quality assurance program; nor did the applicant appear to have reviewed the status and adequacy of the construction quality assurance program.

This is a Severity Level IV Violation. (Supplement II) (445/8432-02; 446/8411-02)

2. Failure to Establish and Implement a Comprehensive System of Planned and Periodic Audits

Criterion XVIII of Appendix B to 10 CFR 50, states, in part, "A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program." The requirements are addressed in the PSAR and FSAR, Section 17.1, "Quality Assurance Program," which references Regulatory Guide 1.28 (ANSI N45.2) and ANSI N45.2.12 (Draft 3, Revision 4). Those commitments require that a comprehensive system of planned audits be performed on an annual frequency.

Contrary to the above, the following examples were identified which demonstrate the failure to establish and implement a comprehensive system of planned and periodic audits of safety-related activities as required, as noted below:

a. Annual audits were not adequately addressed by the audit implementation procedures.

- TUGCO Procedure DQP-CS-4, Revision 0, dated August 9, 1978, only required two audits of vendors fabricating reactor coolant pressure boundary components, parts, and equipment; one audit of vendors fabricating engineered safeguards components, parts, and equipment; and audits of balance of plant (safety-related) as required by the quality assurance manager.

- TUGCO Procedure DQP-CS-4, Revision 2, dated April 16, 1981, required only that organizations will be audited on a regularly scheduled basis.

- TUGCO Procedure DQP-CS-4, Revisions 2 and 10, did not specify auditing frequencies for design, procurement, construction, and operations activities.

- TUGCO Procedure DQP-CS-4, Revision 10, based audit requirements on Regulatory Guide 1.33, Revision 2, February 1978. This commitment did not fully address the requirements of the construction quality assurance program.

The above procedure and subsequent revisions failed to describe and require annual audits in accordance with commitments and requirements. Earlier audit procedures were not available to determine if they met requirements.

b. Planning and staffing to perform 1983 audits was inadequate to assure that a comprehensive system of audits was established and implemented to verify compliance with all aspects of the quality assurance program, in that, of 656 safety-related procedures (which control safety-related activities) the NRC review revealed that the applicant sampled only 165, or 25 percent, during the 1983 audit program. Consequently, significant aspects of the safety-related activities were not adequately audited.

c. The Westinghouse site organization, established in 1977 to perform Nuclear Steam System Supply (NSSS) engineering services, was not audited by TUGCO during the years of 1977, 1978, 1979, 1980, and 1981.

d. Audits of vendors that manufacture or fabricate parts, components, and equipment for reactor coolant pressure boundary and engineered safeguards systems have not been conducted annually dating back to August 9, 1978.

This is a Severity Level IV Violation. (Supplement II) (445/8432-03; 446/8411-03)

3. Failure to Properly Certify a Vendor Compliance Inspector

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

TUGCO Procedure DQP-VC-4, Revision 6, dated January 5, 1984, requires that Level II inspectors (Corporate QA) shall attend and satisfactorily complete nondestructive testing courses including eddy current testing.

Contrary to the above, one of six inspector's files had no documentation to show that the inspector had attended and completed an eddy current testing course. Subsequent, discussions revealed that he had been certified without meeting this requirement. The vendor compliance supervisor stated that this inspection skill is not needed since there is no present vendor work activity which would require this skill; therefore, this procedure was revised and the requirement omitted during this inspection.

This is a Severity Level V Violation. (Supplement II) (445/8432-05; 446/8411-05)

Pursuant to the provisions of 10 CFR 2.201, Texas Utilities Electric Company is hereby required to submit to this office, within 30 days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

Dated: _____

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-32
50-446/84-11

Construction Permit: CPPR-126
CPPR-127

Dockets: 50-445
50-446

Category: A2

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

Facility Name: Comanche Peak Steam Electric Station (CPSES), Units 1 and 2

Inspection At: Dallas Corporate Office, Dallas, Texas

Inspection Conducted: August 20, 1984 through September 20, 1984

Inspector: H. S. Phillips 1/11/85
H. S. Phillips, Senior Resident Reactor Inspector Construction — Date

NRC Contract Personnel:

B. Freed, Senior Project Engineer, EG&G Idaho, Inc.
G. Thomas, Quality Engineer, EG&G Idaho, Inc.

Approved: D. M. Hunnicutt 11/23/84
D. M. Hunnicutt, Team Leader Region IV Task Force — Date

Inspection Summary

Inspection Conducted August 20 through September 20, 1984 (Report 50-445/84-32; 50-446/84-11)

Areas Inspected: Routine, announced inspection to determine how effectively corporate management has implemented the QA program for controlling design, procurement, and construction activities; and to determine how site management interfaces with corporate management. The inspection involved 74 inspector-hours by one NRC inspector and 176 inspector-hours by two NRC contract personnel at the corporate office and the site.

Results: Within the two areas inspected, three violations were identified (failure to regularly review the status and adequacy of the QA program - paragraph 2b.; failure to establish/implement a comprehensive system of planned and periodic audits - paragraphs 2c.(1) and 2d.(3)(a); and failure to properly certify a Level II vendor compliance inspector, - paragraph 2d.(3)(f).

