

Quality Assurance Program Description
for the
Design and Construction of the
South Texas Project
Revision 6
Principal Changes

Part A, Houston Lighting & Power Company (HL&P QAPD)

°Revision to define responsibilities for trend analysis:

Pages 26 and 27 have been revised to reflect the shift in responsibilities for performance of trend analysis. HL&P Quality Assurance has assumed full responsibility for the evaluation and trending of deficiencies identified by HL&P, BEC and ESI. This change in responsibilities is in response to the Construction Project Evaluation performed on the STP in 1983 and to allow a more comprehensive review through consolidation of the trend effort. Since all deficiency documents previously trended will continue to be trended, this revision does not reduce the commitments previously made in Revisions 4 and 5 of the QAPD.

°Revision to define organizational responsibility for the Chairman of the Incident Review Committee (IRC).

Page 8 has been revised to clarify the organizational affiliation of the Chairman of the IRC. This clarification was made in response to NRC questions on Revision 4 of the QAPD (Ref. Corres. ST-HL-AE-1042). There is no reduction in commitment.

°Revision to clarify HL&P position on application of SNT-TC-1A, 1980 requirements to qualification of NDE personnel.

Pages 22 and 23 have been revised to reflect that approved procedures shall be structured so that recommendations within SNT-TC-1A, 1980 ('shoulds') will be considered mandatory requirements ('shalls') for STP. This clarification compensates for the most significant changes between the 1980 edition and the 1975 edition of SNT-TC-1A to which HL&P was previously committed. This clarification is in response to NRC questions concerning Revision 4 of the QAPD. Additional justification as to the adequacy of HL&P's commitment to SNT-TC-1A, 1980 is provided in the response submitted to the NRC questions on Revision 4 to the QAPD (Ref. correspondence ST-HL-AE-1042). This change does not reduce the commitments made in Revision 4 and 5 of the QAPD.

°Revision to define reportability requirements for deficiencies identified during the startup phase prior to OL.

Page 26 has been revised to state that approved procedures will require that significant deficiencies identified during the startup phase will be reported to HL&P executive management and the NRC in accordance with 10CFR50.55(e) and 10CFR21, when applicable. This change is submitted to alleviate ambiguity surrounding the inclusion of startup as part of the construction phase as expressed in the NRC questions on Revision 4 to the QAPD. This clarification does not reduce commitments contained in Revisions 4 and 5 to the QAPD.

°Revision to provide direction on documents to be trended.

Page 27 was revised to state that approved procedures will specify the specific deficiency documents to be trended. This change was made in response to the NRC questions on Revision 4 of the QAPD concerning trending of Deficiency Notices (DNs). DNs will be trended as designated in the approved trend analysis procedure. This revision does not reduce commitments contained in Revisions 4 and 5 of the QAPD.

°Revision to clarify Level D storage requirements.

Table I-5 was revised to clarify access limits and posting requirements for Level D storage areas. This change was made to eliminate uncertainty in the posting requirements for access control for Level D storage areas. The statement in the QAPD, Revision 4 requiring Level D access controls consistent with Zone IV areas as defined by ANSI N45.2.3, i.e. no personnel accountability, was revised to require posting of storage level designation only in Level D areas. No reduction in commitments contained in Revisions 4 and 5 to the QAPD have been made.

°Revision to describe organizational changes for training responsibilities.

Pages 3, 7, 12 and Figure 1 have been revised to reflect the formation of a centralized Nuclear Training group to direct, coordinate and administer the STP Nuclear Training efforts. This change was made to maximize the use of available training resources and to minimize redundancy inherent in the use of separate, departmental training groups. No reduction in commitments previously contained in Revisions 4 and 5 of the QAPD have been made.

°Revision to incorporate an additional organizational description.

Page 3 has been revised to describe the functions of the Vice President, Nuclear Engineering and Construction. This position description has been added to provide additional detailed information on Senior Management involvement in the engineering, licensing and construction phases of the South Texas Project. There has been no reduction in commitments contained in revisions 4 and 5 of the QAPD.

°Revision to clarify changes in organization titles and reporting functions.

Pages 7, 8 and 9 have been revised to reflect changes in title and/or reporting functions for various positions within the Engineering, Records Management, Construction and Procurement organizations. These changes were made to align the reporting relationships with actual practice. Since these clarifications do not represent responsibility changes in the applicable organizations, no reduction in commitment has been made.

°Revision to clarify basic requirements for procurement activities.

Page 16 has been revised to incorporate ANSI N45.2.13 requirements related to extension of applicable requirements to lower tier subcontractors and suppliers and inclusion of provisions for control of nonconformances within procurement documents. This change provides additional detail on HL&P's commitment to ANSI requirements and does not constitute a reduction in commitments previously contained in revisions 4 and 5 of the QAPD.

°Revision to clarify method utilized by HL&P QA to ensure quality requirements are met.

Page 22 has been revised to specify that assurance that special process control criteria are met is provided by HL&P QA through verification, i.e., audits, surveillances, inspections and document reviews. This change represents a more accurate statement of HL&P's methods of guaranteeing implementation of quality requirements and does not constitute a reduction in commitment.

°Revision to incorporate procedural requirement for control of Inspection, Test and Operating Status Indicators.

Page 26 has been revised to incorporate the requirement of ANSI N45.2, Section 15 to provide procedural control of status indicators. This does not constitute a reduction in commitments previously contained in revisions 4 and 5 of the QAPD.

°Revision to incorporate additional Nonconformance approval.

Page 26 was revised to require signature for final closeout on nonconformance reports. This requirement was incorporated from the HL&P Nuclear Quality Assurance Program Manual and does not constitute a reduction in commitment.

°Revision to clarify edition of NFPA Number 232 committed to.

Page 27 was revised to specify the edition of NFPA number 232 that will be met for a two-hour rated fire resistant file room. Revisions 4 and 5 of the QAPD did not specify an edition. This clarification does not constitute a reduction in commitment.

°Revision to clarify responsibilities for coordinating Westinghouse (W) disposition approval on nonconformances involving W.

Page 26 has been revised to clarify that the organization responsible for providing a disposition NCRs written against W will obtain the necessary W concurrence. This responsibility was formerly assigned to HL&P and has been revised to reflect actual practice. Since W concurrence is still obtained on NCRs issued to W, no reduction in commitment has occurred.

Part B, Bechtel QAPD for South Texas Project

°Revision to clarify a definition involving Division Quality Policies.

Page 4 of the Introduction has been revised to allow greater flexibility in modifying, deleting, or supplementing Division Quality Policies to meet the requirements of individual projects. No reduction in commitments contained in revisions 4 and 5 of the QAPD has been made.

°Revision to clarify Level D storage requirements.

Appendix A, Page A-4 was revised to clarify access limits and posting requirements for Level D storage areas. This change was made to eliminate uncertainty in the posting requirements for access control for Level D storage areas. The statement in the QAPD, Revision 4, requiring Level D access controls consistent with Zone IV areas as defined by ANSI N45.2.3, i.e. no personnel accountability, was revised to require posting of storage level designation only in Level D areas. No reduction in commitments contained in revisions 4 and 5 to the QAPD have been made.

Part C, Ebasco Nuclear Quality Assurance Program for South Texas Project

INTRODUCTION & SCOPE OF SERVICES

1. Introduction:

- a. Revised first paragraph to clearly distinguish the project-related manual from the Corporate Revision 11. Minor editorial change to clarify wording.
- b. Added second paragraph to describe the manner in which South Texas project-related manuals are assigned as well as the terms for such assignment.

2. Scope of Services:

- a. Revised first paragraph to indicate that procurement sections of ETR-1001 are not applicable to the Ebasco scope of services for the South Texas Project.
- b. The second, third, fourth, and fifth paragraphs have been deleted since the Ebasco scope of services for the South Texas Project does not include procurement of any kind or subcontracting of safety-related services.
- c. Revised sixth paragraph to clarify and to indicate that Ebasco may prepare drawings which are not design documents when authorized by design specifications.
- d. Added paragraph to clarify differences in quality trend analysis responsibilities of Ebasco and the Client.

These changes have been made to delete references to ESI procurement or subcontract activities, to clarify ESI's role in trend analysis, to redefine ESI's activities related to control of drawings and to provide minor clarifications on the area of ESI's program manuals. These changes do not reduce commitments previously made in revisions 4 and 5 of the QAPD.

TABLE OF CONTENTS

Revision numbers and dates were changed to reflect applicable section revisions.

SECTION QA-I-1

1. Paragraph 1.0:

- a. Deleted ANSI N45.2.13 and RG 1.123 as applicable requirements since procurement is not within Ebasco's scope of services for the South Texas Project.
- b. Various editorial changes in wording for clarification purposes.

2. Paragraph 4.2:

- a. Deleted the Vendor Quality Assurance Department Procedures Manual since vendor quality assurance is not within Ebasco's scope of services for the South Texas Project.
- b. Corrected titles of the procedures manuals as appropriate and indicated those procedures manuals which are project-specific.
- c. Added Construction Maintenance Instructions as QA Program implementing documents.

3. Paragraph 4.3:

Deleted reference to Ebasco-purchased items since procurement is not within Ebasco's scope of project services.

4. Paragraph 4.4:

Entire paragraph deleted since procurement is not within Ebasco's scope of project services.

5. Paragraph 5.0:

Revised to clarify that the governing Quality Assurance Program Manual for the South Texas Project is the project-related manual rather than the Corporate manual (ETR-1001).