DETAILS

1. Persons Contacted

W. Clements, Vice President Nuclear Operations, Texas Utilities Generating Company (TUGCO)
*D. M. Chapman, Manager, Quality Assurance (QA), TUGCO
*R. G. Spangler, Supervisor, QA Services, TUGCO
*D. L. Anderson, Supervisor, QA Audits, TUGCO
A. H. Boren, Supervisor, Vendor Compliance, TUGCO
*S. L. Spencer, QA Auditor, TUGCO
D. Z. Hathcock, QA Auditor, TUGCO
H. R. Napper, QA Auditor, TUGCO
A. Vega, Site QA Manager, TUGCO
L. M. Bielfeldt, Supervisor, Quality Engineering, TUGCO
C. Welch, Supervisor, QA, TUGCO
J. H. Roberts, Supervisor, Construction/Startup, TUGCO
J. T. Merritt, Assistant Manager, Engineering and Construction, TUGCO
R. Gentry, Manager, Project Support Services, TUGCO
F. Peyton, Supervisor, Purchasing, TUGCO
M. Strange, Supervisor, Engineering Support, TUGCO
R. Baker, Staff Engineer, TUGCO
H. Harrison, Supervisor, Technical Services, TUGCO
G. Krishnan, Supervisor Stress Analysis Group, TUGCO
R. Williams, Drafting Supervisor, TUGCO
G. Purdy, Site QA Manager, Brown & Root Inc. (B&R)
R. L. Moller, Site Manager, Westinghouse

*Denotes those attending one or more exit interviews.

2. Texas Utilities Management of QA Activities

a. Introduction

The objective of this inspection was to determine the status of the construction QA program and the effectiveness of implementation of the corporate QA program for ongoing design, procurement, and construction activities.

The NRC inspectors reviewed the QA commitments described in Section 17.1, "Quality Assurance During Design and Construction." Texas Utilities Electric Company (TUEC), as the applicant, has delegated to Texas Utilities Generating Company (TUGCO) the responsibility and authority for engineering, design, procurement, construction, operation, and QA activities at Comanche Peak Steam Electrical Station (CPSES). Gibbs & Hill Inc. (G&H), is the Architect-Engineer (AE) and provides TUGCO with design, engineering, and procurement services as requested. Westinghouse (W) is the Nuclear Steam Supply System (NSSS) supplier and provides TUGCO with the design, engineering, procurement and fabrication services for the NSSS and the initial supply of nuclear fuel. Brown and Root, Inc.

(B&R) is the Construction Manager/Constructor and provides construction services at the site, including the QA program for ASME Division 1 Code work.

b. Organization

The TUGCO corporate management structure and responsibilities were described in the Final Safety Analysis Report (FSAR); and the various TUGCO QA manuals and procedures described how FSAR requirements were implemented to control design, procurement, and construction activities. Recent organizational changes pertaining to the QA program were described in FSAR figures 17.1-1, 17.1-2, 17.1-3, 17.1-4, and 17.1-5 which were included in Amendment 50 dated July 13, 1984.

Recently, there have been three important QA personnel changes. A new site QA manager reported in March 1984, a new site quality engineering supervisor reported in August 1984, and a new vendor compliance supervisor was recently selected. These organizational changes were made to replace individuals who were reassigned or promoted to other positions, and these changes were reported to the NRC. The independence and effectiveness of the QA effort do not appear to be adversely affected by these changes.

The assistant project general (APG) manager reports to both the VP of engineering and construction and to the TUGCO Executive VP of operations. Discussions with the APG manager confirmed this and that he was supervised by both. This management practice is questionable. The CPSES QA Plan Section 1.2, paragraph 1.2.1, does not describe the APG manager's interface with or the responsibility to the VP nuclear operations. Subsequent discussions with TUGCO QA personnel revealed that this position was discussed in the startup QA manual. This item is considered unresolved pending clarification of the QA plan and further review during a subsequent inspection. (445/8432-01; 446/8411-01)

c. QA Program

TUGCO QA Program Plan and subtier procedures for design, construction, engineering, and procurement described the control of all related project and quality activities. A sample of these procedures were reviewed and documented in NRC Inspection Report No. 50-445/84-22; 50-446/84-07.

The Quality Assurance Program (described in the FSAR) provided the delegation of design, engineering, construction, and procurement functions to prime contractors, subcontractors, and vendors. It stated that the TUGCO audit program assured that these organizations had adequate QA programs and verified implementation of the overall QA program within TUGCO.

The inspectors reviewed the QA program procedures and any objective evidence to determine if the applicant regularly reviewed the status and adequacy of the QA program as required by Criterion II of Appendix B to 10 CFR 50, the PSAR and FSAR, and ANSI N45.2-1971. Reviews and discussions revealed no documented requirements or evidence that the QA program status and adequacy had been reviewed by the applicant. In order to determine if the QA program had been assessed, the inspectors reviewed additional information. In late 1981 and 1982 audits were performed by a consultant (Fred Lobbin), by Sargent and Lundy (using INPO criteria), and by TUGCO (using INPO criteria). Each of these audits evaluated limited aspects of the QA program. In 1983 Cygna evaluated the design program.