6. Paragraphs 6.1, 6.2, and 6.3:

Revised to indicate the auditing entities within the Ebasco organization which are applicable to the South Texas Project (i.e. Site Quality Assurance, Home Office Quality Assurance Engineering, and Management) and to reflect the scope of auditing responsibilities corresponding to each.

7. Table I-1.1:

- a. Revised to reflect deletion of Manual Sections QA-I-5, QA-III-3, QA-III-4, and QA-III-5 that were applicable to procurement and vendor-related activities which are not within Ebasco's scope of services for the South Texas Project.
- b. Revised to indicate those 10CFR50 Appendix B criteria and ANSI N45.2 paragraphs which are not applicable to Ebasco's scope of services for the South Texas Project.

8. Tables I-1.2 and I-1.3:

Revised to reflect the deletion of procurement and vendor-related activities from Ebasco's scope of project services and to indicate new implementing procedures or revised procedure titles.

These changes have been made to delete references to ESI procurement and subcontract activities and to clarify responsibilities assigned to Home Office and site organizations. Other minor editorial changes have also been made for clarification purposes. No reduction in commitments contained in revisions 4 and 5 of the QAPD have been made.

SECTION OA-I-2

1. Paragraph 2.3:

Revised to delete reference to the Procurement Division and corresponding Figure I-2.5.

2. Paragraph 3.1:

Revised to reflect title change.

3. Paragraph 3.1.1.1:

Revised to reflect only those responsibilities of the Manager Site Quality Assurance which are specific to the South Texas Project and to indicate authority delegated to the South Texas Project Quality Program Site Manager with regard to Site Quality Assurance and Site Quality Control procedures.

4. Paragraph 3.1.1.2:

Revised to be specific for the South Texas Project, to delete reference to vendor meetings, and to include authority delegated by the Chief Quality Assurance Engineer regarding Quality Assurance procedures.

5. Paragraph 3.1.1.2.1:

- a. Deleted functions related to procurement and vendors.
- b. Added Site Quality Assurance functional responsibilities which were not previously addressed and to clarify function descriptions to reflect project requirements and practices.

6. Paragraph 3.1.1.2.2:

- a. Added "the Client or his designee" in lieu of "Engineering" in Subparagraph (c).
- b. Added "procedures" in lieu of "Plans" for clarification in Subparagraph (g).
- c. Deleted reference to work performed by contractors.

7. Paragraph 3.1.1.2.3:

Deleted reference to vendor/contractor records and added "...until turnover to the Client or his designee" to Subparagraph (b).

8. Paragraph 3.1.1.3:

Deleted Subparagraph (e) which referred to supplier evaluation.

9. Paragraph 3.1.1.4:

- a. Deleted references to manufacturers.

- b. Added Subparagraph (d) to read as follows: "Qualification and certification of Ebasco NDE personnel."

10. Paragraph 3.1.2:

- a. Added a description of the Site Welding Superintendent position and corresponding functional and reporting responsibilities.
- b. Deleted all references to suppliers.
- c. Added Materials Applications functional responsibilities which were not previously addressed and to clarify function descriptions to reflect project requirements and practices.

11. Paragraph 3.1.3:

Deleted entire paragraph since vendor quality assurance is not within Ebasco's scope of services for the South Texas Project.

12. Paragraph 3.1.5:

Renumbered as 3.1.4 and deleted reference to soils, concrete, and reinforcing steel testing services which are not within Ebasco's scope of services for the South Texas Project.

13. Paragraph 4.2.1:

Deleted paragraph in its entirety since the Manager of Construction Engineering has no functional responsibilities applicable to the South Texas Project.

14. Paragraph 4.3:

Revised to more appropriately describe the responsibilities of the Site Manager.

15. Paragraph 4.7:

Revised for purpose of clarification and to delete reference to Level III schedules.

16. Paragraph 4.10:

Deleted paragraph in its entirety since Ebasco's scope of project services does not include management of construction control functions.

17. Paragraph 4.13:

Renumbered as 4.12 and revised to reflect that the Safety Supervisor now reports directly to the Site Manager.

18. Paragraph 4.14:

Renumbered as 4.13 and deleted reference to purchasing and material control.

19. Paragraphs 4.15, 4.16, 4.17, and 5.0:

Deleted in their entirety since warehousing, purchasing, and subcontracting are not within Ebasco's scope of project services.

20. Paragraph 6.0:

a. Renumbered as Paragraph 5.0.

b. New Paragraph 6.0 entitled "Organization Charts" was added to provide a listing of applicable organization charts and corresponding revision status of each.

21. Figure I-2.4:

Revised to reflect organization changes/deletions indicated in subparagraphs of Paragraph 4.0.

These changes have been made to delete references to activities which are no longer within ESI's scope of responsibilities on the STP, including procurement and subcontractor activities, references to soil, concrete and reinforcing steel testing services, management of construction control functions and warehousing. Organizational changes made include addition of a new description, deletion of positions with no functional responsibility on the STP and clarification of responsibilities at the ESI Home Office and STP site. Other minor editorial changes were made for clarification and readability purposes. These changes do not represent a reduction in commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-I-3

1. Paragraph 1.0

Revised to clarify that the governing document is the project related manual rather than the Corporate manual.

2. Paragraphs 2.0, 3.1, 3.3, 4.0, 5.0, 6.0, and 7.0:

Revised to limit discussion of personnel training and indoctrination to only those specific Ebasco organizations with responsibility for providing safety-related services to the South Texas Project.

3. Paragraph 3.2:

Deleted in its entirety since engineering, procurement, and licensing are not applicable to Ebasco's scope of services for the South Texas Project.

4. Paragraph 8.0:

- a. Revised heading to clarify subject of paragraph.
- b. Deleted reference to a specific Site Quality Control procedure since there are a number of implementing procedures which address requirements for the training, qualification, and certification of Site Quality Control inspection personnel.
- c. Revised to clarify the manner in which training of Quality Control personnel is initiated, to clarify responsibility for maintenance of qualification records, and to clarify the manner in which the qualification records are audited.

These changes have been made to delete references to training activities involving organizations which do not have responsibilities within ESI's scope of work at the STP, including procurement, engineering and licensing. Changes were made to focus on the responsibilities of those organizations involved in training and indoctrination activities for the STP and to provide clarification on training of Quality Control personnel. Minor editorial changes to revise a section heading and to enhance readability were made. No reduction in commitments was made.

SECTION QA-I-5

Section QA-I-5 'QA Evaluation of Suppliers/Contractors' was deleted in its entirety since Ebasco's scope of services for the South Texas Project does not include evaluation of suppliers and contractors. These activities are administered and performed by HL&P and BEC, as appropriate. This deletion does not represent a reduction in commitment.

SECTION QA-I-6

1. Paragraph 1.0:

Deleted second sentence since a project filing system is applicable only to those projects in which Ebasco is responsible for overall project management involving home office activities such as engineering, procurement, and licensing.

2. Paragraph 2.0:

Editorial changes including deletion of QA acronym and change of wording from 'owner' to 'client.'

3. Paragraph 3.0:

Deleted reference to the Ebasco Engineering and Procurement organizations.

4. Paragraph 4.1:

Deleted reference to procurement documents.

5. Paragraph 4.3:
Revised for clarification purposes.
6. Paragraph 4.5:
Editorial change to specify QA records.
7. Paragraph 4.7:
Revised to include as an acceptable alternative the use of authorized initials in conjunction with correcting or supplementing QA records.
8. Paragraph 4.8:
 - a. Revised Subparagraphs (a) and (f) for clarification purposes.
 - b. Deleted reference to manufacturing in Subparagraph (b).
9. Paragraph 5.1:
Former Paragraph 5.1 was deleted in its entirety since procurement is not within Ebasco's scope of project services.
10. Paragraph 5.2:
Renumbered as Paragraph 5.1 and revised second sentence to clarify responsibility for QA records maintenance and auditing.
11. Paragraphs 6.1.1 and 6.1.2:
Revised for clarification purposes.
12. Paragraph 6.1.3:
Revised to include provisions for verification that QA records received are legible.
13. Paragraphs 6.1.5, 6.2, 6.3, and 6.5:
Revised for clarification purposes.
14. Paragraph 7.0:
Editorial change to specify 'client' rather than 'owner.'

These changes have been made to delete references to activities which are not within ESI's scope of work at the STP including procurement, manufacturing and maintenance of a project filing system. Other changes provided clarification of various activities including responsibility for QA records maintenance and auditing, use of initials to authorize corrections or supplements to records and verification of QA record legibility. Minor editorial changes were also made. The changes do not reduce commitments made in previous revisions to the QAPD.

SECTION QA-III-1

1. Paragraph 2.4:

Deleted in its entirety since procurement is not within Ebasco's scope of project services.

2. Paragraph 3.1:

Editorial changes including deletion of 'Implementing' Instructions, procedures and drawings and addition of 'organization' following Site Quality Assurance.

3. Paragraph 3.2:

a. Renumbered as Paragraph 3.3.

b. Changed second sentence from "Ebasco Standards and Procedures Department" to the "Ebasco Engineering Development and Standards Department" to correctly indicate the title of the Ebasco organization responsible for the development of company instructions and procedures.

c. Inserted new Paragraph 3.2 to indicate the Ebasco organization with responsibility for development of company procedures such as Nuclear (N) procedures.