The Lobbin Report (February 4, 1982) R-82-01, contained four major findings:

- level of experience within the TUGCO QA organization is low; i.e., commercial nuclear plant design and construction QA experience;
- staffing for the audit and surveillance functions is inadequate;
- the number and scope of design and construction audits conducted by TUGCO QA to date has been limited; and
- QA management has not defined clearly the objectives for the surveillance program resulting in a program which, in the author's (Lobbin) opinion "is presently ineffective."

The TUGCO QA manager responded to these findings in an office memorandum (QBC-18), dated February 23, 1982. This response basically concurred with these findings.

The response committed to recruit nuclear experienced individuals, to increase the number and scope of site audits, and to more effectively use the surveillance program. Two program reports (QBC-25 and [illegible]) regarding these matters were issued from the QA manager to the VP nuclear operations on May 21 and August 31, 1982, respectively.

Following the Lobbin Report, the NRC performed a CAT inspection (IR 445/83-18; 446/83-12 dated April 11, 1983) and included a review of the TUGCO audit program at the corporate offices. The inspection included a review of 18 audits (conducted between 1978 and early 1983), auditor qualifications, audit planning and scheduling, audit reporting and followup, and audit program effectiveness. The report concluded that weaknesses existed in the established QA audit program and included the scheduling and frequency of audits, the lack of effective monitoring of the construction program, and the lack of effective resolution of certain audit findings. The inspection also indicated that the QA program should have been more effective.

Based on the findings in the Lobbin report, and the findings in the NRC CAT report, the QA program continues to exhibit weaknesses. The continuing weaknesses in the QA program over a significant period of time reinforce the need for the applicant to routinely assess the status and adequacy of the QA program routinely to ensure that the areas are identified and adequate and timely corrective action is taken to correct the QA program weaknesses.

The failure to regularly review the status and adequacy of the QA program as required is a violation of Criterion II of Appendix B to 10 CFR 50. (445/8432-02; 446/8411-02)

d. Management of the TUGCO Audit Program

(1) Program Requirements

FSAR Subsections 17.1.2, "QA Program," and 17.1.18, "Audits," require internal audits of (TUGCO corporate and site activities) and external audits (prime contractors, subcontractors and vendors) to evaluate the effectiveness of the QA program by verifying conformance with design requirements; compliance with established requirements, methods and procedures; and implementation of corrective action. These commitments require the establishment and implementation of a comprehensive system of planned and periodic audits of all aspects of the QA program.

The TUGCO audit program consisted of internal and external audits of design, construction, engineering, and procurement activities. TUGCO also retained responsibility for the external audits that were usually delegated to the AE and NSSS organizations; i.e., audit of vendors. In addition to construction and vendor audits, the TUGCO audit group was also responsible for performing preoperational/startup and plant operation audits.

TUGCO committed to the audit requirements of ANSI N45.2.12-1973, Draft 3, Revision 0, Section 3, "Audit System," and these program management objectives are:

- to determine that a QA program has been developed and documented in accordance with applicable requirements;
- to verify that the program has been implemented,
- to assess program effectiveness;
- to identify program nonconformance; and
- to verify program correction where appropriate.

This section also stated that to achieve these ANSI standard objectives full management backing, manpower, funding, and facilities shall be available to implement the system of audits.

(2) NRC Evaluation of Planning/Implementation of Program

The NRC inspector reviewed and evaluated the applicant's plans, procedures, and number of audits performed (see paragraph 2e below) and determined that planning was inadequate. This audit effort was too large for the four available TUGCO auditors in 1981, even though additional specialists were utilized to assist with the audit activities.

(a) The inspector reviewed and evaluated planning documents (formal and informal) used by the TUGCO QA manager, supervisor QA services, and supervisor QA audits. The review and discussions with these individuals revealed that annual audit plans were based on the audit of organizations rather than activities. TUGCO Audit Procedure DQP-CS-4, Revision 0, dated August 9, 1978 required:

- semiannual internal audits,
- semiannual construction audits,
- annual AE audits,
- annual NSSS audits, and
- annual plant operation audits.

However, for vendor audits the procedure required:

- first audit at 15 percent; and second audit at 60 percent "item completion" by reactor coolant pressure boundary vendors;
- one audit of engineered safeguards vendors at 25 percent item completion; and
- audit of balance of plant (other safety-related) vendors as determined by the manager QA.

This does not meet the requirements of paragraphs 3.4.1 and 3.4.2 "Scheduling," of ANSI N45.2.12 which requires, "Auditing be initiated as early in the life of the activity as practicable . . . applicable elements of the QA program shall be audited at least annually or at least once within the life of the activity whichever is shorter."