4. Paragraph 4.2:

Revised to provide an option for an organization responsible for issuance of certain documents to procedurally delegate to a second organization the authority for maintenance of historical files applicable to the documents and to include the addition of maintenance of instructions in historical files.

5. Paragraph 4.3:

This paragraph added to address distribution and control of site-generated field sketches, construction procedures, quality control procedures, and special process procedures.

6. Paragraph 5.0:

This paragraph added to address requirements for review and approval of changes to Ebasco documents. The content of this paragraph previously appeared in Manual Section QA-III-2.

These changes were made to define responsibilities for document control, which are now accomplished by BEC, and to delete reference to ESI procurement activities. Additions were made defining responsibilities for development of procedures and review and approval of changes to ESI documents. Clarifications were made on Departmental titles and the option for delegation of responsibility for historical file maintenance. Minor editorial changes were also made. None of the changes reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-2

This entire Manual section has been revised to reflect that the Client or his designee has assumed responsibility for distribution and control of all project documents which were previously distributed and controlled by the Senior Resident Engineer or his designee (i.e. design documents, drawings, specifications, construction procedures, special process procedures, quality control procedures, and construction field sketches). Since the activities necessary to support the distribution and control of project documents are still performed, although under the direction of a different organization, no reduction in commitment has been made.

SECTION QA-III-3

Section QA-III-3, 'Procurement Document Control' was deleted in its entirety since Ebasco's scope of services for the South Texas Project does not include procurement document control. This does not reduce commitments made in revisions 4 and 5 of the QAPD.

SECTION QA-III-4

Section QA-III-4, 'Construction Site Procurement' was deleted in its entirety since Ebasco's scope of services for the South Texas Project does not include procurement. This does not reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-5

Section QA-III-5, 'Supplier/Contractor Surveillance' was deleted in its entirety since Ebasco's scope of services for the South Texas Project does not include surveillance of suppliers or contractors. This does not reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-6

1. Paragraph 1.0:

Deleted reference to nonconformances to site purchase order requirements.

2. Paragraph 2.0:

Former Paragraph 2.0 was deleted in its entirety since Ebasco's scope of project services does not include control and reporting of supplier nonconformances.

3. Paragraph 3.1:

Former Paragraph 3.1 was renumbered as 2.1 and revised to reflect that nonconformances may also be reported to Site Quality Control.

4. Paragraphs 3.4 and 3.5:

Former Paragraphs 3.4 and 3.5 were renumbered as 2.4 and 2.5 respectively and revised to clarify review and processing requirements for nonconformance reports.

5. Paragraph 2.6:

Revised to clarify that the Site Quality organization is responsible for audits and reinspections.

6. Paragraph 4.1:

Deleted in its entirety since Ebasco's scope of project services does not include procurement.

7. Paragraph 5.0:

Former Paragraph 5.0 was renumbered as 4.0 and revised to clarify processing and review of nonconformance reports.

8. Paragraph 5.1:

Clarification of organization responsible for approval of standard repair procedures.

9. Paragraph 7.0:

Former Paragraph 7.0 was renumbered as 6.0 and revised to indicate changes in responsibility for South Texas Project quality trend analysis (i.e. the Client is responsible for the project-specific trend analysis and Ebasco responsibility is limited to its corporate trend analysis).

10. Paragraph 7.0:

Addition of procedures to be used in maintenance of nonconformance reports.

These changes were made to delete references to ESI procurement activities. Clarifications were made to descriptions of reporting, reviewing, and processing of nonconformances and approval of standard repair procedures. Clarification was also made in the responsibility for trend analysis. These changes do not reduce commitments previously contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-7

1. Paragraph 2.2:

- a. Subparagraph 2.2.5 renumbered as (e) and revised to delete reference to supplier's facility.

b. Added Subparagraph (g) to include Site QA surveillances as a source from which a need for corrective action may be identified.

c. Minor editorial changes for clarification purposes.

2. Paragraph 2.6:

Revised to clarify that the Site QA organization is responsible for corrective action documentation. Minor editorial changes for clarification.

3. Paragraph 2.7:

Revised to clarify that paragraph pertains specifically to responses for programmatic deficiency documents such as audit findings and not to responses for documents identifying hardware deficiencies such as nonconformance reports.

4. Paragraph 3.2.2:

Former Paragraph 3.2.2 was deleted in its entirety since Ebasco's scope of project services does not include evaluations or audits of suppliers.

5. Paragraph 2.8:

Changed to specify that the Site QA organization is responsible for ensuring timely corrective action implementation.

6. Paragraph 2.9:

Minor editorial changes for clarification.

7. Paragraph 3.3:

Former Paragraph 3.3 was deleted in its entirety since Ebasco's scope of project services does not include review of supplier nonconformances.

8. Paragraph 4.0:

Change to clarify that the site QA organization is responsible for verification of corrective action implementation.

9. Paragraph 5.0:

Revised to indicate changes in responsibility for South Texas Project quality trend analysis (i.e., the Client is responsible for the project-specific trend analysis and Ebasco responsibility is limited to its corporate trend analysis).

Changes were made to delete reference to ESI procurement activities. Clarifications were made on the Site Quality Assurance responsibilities for corrective action documentation, monitoring and verification. Additional clarification was provided in the responsibilities for trend analysis. Other minor changes were also made. No reduction in commitments were made as a result of these changes.

SECTION QA-III-8

1. Paragraph 2.0:
 - a. Revised to clarify responsibilities of the Ebasco organizations responsible for the control of special processes.
 - b. Deleted all references to purchase orders and suppliers since the Ebasco scope of project services does not include procurement.

2. Paragraph 3.1:

Former Paragraph 3.1 was deleted in its entirety since the Ebasco scope of project services does not include procurement.

3. Paragraph 3.2:

- a. Former Paragraph 3.2 was renumbered as 3.1, and revised and restructured for clarification purposes.
- b. Reference to construction contractors has been deleted.

These changes deleting references to ESI procurement activities and providing clarification on special process responsibilities does not reduce any commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-9

1. This entire Manual section has been revised, restructured, and expanded to include descriptions of site audits by Home Office Quality Assurance Engineering and management audits by the Management Audit Committee.
2. Added new Paragraphs 3.4, 3.6, and 3.7 to reflect project requirements and actual practice pertaining to audit scheduling, the audit team, and audit notification, respectively.
3. Revised Paragraphs 5.4 (renumbered as 3.5), 5.5 (renumbered as 3.8), 5.6 (renumbered as 3.9), and 5.7 (renumbered as 3.10) to reflect project requirements and actual practice pertaining to audit planning, audit performance, audit reporting, and audit follow-up, respectively.
4. Deleted Paragraph 4.0 that addressed auditing of suppliers which is not within Ebasco's scope of project services.
5. Added new paragraph 4.0 to describe the specific auditing functions performed by the Management Audit Committee, Site Quality Assurance, and Home Office Quality Assurance Engineering.

These changes, made to clarify the responsibilities for various ESI Home Office and Site organizations responsible for the audit function, do not reduce commitments previously made in revisions 4 and 5 of the QAPD.

SECTION QA-III-10

1. Paragraph 2.1:

Revised Subparagraph (a) to clarify that Ebasco receives all items and appropriate documentation from the Client or his designee who is responsible for receiving incoming items directly from suppliers and vendors.

2. Paragraph 2.2:

Revised to specify that Site Quality Assurance is responsible for performance of reviews and audits.

3. Paragraph 3.1:

Revised to include stamping as an acceptable means of physically identifying items.

4. Paragraph 3.2:

Editorial change to include 'individual' prior to 'small items.'

These changes, made to clarify source of supplier/vendor documentation submitted to ESI, method of physical identification and other minor changes, do not result in a reduction in commitments.

SECTION QA III-11

1. Paragraph 2.4:

Revised to specify that Site Quality Assurance is responsible for performance of reviews and audits.

2. Paragraph 3.1:

Deleted reference to purchase orders.

3. Paragraph 3.5:

Revised to clarify intent of requirement.

4. Paragraph 3.6:

Revised to more clearly define the type of item for which a sampling inspection program may be utilized.

5. Paragraph 5.2:

Revised to change qualifications to certification and addition of 'records' in second sentence.

The above changes were made to delete references to ESI procurement responsibilities and provide additional clarification on the conduct of inspection activities. These changes do not reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-12

1. Paragraphs 2.1 and 2.2:

Revised to clearly reflect project requirements for content of procedures related to test control and to clarify that Site Quality Assurance is responsible for the procedure review and comment.

2. Paragraph 2.3:

Revised to change 'procedures' to 'requirements.'

3. Paragraph 2.4:

Revised to clarify that Site Quality Assurance is responsible for the performance of reviews and audits.

The above changes, made to expand on and clarify test control procedural requirements and to clarify organizational responsibilities, do not reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-13

1. Paragraphs 2.4, 3.1, and 3.4:

Revised to clearly reflect project requirements for control of measuring and test equipment.

2. Paragraph 2.3 (g):

Change to clarify intent of sentence.

3. Paragraph 3.7:

Revised to clarify that Site Quality Assurance is responsible for reviews and audits.

These revisions which include changes to reflect project requirements and minor editorial clarifications do not reduce commitments contained in revisions 4 and 5 of the QAPD.

SECTION QA-III-14

1. Paragraph 1.1:

Revised to clarify that Ebasco receives all items from the Client or his designee who is responsible for receiving incoming items directly from suppliers and vendors.

2. Paragraph 2.0:

Inserted new Paragraph 2.0 entitled "Responsibilities" which defines specific responsibilities of individual organizations implementing the requirements of this Manual section.

3. Paragraph 3.2:

Editorial change adding 'when applicable.'

4. Paragraph 4.2:

Revised heading to reflect paragraph content.

5. Paragraph 4.1:

Former Paragraph 4.1 was renumbered as 5.1 and revised to provide distinction between items stored in controlled storage environments and items protected in-place.

6. Paragraph 4.2.1:

- a. Former Paragraph 4.2.1 was renumbered as 5.2 and, in definition of Level C storage, inserted "ventilation" in lieu of "equivalent" to be consistent with project requirements.
- b. Editorial change to 5.2 (b), (c), (e), (g), and 5.3 to provide clarification.
- c. Deleted second sentence of Subparagraph (d) and incorporated it in new Paragraph 2.1 (d).
- d. Deleted Subparagraph (g) since it is specifically applicable to warehousing which is not within Ebasco's scope of project services.

7. Paragraph 5.1:

- a. Former Paragraph 5.1 (a) was deleted since it is applicable only when Ebasco is responsible for initial receiving of incoming items from vendors.
- b. Incorporated the remainder of the paragraph into new Paragraph 2.3.

8. Added new Paragraph 6.0 entitled "Records" which references requirements for records maintenance.

These changes were made to delete activities which are not part of ESI's scope of work and to provide both editorial clarifications and clarifications to be consistent with project requirements. These changes do not reflect a reduction in commitments.

SECTION QA-III-15

1. Paragraph 2.1:

Revised to be consistent with project requirements relating to methods for maintaining item status.

2. Paragraph 2.2:

Revised to give an example of status indicators.

3. Paragraph 3.5:

Revised to clarify that Site Quality Assurance is responsible for performance of reviews and audits.

The above changes do not reflect a reduction in commitment.

APPENDIX I

1. Since Ebasco's scope of project services does not include procurement, the following terms and corresponding definitions were deleted:
 - a. Audits (External)
 - b. Bidder
 - c. Ebasco Engineering Office
 - d. Construction Contracts
 - e. Inquiry
 - f. Purchase Orders
 - g. Source Surveillance
 - h. Supplier


2. Added or revised the following terms and definitions:
 - a. Audits (Internal)
 - b. Client or his Designee
 - c. Ebasco Home Office
 - d. Safety-Related Item
 - e. Service

Some of the above definitions were changed to delete references to ESI procurement activities, clarify organizational responsibilities or provide editorial changes. New definitions were added to provide additional understanding of the Manual. These changes do not reduce commitments previously contained in revisions 4 and 5 of the QAPD.

APPENDIX II

1. Revised Note 7 to be consistent with project requirements and practices.
2. Deleted Notes 22 through 26, that were applicable to ANSI N45.2.13 which is not applicable to Ebasco's scope of project services.
3. Titles were added throughout specifying the applicable ANSI Standard.

These changes do not reduce commitments contained in revisions 4 and 5 of the QAPD.

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 QUALITY ASSURANCE PROGRAM	SECTION QA-I-1
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION <u>5</u> DATE <u>3/26/84</u>

<u>Procedure No.</u>	<u>Title</u>	
QCP-10.5	Inspection of Structural Steel Erection and Bolting	
QCP-10.6	Stud Welding Inspection	
QCP-10.7	Miscellaneous Metal Fabrication Inspection	
QCP-10.8	Protective Coatings Inspection	
QCP-10.9	General Inspection	
QCP-10.10	Soils Inspection	
QCP-10.11	Mechanical Equipment Installation Inspection	
QCP-10.12	Pipe Support Installation Inspection	R6
QCP-10.13	Mechanical Instrumentation Installation Inspection	
QCP-10.14	System/Subsystem Walk-Down Inspection	R6
QCP-10.15	Electrical Equipment Installation Inspection	
QCP-10.16	Inspection of Electrical Raceways	R6
QCP-10.17	Electrical Cable Installation Inspection	
QCP-10.18	Electrical Cable Termination Inspection	
QCP-10.19	Inspection of Concrete Expansion Anchors, Rock Bolts, and Core Drilling	R6
QCP-10.20	Electrical Instrumentation Installation Inspection	
QCP-10.21	HVAC Duct/Hanger Installation Inspection	
QCP-10.22	Receipt Inspection of ASME Section III and Other Safety-Related Equipment/Materials	

PART A

HOUSTON LIGHTING AND POWER COMPANY
QUALITY ASSURANCE PROGRAM DESCRIPTION

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION
QUALITY ASSURANCE DURING DESIGN AND CONSTRUCTION

REVISION 6

DATE March 30, 1984

HOUSTON LIGHTING & POWER COMPANY
QUALITY ASSURANCE PROGRAM DESCRIPTION

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HOUSTON LIGHTING & POWER COMPANY
QUALITY ASSURANCE PROGRAM DESCRIPTION

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<u>NUMBER</u>	<u>TITLE</u>
1	South Texas Project Internal QA Relationship
2	Lines of Communication HL&P & BEC/Westinghouse (Contractors)

QUALITY ASSURANCE PROGRAM DESCRIPTION

South Texas Project Electric Generating Station Quality Assurance During Design and Construction

Houston Lighting & Power Company (HL&P), as a licensee and as Project Manager for itself and the other owners, has quality assurance responsibility for design, engineering, procurement, fabrication, construction and operation associated with the South Texas Project Electric Generating Station (STP). Although HL&P has delegated certain of its quality assurance authority to its contractors, it nevertheless retains the responsibility for the quality assurance program controlling all aspects of the STP. HL&P reviews and approves this QAPD and all changes thereto prior to implementation. Additionally, HL&P establishes quality assurance requirements for the project in a Project Quality Assurance Plan. The Project Quality Assurance Plan specifies requirements applicable to prime contractors and HL&P. The HL&P Quality Assurance staff monitors the performance of HL&P staff and contractors to assure compliance with the Project Quality Assurance Plan.

HL&P has contracted with Westinghouse Electric Corporation (Westinghouse) for the design, fabrication and quality assurance services for the nuclear steam supply system and with Bechtel Energy Corporation (BEC) for plant Design, procurement, engineering, construction management, quality assurance services and other related services, including quality assurance services for Westinghouse items upon receipt at the project site. HL&P has contracted with Ebasco Services, Inc. (ESI) for construction services including quality assurance and quality control for its scope of work. This quality assurance program description addresses the HL&P quality assurance program (Part A), the quality assurance program of BEC (Part B), and the quality assurance program of ESI (Part C). The Westinghouse quality assurance program is described in WCAP-8370, "Westinghouse Nuclear Energy System Divisions Quality Assurance Plan" and is not included in this program description.

PART A

HOUSTON LIGHTING & POWER COMPANY QUALITY ASSURANCE PROGRAM DESCRIPTION

South Texas Project Electric Generating Station Quality Assurance During Design and Construction

Houston Lighting & Power Company (HL&P), as a licensee and as Project Manager for itself and the other owners, has the Quality Assurance (QA) responsibility for design, engineering, procurement, fabrication, construction, preoperational testing and operation of the South Texas Project (STP) Electric Generating Station.

HL&P's Project Quality Assurance Plan requires that HL&P, its prime contractors, subcontractors and vendors comply with the criteria established by 10CFR50, Appendix B. It is the intent of HL&P to comply with ANSI N45.2 and the applicable daughter standards and implementing Regulatory Guides as indicated in Table 1. Furthermore, HL&P will assure through programmatic direction that the prime contractors and all their subcontractors and suppliers performing nuclear safety-related work comply with 10CFR50, Appendix B; ANSI N45.2, and the Regulatory Guides as referenced herein consistent with their scope of work.

Programmatic direction is defined as the role of the owner in establishing the program requirements and ensuring the adequacy of the Prime Design, Engineering and Construction Management Quality Assurance Program. The programmatic direction consists of review and approval of the system features initially and continued monitoring of those systems during implementation and further refinement or revision of the systems if the systems need strengthening. The assurance of compliance by first level nuclear safety-related suppliers and contractors will be accomplished through the Engineer/Construction Manager's review and approval of the supplier's/contractor's Quality Assurance Program.

The system monitoring is achieved through audits and surveillances of work in progress.

The HL&P Quality Assurance Program is implemented in two phases: the design and construction phase as defined by the Project Quality Assurance Plan and the operational phase, including preoperational testing and startup, as defined by the Operational Quality Assurance Plan. The Project Quality Assurance Plan is described herein. The Operational Quality Assurance Plan is described in Chapter 17.2 of the FSAR.

The combination of these Quality Assurance programs augmented by definitive procedures provide HL&P with the assurance that its quality commitments are met.