Furthermore, Audit Procedure DQP-CS-4, Revision 2, April 16, 1981, and Revision 10, June 4, 1984, have further reduced the (scheduling) frequency of audits. Revision 10 now states, in part, "3.2.1, The following organizations will be audited on a regularly scheduled basis but in accordance with Regulatory Guide (RG) 1.33, Revision 2, January 1978, Regulatory Position 4: a. AE; b. NSSS; c. constructor; d. TUGCO Internal; e. Preoperational/Startup; f. Plant Operations; g. Subcontractor. . . 3.2.1 In lieu of regularly scheduled audits of vendors TUGCO QA will perform the following: a. Monitor the individual vendor ratings which are based on vendor performance . . . b. for those vendors who cannot be evaluated based on vendor ratings . . . regularly scheduled audits will be performed based on level of activity." The NRC inspector discussed with TUGCO management the fact that RG 1.33 is for operations and does not fully address the requirements of the construction QA program.

This failure to develop audit program procedures which adequately address and describe QA program requirements and commitments is a violation of Appendix B, 10 CFR Part 50, Criterion XVIII (445/8432-03a; 446/8411-03a).

(b) In addition to evaluating to determine if annual audits were planned, the NRC inspector requested objective evidence which would demonstrate that planning for audits for calendar years 1983 and 1984 included a method to verify compliance with all aspects of the QA program and to determine the effectiveness of the QA program. The review of the objective evidence revealed that the planning was not adequate, particularly regarding the audit basis, status, and tracking. The only objective evidence available consisted of a listing of planned audits of internal organizations and contractors each year and a summary of 1983 audit results and criteria audited; however, this data in many cases did not list the criteria audited and while reviewing older audits it was noted that an "after the fact" review resulted in identifying the applicable criteria covered for various organizations.

The inspector requested a listing of selected site procedures which were in effect in 1983 that were representative of site safety-related activities and subject to audit by TUGCO corporate QA. The review of the listings provided and the 1983 audits revealed the following information:

Audits of Procedures	Total Procedures	Procedures Audited/Referenced	% Audited in 1983
TUGCO Quality Documents Index (December 20, 1983)	295	71	24
TUSI Engineering Instruction Index (December 2, 1983)	65	16	25
TUSI Nuclear Engineering Procedures/Instructions Index (September 26, 1983)	26	18	69
TUSI Engineering Procedures Index (November 4, 1983)	30	12	40
B&R Quality Document Index (November 22, 1983)	51	20	39
B&R Construction Procedures Index (June 20, 1983)	189	28	15
Total	656	165	25

Only 25 percent of the procedures (specific safety-related activities) were audited in 1983. Although audits on a sampling basis are acceptable, there was no evidence that all safety-related areas were audited. The audits did not encompass all aspects of the QA program in order to determine effectiveness.

The failure to properly plan or produce evidence of adequate planning for a comprehensive audit program to verify compliance with all aspects of the QA program resulted in the failure to audit significant parts of the QA program is a violation of Criterion XVIII of Appendix E to 10 CFR 50 (445/8432-03b; 446/8411-03b).

The NRC inspector contacted the Westinghous (W) site manager to review the procedure listing for safety-related activities which TUGCO had audited. As indicated below, no audits of NSSS site activities were performed in 1983. Discussions with the (W) site manager revealed that no audits had been performed by TUGCO QA in 1977, 1978, 1979, 1980, or 1981. This was discussed with the TUGCO audit staff and QA manager who did not disagree with the stated audit frequency.

(W) Site Organization External Procedures	Total Procedures	Procedures Audited/Referenced	% Audited in 1983
Westinghouse Site Applicable Procedure, QA Manual, May 83	18	-0-	-0-
PPD Procedures	14	-0-	-0-
Installation Procedures	29	-0-	-0-

The failure to audit (W) procedures (safety-related activities) annually as required by ANSI N45.2.12, Draft 3, Revision 0, of the QA program is a violation of Criterion XVIII of Appendix B to 10 CFR Part 50, (445/8432-03c; 446/8411-03c).

(c) The NRC inspector discussed The staffing of the Audit Program with TUGCO QA management the findings of the Lobbin Report and the NRC CAT Team Report regarding the staffing of the audit functions. The discussions revealed that the TUGCO audit staff had been increased from 4 to the present number of 12 between 1982 and 1984, and TUGCO management has been looking for 3 or 4 additional nuclear experienced auditors to further increase the audit staff. However, it was also revealed that management had not determined the total audits required nor the manpower needed to accomplish the audits.

This matter is an unresolved item pending the determination of the number of audits and auditors that will be needed to effectively implement the audit program (445/8432-04; 446/8411-04).

(d) The NRC inspector determined through review of charts and procedures that current organization provided organizational freedom from cost and schedule.

(e) The NRC inspector evaluated audit personnel qualifications by reviewing 14 personnel files of lead auditors and auditors. This included presently employed and formerly employed auditors. These personnel were qualified as required by TUGCO Procedure DQI-QA-2.1, Revision 7, and ANSI N45.2.23-1978, "Qualification of Quality Program Audit Personnel for Nuclear Power Plants."