1.0 Organization

- 1.1 The organization chart shown in figure 1 illustrates: (a) groups within HL&P having quality responsibilities (engineering, procurement, construction) and b) Quality Assurance interdepartmental relationships for the South Texas Project.
- 1.2 The Project Quality Assurance Manager, South Texas Project, is responsible for providing the programmatic direction, and administering policies, goals, objectives and methods which are described in the Project Quality Assurance Plan. The HL&P Executive Vice President, Nuclear Group, reviews and approves the Project Quality Assurance Plan and has ultimate responsibility for Quality Assurance activities. The Project Quality Assurance Plan interfaces with the Corporate Quality Assurance Program objectives by describing specific Quality Assurance controls to be established by HL&P and the prime contractors on the South Texas Project.
- 1.3 Two levels of control have been implemented by HL&P to monitor the effectiveness of the Quality Assurance Programs at the South Texas Project.
 - a. Corporate level control - Corporate level control is achieved through the direct involvement of the HL&P Executive Vice President, Nuclear Group, and corporate audits and vendor surveillance as described below. The Executive Vice President, Nuclear Group, regularly meets with QA management and receives reports on the status of the QA Programs to aid him in evaluating the overall effectiveness. Corporate QA audits and vendor surveillance are conducted under the direction of the Manager, Quality Assurance to evaluate the overall program effectiveness of HL&P Project Quality Assurance, Westinghouse and its suppliers. Corporate audits of the Architect Engineer/Construction Manager's activities may be performed as requested by the Project Quality Assurance Manager.
 - b. Project level control - Project level control is achieved through Project Quality Assurance Program approval and monitoring of the effectiveness of implementation by HL&P, prime contractors and subcontractors. The Project QA staff under the direction of the Project Quality Assurance Manager prepares the Project Quality Assurance Plan and reviews and approves the Project Quality Assurance Program for the Architect Engineer/Construction Manager. The monitoring is implemented by scheduled project audits performed by qualified auditors. Additional monitoring is accomplished by Project QA personnel performing unscheduled selected surveillance of in-process work. HL&P Project Quality Assurance also maintains the capability to perform inspection verifications of in-process or completed work if determined to be necessary by the Project Quality Assurance Manager. If necessary the inspections are performed by personnel qualified in accordance with ANSI N45.2.6.

1.3.1 Vice President, Nuclear Engineering & Construction

The Vice President, Nuclear Engineering and Construction, is responsible for nuclear project management and the engineering, licensing, and construction of the nuclear plants. The Vice President, Nuclear Engineering and Construction, provides technical guidance and administrative direction to:

- a. Manager, Nuclear Engineering
- b. Manager, South Texas Project
- c. Manager, Engineering Assurance

The Vice President, Nuclear Engineering and Construction, reports to the Executive Vice President, Nuclear Group.

1.3.2 Manager, Quality Assurance

The Manager, Quality Assurance, has the authority and responsibility to identify, initiate, recommend, or provide solutions to quality related problems and verify the implementation and effectiveness of the solutions. He has the authority to "Stop Work" for cause in the design, construction and operation phase of the nuclear plant.

The minimum requirements established for this position are:

- a) A college degree in a field of engineering or science, or equivalent experience.
- b) Familiarity with nuclear power generation facilities and the related operations.
- c) Knowledge of the industry's quality assurance standards and regulatory requirements.
- d) Management experience and familiarity with HL&P corporate organizations.

The Manager, Quality Assurance, provides technical guidance and administrative direction to:

- a) Project Quality Assurance Manager
- b) Support Quality Assurance Manager
- c) Operations Quality Assurance Manager

The Manager, Quality Assurance, reports to the Executive Vice President, Nuclear Group.

1.3.3 Project Quality Assurance Manager, South Texas Project

The Project Quality Assurance Manager, South Texas Project, has the responsibility to identify, initiate, recommend, or provide solutions and authority to solve quality related problems and to verify the implementation and effectiveness of the solutions. He has the authority to "Stop Work" for cause on any quality-related activity of the South Texas Project.

The Project Quality Assurance Manager, South Texas Project, must, as a minimum, have:

- a) A college degree in a field of engineering or science, or equivalent experience.
- b) Familiarity with nuclear power generation facilities and related operations.
- c) Knowledge of the QA standards and regulatory requirements.
- d) Management experience and familiarity with HL&P corporate organizations.

The major responsibilities of the Project Quality Assurance Manager, STP, are:

- a) Develop and administer QA policies, goals, objectives, and methods which ensure the proper planning, development, implementation, coordination and administration of the Project Quality Assurance Plan.
- b) Provide programmatic direction on QA related matters to HL&P, and contractor management, and provide the primary interface with NRC.
- c) Direct the onsite audit and surveillance activities; direct audits/surveillances of the Engineer/Construction Manager's QA program implementation in the design office.
- d) Coordinate activities relating to auditing and vendor surveillance in conjunction with the HL&P Support Quality Assurance Manager.

The Project Quality Assurance Manager reports on all quality assurance matters directly to the Manager, Quality Assurance.

1.3.4 Support Quality Assurance Manager

The Support Quality Assurance Manager is responsible for directing all HL&P corporate office auditing, vendor surveillance and technical services activities. He has the authority to "Stop Work" for cause on any quality-related activity of the South Texas Project.

The Support Quality Assurance Manager must, as a minimum, have:

- a) A college degree in a field of engineering or science, or equivalent experience.
- b) Familiarity with nuclear power generation facilities and the related operations.
- c) Knowledge of the industry QA standards and regulatory requirements.
- d) Management experience and familiarity with HL&P corporate organizations.

The major responsibilities of the Support Quality Assurance Manager are:

- a) Directs the HL&P Corporate Quality Assurance Audit Program.
- b) Directs the HL&P vendor surveillance program.
- c) Directs the HL&P Technical Services Group of the Support Division.

The Support Quality Assurance Manager reports on all quality assurance matters directly to the Manager, Quality Assurance.

1.3.5 Project Quality Assurance General Supervisor,
Quality Engineering

The Project Quality Assurance General Supervisor, Quality Engineering reports directly to the Project Quality Assurance Manager, South Texas Project. He is responsible for technical direction and administrative guidance to the site Quality Engineering personnel, providing programmatic direction to prime contractors and interfacing with the NRC. He has the authority to "Stop Work" for cause on any activity related to fabrication and construction.

1.3.6 Supervisor, Quality Systems/Administration

The Supervisor, Quality Systems/Administration reports directly to the Project Quality Assurance Manager, South Texas Project. He is responsible for providing technical direction and administrative guidance to the Quality Systems/Administration personnel; developing and administering the HL&P Project QA Plan; evaluating the Engineer/Construction Manager and Constructor QA programs; administering the HL&P STP QA personnel training and certification program; administrative control of HL&P STP project quality assurance procedures and providing mechanisms to correct the QA programs as necessary. He has the authority to "Stop Work" for cause on any activity related to fabrication or construction.

1.3.7 Supervisor, Quality Control

The Supervisor, Quality Control reports directly to the Project Quality Assurance Manager, South Texas Project. He is responsible for technical direction and administrative guidance to the HL&P Quality Control personnel, coordinating inspection of selected fabrication and construction activities, ensuring proper nonconformance identification and assuring that the personnel performing inspections are properly certified. He has the authority to "Stop Work" for cause on any activity related to fabrication or construction.

1.3.8 Project QA Supervisors, Quality Engineering

The Project QA Supervisors, Quality Engineering report to the Project Quality Assurance General Supervisor, Quality Engineering. They are responsible for technical direction and administrative guidance to the HL&P Quality Engineering personnel in their respective discipline group; conducts audits of the construction manager and contractor activities, including QA; interface with NRC during audits; identifying deficiencies; reviewing procedures applicable to their respective discipline; and providing programmatic direction to the prime contractor. They have authority to "Stop Work" for cause on any activity related to fabrication or construction.

1.3.9 Project QA Supervisor, Design/Procurement

The Project QA Supervisor, Design/Procurement reports directly to the Project Quality Assurance Manager, South Texas Project. He is responsible for providing technical direction and administrative guidance to HL&P Design/Procurement Quality Assurance personnel, coordinating the resolutions of vendor problems identified by HL&P QA, coordinating with site QE personnel for input to vendor

surveillance/audit activities and providing programmatic direction to the Engineer/Construction Manager regarding design control, vendor surveillance and auditing functions. He has the authority to "Stop Work" for cause on any activity related to engineering, design, or procurement.

1.3.10 Manager, Nuclear Training

The Manager, Nuclear Training reports to the Executive Vice President, Nuclear Group. He directs, coordinates and administers the STP nuclear training efforts and provides direction to the prime contractors relative to training. The STPEGS Nuclear Training program includes the Quality Assurance Indoctrination for HL&P personnel associated with the safety-related activities for the South Texas Project.

1.3.11 Manager, South Texas Project

The Manager, South Texas Project reports to the HL&P Vice-President, Nuclear Engineering and Construction. He has overall responsibility for the engineering, construction, procurement, cost, schedule, and startup of the South Texas Project. He has authority to "Stop Work" for cause in all activities of the project.

1.3.12 Manager, Support Services

The Manager, Support Services reports to the Manager, South Texas Project. He is responsible for procurement, project control services, accounting, project administration, contract administration and records management services. He has the authority to "Stop Work" for cause in activities related to purchasing and expediting.

1.3.13 Manager, Engineering

The Manager, Engineering reports to the Manager, South Texas Project. He directs project engineering personnel in the performance of the owner's review of the design and engineering work performed by the prime contractors. The Manager, Engineering ensures that adequate engineering planning, coordination of solutions to problems and work priorities are established by the prime contractor. He has the authority to "Stop Work" for cause in the engineering and design of all items.

1.3.14 Supervising Project Engineer, Site Engineering

The Supervising Project Engineer, Site Engineering reports to the Manager, Engineering for technical direction. He also receives project direction from the Site Manager. He is responsible for coordinating the site engineering interface in the technical resolution of all site related

engineering problems, reviewing field change requests, and site-initiated design change notices. He assists in the release and interpretation of design documents. He can recommend "Stop Work" for cause in the engineering and design for those items within his area of responsibility.