(f) The NRC inspectors reviewed TUGCO Audit Procedures DQP-CS-4, Revision 10 (June 4, 1984), and DQI-CS-4.6, Revision 7 (April 13, 1984). As previously discussed in paragraph 2.C(1), DQP-CS-4 does not include adequate commitments to perform annual audits and failed to address both design and construction and plant operations audit requirements.

e. Implementation of the TUGCO Audit Program

The NRC inspectors selected three areas of the audit program to review and evaluate implementation. Results of this evaluation are discussed in the following paragraphs.

(1) Internal Audits of Site Activities - The NRC inspector reviewed the index which showed all site audits and found that Audits TCP-1 through TCP-112 had been performed between March 1978 and August 1984. The number per year are: (1) 4 in 1978; (2) 3 in 1979; (3) 10 in 1980; (4) 11 in 1981; (5) 30 in 1982; (6) 29 in 1983; and (7) 22 during the first 8 months of 1984. After the audit program was found inadequate in the consultant's report (Lobbin), the number of audits increased from less than 1.0 per month in 1982 to 2.5 per month in 1982. After the NRC CAT inspection report in 1983 this number increased to 2.7 per month for the first 8 months of 1984. This indicates that positive action concerning these reported weaknesses was taken; however, as previously discussed objective evidence was not available that the required number of audits and auditors has been identified. This item was previously identified above as unresolved.

The 1983 and 1984 audit schedule included each audit scheduled, cancelled, and any additional audits planned or performed. Where audits were cancelled, they were rescheduled and other audits were added and performed. This effort was well documented.

In 1983 the TUGCO audit group performed 158 audits. Sixty-five internal audits of site activities are as follows:

- construction/QC/ engineering - 33 audits;
- startup - 5 audits; and
- operations - 27 audits.

The NRC inspector selected and reviewed 31 TCP 1983 audits of site activities. The audit files included notification to the organization audited, an audit plan, checklists, an audit report, audit response, and evaluation/closeout of findings. Audit reports reflected good preparation and execution. Substantial findings generally resulted and were resolved.

Several lead auditors were interviewed concerning the management of the TUGCO audit program. They stated that the audit program had weaknesses or deficiencies in 1978 but they had witnessed dramatic improvements and were confident that the audit program was currently working well.

(2) Assurance of Design Control - TUGCO management verified that design was controlled in accordance with the QA program requirements and procedures through administering an effective audit program. The design control functions were delegated to the AE and (W); however, TUGCO was designated the engineering organization responsibility for plant design.

The NRC inspector reviewed and evaluated the results documented in 15 TUGCO internal and external audit reports which specifically relate to Criterion III of 10 CFR Part 50, Appendix B, design and applicable procedures. These represent all audits design and consisted of 8 audits of TUGCO, 3 of (W), and 4 of G&H, engineering organizations. All audit findings, concerns, and deficiencies were closed through correspondence and were later verified through subsequent audits. Management involvement was evident as the VP nuclear operations was on concurrence and was furnished status reports by the QA manager.

In October 1982, TUGCO initiated a special audit effort to review design using the Institute of Nuclear Power Operations (INPO) performance objectives and criteria. Sargent & Lundy personnel were used to perform this audit. This audit identified 13 findings and TUGCO audit No. TNO-2, dated June 1983, verified corrective action.

(3) Assurance Control of Procurement Activities - TUGCO management elected to retain procurement responsibilities except for certain functions delegated to the AE and NSSS. The NRC inspector selected several functions retained by TUGCO to determine if their audit program effectively monitored or verified that procurement activities were accomplished in accordance with the QA program and applicable procurement procedures. Management involvement with procurement documents, bid/source evaluation, and specific QA inputs were reviewed by the inspector. The vendor audits and evaluation of vendors were a large work effort. The following are the results of this review and evaluation.

The NRC Comanche Peak Special Review Team Report dated July 13, 1984, at the site identified a potential violation, i.e., failure to perform annual audits of vendors. The report documented an inspection of the procurement effort at site and part of this inspection included determining the frequency of vendor audits. As a result of the special inspection, the TUGCO QA manager approved an FSAR change request, dated August 3, 1984, which asked that TUGCO be allowed to adopt NRC RG 1.144 audit requirements in lieu of ANSI N45.2.12, Draft 3, Revision 0, for construction and ANSI N45.2.12, Draft 4, Revision 2 for operations. This requested change would not change the requirement to perform internal audits annually but

would reduce the requirement to perform annual audits of suppliers. Considering this requested QA program change which had not been approved by the NRC, the following are the inspection results:

(a) The NRC inspector reviewed the TUGCO vendor audit program for 1983 to determine compliance with commitments (FSAR Section 17, paragraph 17.1.18), ANSI N45.2.12 and TUGCO procedures DQP-CS-4 and DQI-CS-4.5.