1.3.15 Supervising Engineer, Nuclear Licensing

The Supervising Engineer, Nuclear Licensing reports to the Manager, South Texas Project for project direction and to the Manager, Nuclear Licensing for technical direction. He is responsible for overseeing, coordinating and administering the South Texas Project Licensing effort.

1.3.16 Nuclear Licensing Team Leader

The Nuclear Licensing Team Leader reports to the Supervising Engineer, Nuclear Licensing. He is responsible for coordinating all regulatory activities related to the nuclear safety analysis and licensing of the South Texas Project. The Chairman of the IRC, while not necessarily the Nuclear Licensing Team Leader, is a duly qualified member of the Nuclear Licensing Department. Assignment of this responsibility will be specified in approved procedures.

1.3.17 Manager, Records Management and Information Processing

The Manager Supervisor, Records Management and Information Processing reports to the Manager, Support Services. He is responsible for managing the Records Management personnel and interfacing with the prime contractors and all project organizations with respect to the establishment of systems that control, collect, store and transfer records related to the South Texas Project.

1.3.18 Site Manager

The Site Manager reports to the Manager, South Texas Project. He is responsible for providing technical direction and administrative guidance to HL&P and its prime contractors in the area of construction, site purchasing, startup, construction control and reviewing documents, drawings and specifications related to construction. He also provides administrative guidance for HL&P site engineering. He has the authority to "Stop Work" for cause in all activities related to construction.

1.3.19 Startup Manager

The Startup Manager reports to the Manager, STP, for project direction and to the Nuclear Plant Operations Plant Manager for technical direction. He is responsible for managing all

startup activities for the South Texas Project. He reviews and approves startup instructions, procedures and reports which assure conformance to design and safety requirements. He reviews and recommends approval of construction and design changes identified during test program. He maintains a liaison with HL&P and prime contractors with respect to startup problems and support activities.

1.3.20 Startup General Supervisor

Startup General Supervisor reports to the Startup Manager. He works as directed by the Startup Manager and assists in the effective administration, control, and implementation of the test program.

1.3.21 Construction Superintendent, Nuclear Construction

The Construction Superintendent, Nuclear Construction reports to the Site Manager. He is responsible for ensuring that the prime contractors comply with all contractual and construction requirements. He monitors the prime contractors construction in the areas of evaluating and analysis of construction plans and schedules, work methods, craft performance, staffing, equipment utilization and progress.

1.3.22 Supervising Site Engineer, Construction Support

The Supervising Site Engineer, Construction Support reports to the Supervising Project Engineer, Site Engineering. He is responsible for providing technical and administrative support to all HL&P Site Organization, and for monitoring the activities of the Prime Contractors' construction engineering groups.

1.3.23 Area Construction Supervisor(s)

The Area Construction Supervisor(s) reports to the Construction Superintendent, Nuclear Construction. They are responsible for monitoring and surveillance of the prime contractor's construction activities, expediting the resolution and corrective actions of problems identified by QA/QC and verifying that construction planning includes requirements for inspection and testing.

1.3.24 Manager, Nuclear Purchasing

The Manager, Nuclear Purchasing reports to the Manager, Support Services for project direction and to the Vice President, Purchasing for technical direction. He is responsible for overall coordination and administration of

purchasing, contracts administration and subcontracting activities for the South Texas Project. He directs the development and implementation of procedures, vendor selection, contract negotiations and preparing purchase orders for those contracts administered by HL&P.

1.3.25 Project Purchasing Manager

The Project Purchasing Manager reports to the Manager, Nuclear Purchasing. He is responsible for the implementation of a comprehensive Material Control Program and for proper procurement of permanent and temporary equipment, material and services for the South Texas Project.

1.3.26 Project Contracts Manager

The Project Contracts Manager reports to the Manager, Nuclear Purchasing. He is responsible for the overall coordination of the Project's contracting activities; for assuring the monitoring and auditing of Project contracts for compliance by the contracting parties; and for direct placement and administration of required contracts not within the scope of the Architect-Engineer/Construction Manager's contract.

- 1.4 The organizations or entities listed below may be delegated quality assurance authority within their scope of work.

HL&P has the responsibility to audit and monitor all of the below listed organizations' or entities' performance to assure that their quality programs provide sufficient authority and organizational freedom for personnel performing QA functions and that they are effectively implemented.

- a) Houston Lighting & Power Company as a licensee and Project Manager for itself and the other owners has the overall responsibility for design, engineering, procurement, construction, operation and quality assurance activities. Bechtel Energy Corporation and Westinghouse Electric Corporation have contractual responsibility to provide acceptable QA programs to HL&P. The contract provides HL&P the authority to audit and monitor BEC and Westinghouse performance to assure that the QA programs provide for sufficient authority and organizational freedom to be effectively implemented.
- b) Bechtel Energy Corporation as the Architect/Engineer and Construction Manager provides HL&P with design, engineering, procurement, construction management and quality assurance services.
- c) Westinghouse Electric Corporation as the Nuclear Steam Supply System (NSSS) supplier provides HL&P with the NSSS design, engineering, procurement, fabrication, and quality assurance services.

- d) Ebasco Services Inc. as the Constructor shall provide HL&P with construction quality assurance and quality control services under the direction and as approved by the Construction Manager.
- e) Consultants - HL&P utilizes the services of qualified consultants to assist in the performance of quality tasks.

Figure 2 illustrates how these companies interrelate with HL&P for the South Texas Project.

2.0 Quality Assurance Program

- 2.1 The HL&P Project Quality Assurance Program for the South Texas Project has been developed in accordance with the criteria of 10CFR50 Appendix B, ANSI N45.2 and Regulatory Guides as referenced herein, to provide programmatic direction on quality requirements for the prime contractors and subcontractors during design and construction.
- 2.2 The nuclear safety-related structures, systems and components covered by this program are listed in Section 3.2 of the FSAR. Westinghouse Electric Corporation provides quality assurance services for the items listed in Table 3.2.B-1 of the FSAR until delivery to the site. BEC and ESI provide quality assurance services for the items listed in Table 3.2.A-1 of the FSAR within the scope of their work. BEC provides quality assurance and quality control services for Westinghouse items (Table 3.2.B-1) upon receipt at the site until release for construction, after which ESI provides such services.
- 2.3 The HL&P Quality Assurance Program for the South Texas Project is described by the HL&P Project Quality Assurance Plan. The plan requires that written procedures, training and certification, issuance of specifications and drawings, and work and inspection planning be accomplished in advance of performing nuclear safety-related activities. HL&P Project Quality Assurance ensures through procedure reviews that this advance preparation is accomplished.

The Project Quality Assurance Plan for the South Texas Project has in the past been structured in accordance with the Regulatory Guides (RGs) and Industrial Standards that are addressed in the NRC publications "Guidance on QA Requirements During Design and Procurement Phase of Nuclear Power Plants," (The Gray Book) Revision 1, dated May 24, 1974 (WASH 1283) and "Guidance on QA Requirements During the Construction Phase of Nuclear Power Plants," (The Green Book) dated May 10, 1974 (WASH 1309). Presently the regulatory guides and standards listed on Table 1 are in effect for the South Texas Project.

- 2.4 The HL&P Plans and Procedures Manuals, which are used to implement the quality related activities for each major HL&P organization, are listed in Table 2. Verification that plans and procedures are properly implemented is accomplished by HL&P Quality Assurance through audits, surveillance, and regular management assessment of the Quality Assurance Program.

- 2.5 It is the policy of HL&P, acting as a licensee and Project Manager for the other owners for the South Texas Project, to assure that the design, fabrication, construction, testing and operation of STP are in conformance with project specifications, procedures, codes and NRC regulations. It is the responsibility of each organization assigned to the STP to ensure that project procedural review methods include provisions to ensure that the requirements stated in this program description are incorporated into project procedures. The Project Quality Assurance Plan identifies activities and establishes requirements for procedures which identify, initiate and verify the resolution of nuclear safety-related quality problems. The implementing procedures call for the resolution of quality problems at the lowest possible authorized level. However, if a dispute is encountered in the resolution of a quality problem which cannot be resolved at lower levels, the Manager, Quality Assurance, presents the problem ultimately to the HL&P Executive Vice President, Nuclear Group, for resolution.
- 2.6 The HL&P Nuclear Training Department is responsible for conducting a quality oriented indoctrination program for new HL&P personnel who have quality-related functions. The HL&P Project Quality Assurance Plan requires that prior to performing activities affecting quality the personnel are trained, as necessary, in the applicable procedures. The training provides a thorough understanding of the purpose, scope, policies, principles, and techniques of the specific procedures or instructions. When personnel perform special activities, a training and certification program is established and maintained. Refresher training is conducted as necessary to ensure that proficiency is maintained. Bechtel is required to establish a training program for Bechtel and administer the constructor's training program including refresher training, as necessary, to ensure proficiency is achieved and maintained. HL&P Quality Assurance audits and surveillances are performed to ensure compliance with these criteria.
- 2.7 The Project Quality Assurance Manager is directly responsible for assuring effective implementation of the Quality Assurance program. The qualifications for this position are defined in Section 1.3.
- 2.8 The HL&P Project Quality Assurance Plan requires BEC to review and approve procedures which control nuclear safety-related construction activities. It is the responsibility of BEC's Project Quality Assurance to determine that the contractor's procedures require proper equipment, environment and other prerequisites to perform the associated activity. The implementation of these requirements is verified through audits and surveillance by HL&P, BEC and ESI Quality Assurance.
- 2.9 The results of the HL&P Quality Assurance audit and surveillance activities are presented in a periodic report to the HL&P Executive Vice President, Nuclear Group. Regular executive management review of these activities and the direct involvement of the HL&P Executive Vice President, Nuclear Group, assures that an objective program assessment of the South Texas Project Quality Assurance programs is being performed.