The annual audit schedule revealed that 60 vendor audits were scheduled during 1983. Audit TCLC-2 was cancelled (lack of activity with Purchase Order CPC-307) and audit TBS-3 was rescheduled (delayed by 1 week) as a result of NRC CAT Team inspection findings. The NRC inspector selected 3 vendor audit files, TVO-1, TMM-3, and TBF-2, for review to determine the extent of the audits as applicable to the audit plan checklist, noted deficiencies, concerns, and comments. Also included in this review were the corrective actions and/or preventive action documented in writing by the vendor in response to the applicable audit findings. Documents in file closed the audit findings and indicated that followup on corrective action would be verified during the next audit.

The NRC inspector reviewed the vendor audit frequency to determine if TUGCO established a schedule to annually audit vendors. The licensee commitment to ANSI N45.2.12, Draft 3, Revision 0, requires annual audits or at least once within the life of the activity. Neither procedural requirements were established, nor were vendors audited annually.

The failure to establish procedural requirements and to perform annual vendor audits is a violation of Criterion XVIII of 10 CFR Part 50, Appendix B and ANSI N45.2.12, Draft 3, Revision 0 (445/8432-03d; 446/8411-03d).

(b) The NRC inspector reviewed the approved vendors list (AVL) program for 1983 to verify that methods used by TUGCO to qualify vendors to supply safety-related materials, parts, and services were consistent with the QA plan, procedural requirements, and commitments described in ANSI N45.2.13-1976. A review of supplemental memos and preaward survey files and revisions 9 through 12 of the AVL verified that the AVL was current. This review showed 33 additions, 40 status changes, and 1 deletion to the AVL for the period January 24, 1983, through December 20, 1983. The preaward survey files reviewed were consistent with

Procedures DQP-CS-4, Revision 10, and DQI-CS-4.2, Revision 3, December 1, 1982. During the review of preaward survey files, the inspector confirmed that formal identification letters, the survey date, and the scope of the survey (checklist) were consistent with the vendor QA program. Also, the corrective action responses by the supplier concerning noted deficiencies, concerns, and comments were reviewed, and followup action verified in a subsequent audit.

(c) The NRC inspector reviewed the vendor performance evaluation (VPE) system to determine compliance with commitment and procedural requirements. TUGCO Procedure DQP-CS-4.3, paragraph 1.1 stated that the purpose of the evaluation was to establish a comprehensive method of identifying system weaknesses in vendor QA programs through acceptable/unacceptable hardware information generated as a result of vendor release inspections. The VPE files included release inspection trip report cover sheets, vendor rating sheets, releases, and the inspection checklists as required by TUGCO Procedure DQI-CS-4.3, Revision 4, paragraph 3.1.

The NRC inspector reviewed 3 VPE packages to determine that the quality assurance services (QAS) group's review was consistent with procedural requirements. One vendor file (Paul Monroe Hydraulic) was still active pending engineering review and evaluation on the O-ring discrepancy identified during release inspection at Remo Hydraulics (Purchase Order CPF-11436-S issued to Paul Monroe Hydraulics) for 20 hydraulic snubber assemblies. As required by DQP-VC-3, one vendor package (Meddco Metals) was being held on a yellow flag sheet to alert TUGCO auditors of next request for release so that TUGCO auditors could accompany the TUGCO vendor compliance inspector to resurvey the vendor. One other vendor (Volumetrics) performance evaluation record was reviewed and it showed a vendor rating of greater than 90. The NRC inspector interviewed the QA audit supervisor to determine what objective evidence (as required by referenced TUGCO Procedure DQI-CS-4.3, paragraph 3.2) was used to perform the vendor evaluation and support vendor ratings. Preaward surveys, previous audits, and receiving inspection reports were used as objective evidence to give the rating.

The NRC inspector reviewed the receiving inspection activity for previous release inspection shipments relative to the aforementioned vendors. Receipt inspection consisted of shipping damage inspection, receipt of documentation, identification, and quality assurance release.

(d) The NRC inspector reviewed the method by which the licensee performed source selection to determine that procedural requirements were met. QA plan Section 4.0, Revision 4, July 31, 1984, required that a purchase order for safety-related items not be issued to a vendor unless TUGCO QA had reviewed and accepted the purchase order; i.e., QA determines whether QA provisions are adequate and determines that a preaward evaluation recommends selection of the vendor.

When procurement solicited bids outside the AVL, TUGCO QA requested that an uncontrolled copy of the vendors quality assurance manual be sent with the bid response. In the event of a positive bid response from the unapproved supplier, the TUGCO procurement group forwards the QAM and a request for QA program evaluation, Form QA-VE, to the TUGCO QA audit group supervisor to initiate a preaward survey per QA Procedure DQT-CS-4.4, paragraph 3.1. However, until the preaward survey is completed and a supplemental memo has been issued by the audit group supervisor, no further procurement action was taken.

The NRC inspector reviewed the actions taken when an acceptable bidder takes exceptions to the purchase order or subcontract. Upon receipt of the exception, procurement filled out an expediting request, assigns a procurement log number, and forwarded this request to the field requisition originator for engineering review and evaluation. Should the engineering group allow the exception, the necessary actions; i.e., design changes, were initiated. The expediting request was returned to procurement accompanied by a field requisition documenting the change with the approval signatures of engineering and QA.

(e) The NRC inspector reviewed the method by which TUGCO performed vendor item acceptance of safety-related materials, parts, and components. TUGCO Procedure DQP-VC-1, Revision 8, June 4, 1984, paragraph 1.1, specified that the purpose was to establish guidelines for performing final inspection and release of TUGCO purchased equipment and applies to both safety-related and nonsafety-related equipment. This procedure allowed for a waiver, in which case the inspection checklist applicable to the procurement specification became the responsibility of CPSES receiving inspection as described in B&R CPSES Procedure CP-QAP-8.1, Revision 8, June 11, 1984, paragraph 3.4.1

(f) The NRC inspector reviewed six vendor compliance inspector's files to determine if training/certification

records met the requirements of ANSI N45.2.6-1978 and TUGCO Procedure DQP-VC-4, "Guidelines for Certifying Vendor Compliance Personnel." Section 3.2.2 states that a Level II inspector shall attend and satisfactorily complete the nondestructive examination (NDE) courses. One inspector had not completed all of the NDE courses but had been certified. This finding was discussed with the vendor compliance supervisor who stated that there is no real need for certification in eddy current testing since inspectors do not utilize this NDE technique and the requirements would therefore be deleted from the procedure. The NRC inspector verified the deletion of this requirement and procedural revision during this inspection.

The failure to certify the inspector in accordance with the procedure is a violation of Criterion V of Appendix B to 10 CFR 50 (445/8432-05; 446/8411-05).

No other violations or deviations were identified.

3. TUGCO Corporate QA - Site QA Activities Interface

Appendix B to 10 CFR Part 50 requires TUGCO to establish proper organizational and management interfaces, and procedures must describe how various organizations coordinate and communicate design, procurement, engineering, construction, and QA/control activities and information. The following paragraphs describe inspection of this requirement.

a. Site Organization

TUGCO Procedure CP-QP-3.0, Revision 15, July 30, 1984, described the site QA organization for design and construction. This organization consisted of a site QA manager, QA supervisor, and a QC supervisor. The site group performed no audit function, however, they did perform QA surveillances. The site group consisted of 13 QA/QC managers and more than 150 lead/QC inspectors and quality engineers. These personnel inspected non-ASME work.

B&R QA manual and implementing Procedure CP-QAP-03.01, Revision 6, described their responsibilities for QA/QC and construction activities pertaining to ASME work. This organization consisted of a QA manager, QE supervisor, and a QC supervisor. The total QA/QC work force involved with design/construction activities was approximately 100.

Several other site subcontractors such as Bahnson, Brand Industrial Services, Inc., and Chicago Bridge and Iron, have small QA groups on site and, as is the case with B&R, these organizations were audited by their respective corporate offices.

The NRC inspector interviewed the TUGCO site QA manager to determine how the site QA group interfaced with the corporate QA office. He stated that daily conversations occur between managers of these organizations, however, he did not make written summary reports. Quarterly trending reports which analyze reported nonconformances and deficiencies are sent to the corporate QA manager.

b. Site Surveillances

The NRC inspector noted that surveillances were briefly mentioned in TUGCO Procedure DQP-CS-4, Revision 10; however, there was no mention of how or if the surveillances would be used to complement the audit program. During discussions with the QA manager and other personnel, it was revealed that procedures were not tracked to assure that all were audited. The present audit staff could not audit all site procedures annually. The NRC inspector pointed out that the surveillance function may complement and be used to (1) check that all procedures are implemented; (2) identify nonconforming trends; and (3) to feed potentially deficient or weak areas to the audit group which could, in turn, factor this information into the audit program. Audit priorities could then be established and the audit personnel could be more effectively used.

TUGCO Surveillance Procedures CP-QP-11.2, 19.3, 19.4, 19.5, 19.6, 19.7, 20.0, and 27.0 described the surveillances of specific activities; however, no general procedure which describes the overall surveillance program was provided. The present program did not appear to have sufficient purpose, direction, coordination, and feedback in relationship with the overall QA program. Furthermore, the inspection revealed that the surveillance staff had been reduced from a supervisor and eight technical personnel to four technical personnel. Considering the Lobbin Report this reduction of surveillance effort may not be a prudent action.

As noted in the findings in the Lobbin Report; i.e., QA management had not clearly defined the objectives and scope of the surveillance program, it appeared that TUGCO needed to strengthen the surveillance program. The TUGCO management decision to commit to a surveillance program was a strength, but this lack of purpose and direction and support was a program weakness.

Additionally, the surveillance group was no longer observing work in Unit 1 but will now place most of their effort on Unit 2 construction activities.

This matter is considered unresolved pending clarification of the audit and surveillance program effort and further review during a subsequent inspection (445/8432-06; 446/8411-06).