HL&P Project Quality Assurance reviews and documents approval of the BEC Project Quality Program Manual (PQPM); and audits and surveillances are performed by HL&P Quality Assurance to ensure compliance with the BEC PQPM.

- 2.10 HL&P and BEC Project Quality Assurance will establish and document a program for transferring responsibilities and controls for quality-related activities from BEC to HL&P during phaseout of design/construction and plant turnover. This program will be implemented prior to preoperational testing. This program will be in accordance with and consistent with the requirements of this section and/or 17.2 of the FSAR.
- 2.11 HL&P is committed to maintaining the Quality Assurance Program Description as an effective and meaningful document to provide programmatic direction to HL&P and the prime contractors on the South Texas Project. When changes are proposed to the QAPD for HL&P or its prime contractors and those proposed changes reduce the commitments previously established in the QAPD, approval by the NRC will be obtained prior to implementation of the change(s).
- 2.12 When changes are made to the QAPD which alter the program for HL&P or its prime contractors and those changes do not reduce the commitments previously established in the QAPD, appropriate notification will be made to the NRC within 90 days of implementation.

3.0 Design Control

HL&P has the overall responsibility for design and engineering of the South Texas Project and imposes the requirements of 10CFR50, Appendix B, Criterion III, Regulatory Guide 1.64 and ANSI N45.2.11 on the prime contractors and applicable subcontractors.

HL&P has assigned the authority to BEC and Westinghouse to perform the design, engineering and design verification.

HL&P, as appropriate, selects contractors/subcontractors to perform design related tasks. These tasks include but are not limited to the following:

- ° New design
- ° Special design studies
- ° Design work outside the scope of prime contractors
- ° Changes to existing design performed by contractors no longer associated with the South Texas Project.

To be eligible to participate in design activities the contractor must be approved to assure he has the capability to perform the design or requested task in accordance with specified requirements. When a contractor has been selected, HL&P Manager, STP, or designee shall ensure that all appropriate design background information with which to perform the task is provided.

HL&P Engineering performs reviews of selected elements of the completed design, design documents and specifications to ensure that contractual requirements are met.

The HL&P Manager, Engineering is responsible for ensuring that project engineering activities are conducted in accordance with approved engineering procedures. The project engineering organization provides programmatic direction and overview of the engineering activities. The HL&P Project engineering activities are conducted in accordance with Project Engineering Procedures (PEP's).

When HL&P has direct responsibility or assumes direct responsibility for conducting design activities, these activities will be conducted in accordance with the requirements of this section and/or the FSAR Section 17.2.3.

HL&P contractors are required to provide the following design control measures in their quality assurance programs:

- ° A design control system is established to document the methods of accomplishing and controlling essential design activities.
- ° Design documents such as calculations, diagrams, specifications and drawings are prepared and records developed such that the final design is traceable to its sources.
- ° Design activities, documents and interfaces are controlled to assure that applicable input such as design bases, regulatory requirements, codes and standards are incorporated into the final design.
- ° Design input requirements, including design criteria, are documented and their selection reviewed and approved.
- ° Design documents include an indication as to their importance to safety and shall specify the quality characteristics, including materials, parts, equipment and processes, that are essential to safety-related aspects of structures, systems, and components. Design documents also include, as appropriate, acceptance criteria for inspections and tests.
- ° Design control measures are applied to safety-related items such as seismic, stress, thermal, hydraulic, radiation and accident analyses, as they apply to the development of design input or as they are used to analyze the design.
- ° Safety-related designs, including Seismic Category I designs, are verified for adequacy and accuracy through independent objective review of design documents by individuals competent in the subject activity. This verification may include the use of alternate or simplified solution methods or qualification testing, as appropriate.
- ° Design changes, including engineering, vendor and construction originated changes, are controlled in a manner commensurate with the control imposed on the original design.

- ° Document distribution is controlled such that all individuals using a design document or its results and/or conclusions for further design work can be notified if the document is revised or cancelled.
- ° Design documentation includes evidence that design control requirements have been satisfied.
- ° Errors and deficiencies in approved design documents, including design methods (such as computer codes), that could adversely affect safety-related structures, systems and components are documented; and action taken to assure that all errors and deficiencies are corrected.
- ° Deviations from specified quality standards are identified and procedures are established to ensure their control.
- ° An accurate definition of the quality classes, including systems designated as safety-related is provided.

HL&P Quality Assurance performs audits of HL&P, BEC and Westinghouse to ensure that design controls, requirements, specifications and documents are in accordance with the design control criteria.

In addition, HL&P Project Quality Assurance reviews selected quality/construction procedures to ensure that the quality requirements of the design specifications are incorporated. HL&P Project Quality Assurance also performs audits and surveillances to ensure that the work is accomplished in accordance with the design requirements and to ensure that field changes to the design are processed in accordance with the design control criteria.

4.0 Procurement Document Control

To assure that nuclear safety-related items are purchased in a planned and controlled manner, the HL&P Project Quality Assurance Plan establishes basic requirements which are to be used by HL&P and prime contractors in preparing procurement procedures for the South Texas Project. BEC performs procurement activities for nuclear safety-related equipment, materials, and services, exclusive of the NSSS contract, which is performed by Westinghouse. BEC will approve any Ebasco nuclear safety-related procurements. BEC, and as appropriate, Ebasco verify through contract, vendor surveillance and audit that their suppliers comply with the established requirements.

When HL&P has direct responsibility or assumes direct responsibility for procurement activities, these activities will be conducted in accordance with the requirements of this section.

The basic requirements are:

- ° Written procedures are established clearly delineating the sequence of actions to be accomplished in the preparation, review, approval, and control of procurement documents.

- ° A review of the adequacy of quality requirements stated in procurement documents is performed by qualified personnel knowledgeable in the QA requirements. This review is to determine all quality requirements are correctly stated; they can be inspected and controlled; there are adequate acceptance and rejection criteria; and the procurement document has been prepared in accordance with QA Program requirements.
- ° Documented evidence of the review and approval of procurement documents is provided and available for verification.
- ° Procurement documents identify those quality assurance requirements which must be complied with and described in the supplier's QA Program to meet 10CFR50, Appendix B; ANSI N45.2 and applicable ANSI standards and Regulatory Guides. This QA Program shall be reviewed for adequacy by qualified personnel knowledgeable in quality assurance.
- ° Procurement documents contain or reference applicable design bases; technical requirements, including regulatory requirements; component and material identification; drawings; specifications; codes and industrial standards, including their revision status; tests and inspection requirements; and instructions for such activities as fabrication, cleaning, erecting, packaging, handling, shipping, storing and inspecting.
- ° Procurement documents contain, as applicable, requirements which identify the documentation to be prepared, maintained, submitted and made available to the procuring agent for review and/or approval, such as drawings, specifications, procedures, inspection and test records, personnel and procedure qualifications and material and test reports.
- ° Procurement documents contain, as required, provisions for extending applicable requirements to lower tier subcontractors and suppliers, including purchaser's access to facilities and records.
- ° Procurement documents contain provisions for control of nonconformances including 10CFR21 notification and for method of acceptance of the item or service.
- ° Procurement documents contain the requirements for the retention, control, submittal and maintenance of records.
- ° Procurement documents contain the procuring agency's right of access to Vendor's facilities and records for source inspection and audit.
- ° Changes and/or revisions to procurement documents are subject to at least the same review and approval requirements as the original document.
- ° Purchase documents for spare or replacement parts of safety-related structures, systems and components are reviewed for adequacy of quality requirements by qualified personnel knowledgeable in quality assurance. The review is to determine the adequacy of the quality assurance requirements and acceptance criteria relative to the original design.

- ° The evaluation and selection of suppliers are determined by qualified personnel in accordance with written procedures acceptable to HL&P.
- ° Procurement documents, records and changes thereto are collected, stored, maintained and retrievable in a systematic and controlled manner.

HL&P Engineering is responsible for review of selected BEC Procurement Specifications.

HL&P, BEC and, as appropriate, ESI Quality Assurance are responsible for performing audits and surveillances to verify that the requirements have been implemented and that they are effective.

5.0 Instructions, Procedures and Drawings

The HL&P Project Quality Assurance Plan requires HL&P, the prime contractors and their suppliers to establish and implement a Quality Assurance Program which is in compliance with 10CFR50 Appendix B, ANSI N45.2 and applicable ANSI standards and Regulatory Guides. Each program is required to be effective in verifying that the defined activities are accomplished and documented in accordance with written procedures, instructions, and drawings and that they provide quantitative and qualitative acceptance criteria.

HL&P Project Quality Assurance reviews and approves the BEC South Texas Project Quality Assurance Program. To measure the effectiveness of the prime contractors' quality assurance programs, HL&P Project Quality Assurance has implemented a monitoring program consisting of audits and surveillances. HL&P Corporate Quality Assurance also audits HL&P Corporate organizations that perform functions for the South Texas Project, HL&P Project Quality Assurance and Westinghouse for compliance with their respective Quality Assurance Programs.