The NRC inspector randomly selected and reviewed 28 surveillances performed in 1982, 1983, and 1984. Findings and resolutions of these findings were reviewed and in each case, written responses and corrective action were adequate.

c. Site Design Activities

The NRC inspector reviewed and evaluated selected site activities pertaining to design verifications, design changes, design inputs, and control of vendor drawings as follows:

(1) Design Verification - The NRC inspector interviewed the TUGCO supervisor of engineering, support, and other engineering personnel to determine how design verifications were performed, and examined the related procedures, logs, and design verification packages. Authorized design verifiers were maintained on lists and an automated tracking system was in place to assure that all design changes, i.e., design change authorizations/component modification cards (DCA/CMC) were verified. Three design verification reports were reviewed to assure that the design verifier was on the authorized list. Design verifiers were not to be involved in the original design review to assure an independence. It was noted that each DCA/CMC was being reviewed for verification. If there was no authorized signoff, then the design was verified.

Audit TGH-23, conducted during August 1984, concentrated on Unit 1 quality related activities for which onsite G&H design review team had responsibility. The audit involved evaluation of the program established and implemented for site review and processing of changes (CMA and DCC) associated calculations and 287 design review packages were reviewed. No major technical problems were identified during this audit.

(2) Design Changes - The NRC inspector interviewed engineers and draftsmen in TUGCO engineering to determine how design changes were processed and examined the related procedures, files, reports, and tracking systems. A master list was maintained identifying those individuals who were authorized to approve design changes and G&H updates this list by memo. The NRC review of three design review files verified that the reviewers were on the authorized list.

The NRC inspector also reviewed the method used to incorporate field changes (DCA/CMC) into related drawings and the subsequent review, approval, and incorporation of changes into as-built drawings. One observation required additional discussions. The drafting supervisor's (piping support) authority to incorporate a change into a drawing was transmitted and signed by a clerk. This was clarified as being acceptable by management because it

was in accordance with established procedure (CP-EI 4.6-8, paragraph 3.3) and also, as a final control, the as-built drawing was reviewed and approved by an authorized project engineer prior to release.

The NRC inspector examined how the TUGCO administrative services group handled NRC IE Bulletins, Circulars, and Information Notices. These documents were coordinated by the operations support department and were distributed to the appropriate TUGCO engineering group for action. Design changes resulting from these inputs were processed in accordance with established design control procedures. Responses from personnel receiving these reports were reviewed to verify that the reports were adequately addressed. Summary reports and log sheets are used to keep management current as to the status of the responses.

An INPO audit of the operating experience review program in 1982 noted the following good practice, "The procedures for handling industry experience are excellent and are expected to provide a firm base for developing an effective industry experience program."

TUGCO QA audit Report TUG-41 was conducted in December 1983 to review implementation of the operations support program for evaluating and responding to NRC IE Bulletins, IE Notices, IE Circulars, and generic letters. The auditors found the program in compliance with procedural requirements and the overall effectiveness of the program appeared to be adequate.

(3) Design Document Control - Two packages were reviewed and these contained evidence of vendor data checklists, indexes, approval letters, and the vendor stamp on drawings was observed.

d. Site Procurement Activities

The NRC inspector determined that the TUGCO procurement function was delegated to the TUGCO site organization. The major procurements occurred several years ago; however, present procurement activities associated with items procured offsite for installation were performed by TUGCO or were contracted to G&H, (W), or B&R who were evaluated and qualified by TUGCO QA. Procurement documents were reviewed, approved, and controlled; and receipt inspection of safety-related items on site was performed in accordance with written procedures and checklists.

The NRC inspector selected two procurement actions for review:

- P.O. CPF-1233-S issued to Combustion-Engineering for the procurement of a heated junction thermocouple system.

- CPF-10469-S issued to Paul Monroe Hydraulics to refurbish four Rockwell International actuators.

Both the procurement actions were reviewed to determine that technical requirements were commensurate with the scope of the procurement and was authenticated by engineering review in accordance with TUGCO engineering division Procedure CP-EP-3.0, Section 2.0(d). Both procurement actions reflected the necessary QA review signatures, as required by TUGCO engineering division Procedure CP-EP-5.0, paragraph 3.1.2; QA Procedure DQP-CS-2, paragraph 3.1.8; and instruction QI-QP 5.0.1. All field requisitions initiated to generate a supplement to the aforementioned purchase orders were reviewed and documented as required by Procedure CP-EP-5.0. Reporting requirements set forth by 10 CFR Part 21 were included in the purchase order. The NRC inspector reviewed and verified that both purchase orders specified that the supplier shall establish provisions for imposing similar QA requirements on applicable subtier vendors.

No violations or deviations were identified.

4. Unresolved Items

Unresolved items are matters about which more information is required in order to determine whether they are acceptable items, items of noncompliance, or deviations. Unresolved items are identified in this report in paragraphs 2.a, 2.c.(2) and 3.b.

5. Exit Interview

The NRC inspector met with members of the TUGCO staff (denoted in paragraph 1) at various times during the course of the inspection. The scope and findings of the inspection were discussed.