6.0 Document Control

The HL&P Project Quality Assurance Plan and implementing procedures require that HL&P, the prime contractors and subcontractors implement a document control system for nuclear safety-related items for the South Texas Project. The established system ensures that design, engineering, procurement, fabrication, construction and QA/QC procedures, plans and changes thereto are reviewed and approved by procedurally authorized groups and that the documents are issued, maintained current and controlled by the use of controlled lists of document holders to ensure that superseded documents are replaced in a timely manner.

Measures are established and documented to control the issuance of documents, such as instructions, procedures and drawings, including changes thereto, which prescribe activities affecting quality. These measures assure that documents, including changes, are reviewed for technical adequacy and the inclusion of appropriate quality requirements, are approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes

to documents are reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organizations have access to pertinent background information upon which to base their approval and shall have adequate understanding of the requirements and intent of the original document.

Those participating in an activity are made aware of and use proper and current instructions, procedures, drawings and engineering requirements for performing the activity. Participating organizations have procedures for control of the documents and changes thereto to preclude the possible use of outdated or inappropriate documents.

Document Control measures provide for:

- ° Identification of individuals or organizations responsible for preparing, reviewing, approving and issuing documents and revisions thereto;
- ° Identifying the proper documents to be used in performing the activity;
- ° Coordination and control of interface documents;
- ° Ascertaining that proper documents are being used;
- ° Establishing current and updated distribution lists;
- ° A listing identifying the current revision of instructions, procedures, specifications, drawings and procurement documents. The list is updated and distributed to predetermined responsible personnel.

HL&P, BEC and ESI Quality Assurance perform audits and surveillances to verify that document control systems are in place and effectively implemented.

7.0 Control of Purchased Material, Equipment and Services

The HL&P Quality Assurance Plan and implementing procedures require that HL&P, prime contractors and subcontractors define and document the system and requirements for the control of nuclear safety-related purchased material, equipment and services.

Control and verification of supplier's activities during fabrication, inspection, testing and shipment of materials, equipment and components is planned and performed as early as possible, as required to assure conformance to the purchase order or contractual requirements. These procedures provide for:

- ° Requiring the supplier to identify processes to be utilized in fulfilling procurement requirements.
- ° Reviewing documents required to be submitted by the procurement requirements.

- ° Specifying the characteristics or processes to be witnessed, inspected or verified and accepted based upon the fabrication schedules; the method of surveillance and the extent of documentation required; and those responsible for implementing these procedures.
- ° Audits, surveillance and/or inspections which verify that the supplier complies with the quality requirements of his QA program.

Control and verification of organizations performing services is accomplished by technical verification of data provided, surveillance and/or audit of the activity and review of objective evidence such as certifications, reports, etc.

The selection of suppliers is based on evaluation of their capability to provide items or services in accordance with the requirements of the procurement documents prior to award of contract.

Procurement source evaluation and selection measures are implemented by HL&P and BEC which provide for the identification of the organizational responsibilities for determining supplier capability.

Measures for evaluation and selection of procurement sources, and the results thereof, are documented and include one or more of (a) through (c) and also must include (d) below:

- a. Evaluation of the supplier's history of providing an identical or similar product or service which performs satisfactorily in actual use. The supplier's history shall reflect current capability.
- b. Supplier's current quality records supported by documented qualitative and quantitative information which can be objectively evaluated.
- c. Supplier's technical and quality capability as determined by a direct evaluation of his facilities and personnel and the implementation of his approved quality assurance program.
- d. Evaluation of bid documents including review for technical adequacy, quality assurance and commercial considerations.

Procurement of spare or replacement parts for safety-related structures, systems and components is subject to QA program controls, to codes and standards and to technical requirements at least equal to the invoked original technical requirements or any properly reviewed and approved revisions.

A Receipt inspection is planned and implemented to assure:

- ° Timely inspection of items upon receipt.
- ° The material, component or equipment is properly identified, and corresponds to the identification on the purchase document and receiving documentation.
- ° Material, components, equipment and acceptance records satisfy the receiving inspection instructions prior to installation or use.

- ° Specified inspection, test and other records are accepted and available at the South Texas Project prior to installation or use where required unless otherwise authorized by conditional release.
- ° Items accepted and released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for further work or installation.
- ° Coordination of receipt inspection with vendor surveillance activities to verify the required vendor inspection has been performed or a waiver documented.
- ° Deficiencies if applicable have been resolved prior to shipment.

Supplier control and use of Certificates of Conformance, when required by procurement documents, are evaluated by audits, vendor inspections or tests to ensure they are valid. The supplier's records shall include a description of those nonconformances from the procurement requirements dispositioned "accept as is" or "repair," including evidence of acceptance by the purchaser's engineering organization.

Site receiving inspection ensures that, for nuclear safety-related items received at the South Texas Project, there is accompanying documentation that indicates review and concurrence by the appropriate prime contractor or designee, that the item complies with established requirements or has an authorized waiver prior to shipment. BEC Quality Assurance audits and surveillances are performed to ensure compliance with these criteria.

HL&P Design Office Quality Assurance ensures by audits/surveillance of the AE/construction manager's vendor surveillance function that source surveillance and inspection are performed in accordance with the quality assurance program. In addition, HL&P Quality Assurance performs audits and surveillances of activities commencing with receiving inspection at the site to ensure proper controls of purchased material and equipment are exercised and to ensure overall compliance.

8.0 Identification and Control of Material, Parts and Components

The HL&P Project Quality Assurance Plan requires that prime contractors and suppliers establish written procedures for the identification and control of materials, parts and components including partially assembled components. Prime contractor's and supplier's procedures shall include the documented verification of correct identification of materials, components and subassemblies, and that the method of identification does not affect the function or quality of the item prior to release of the items for assembly or installation. These procedures must:

- ° Establish controls to identify and control materials (including consumables), parts and components (including partially fabricated subassemblies).
- ° Provide specific identification and traceability controls when required by codes, standards or specifications.

- ° Provide a method for identification and control of incorrect or defective items. This system includes verification and documentation prior to release for fabrication, assembling, shipping and installation.

BEC and ESI Quality Assurance verify that the above criteria are incorporated into the quality/construction procedures during the review/approval cycle and then follows up with audits and surveillances to verify compliance.

In addition, HL&P Quality Assurance performs audits and surveillances on prime contractors for evaluation of the conformance to identification and control criteria.

9.0 Control of Special Processes

The HL&P Project Quality Assurance Plan requires that written procedures be established by prime contractors and subcontractors for the activities associated with all special processes. For special processes the qualification of personnel, procedures and equipment relating to specific codes, standards, specifications and contractual requirements shall be documented and maintained current.

Special Processes - special manufacturing processes, metallurgical, chemical, material cleaning, welding, plating and other processes where assurance of the process quality is dependent largely on the inherent skill of the operator and cannot be assured by the inspection of articles alone.

Special processes for the South Texas Project include but are not limited to:

- ° Welding
- ° Heat treating
- ° Cadwelding
- ° Nondestructive examination
- ° Chemical cleaning and flushing
- ° Coatings

Organizational responsibilities are defined in procedures for qualification of special processes, equipment and personnel. These responsibilities will include the provision to assure that special processes are performed by qualified personnel using procedures qualified and approved in accordance with applicable codes, standards or other requirements.

Special processes are performed under controlled conditions by qualified personnel using procedures qualified and approved in accordance with applicable codes, standards or other requirements. For special processes not covered by existing codes or standards the specific equipment, personnel qualification and procedure qualification requirements are defined prior to application of the special process.

Records are maintained for the qualification of procedures, equipment and personnel associated with special processes. Records are in sufficient detail to clearly define the procedures, equipment or personnel being qualified; criteria or requirements used for qualification; and the individual approving the qualification.

HL&P Quality Assurance verifies that the special process control criteria are met by BEC and ESI review and approval of special process procedures and their performance of audits and surveillances to ensure compliance.

HL&P will retain the capability with a quality control group to perform, as directed by the PQAM, certain special process examinations (NDE) during the inspection verification process. These examinations will be performed by personnel qualified in accordance with SNT-TC-1A-80 using qualified procedures approved by HL&P NDE Level III personnel. Instances of recommendations within SNT-TC-1A-80 ('shoulds') will be considered mandatory requirements ('shalls'). This exception will be reflected in approved implementing procedures.

HL&P Quality Assurance performs audits and surveillances of special process activities to ensure compliance with all aspects of the Quality Assurance Program.

10.0 Inspection

The HL&P Project Quality Assurance Plan requires the prime contractor for construction and subcontractors to establish and implement an inspection operation whose activities are independent from the group performing the activities being inspected. The training, qualifications and certifications of inspectors include criteria from appropriate codes, standards and procedures. Inspector training shall be documented and kept current. Inspection activities relating to construction, fabrication, installation and testing are documented, kept current and identify all mandatory inspection hold and test points and the criteria to be witnessed by authorized inspectors. Operations and inspections (including rework, replaced items) are performed in predetermined, documented sequences. Deviations or deletions must be accomplished in accordance with approved and documented systems. Inspection procedures include all required inspection operations defined by the specifications, drawings, codes and standards. These procedures provide for the following:

- a. Identification of characteristics and activities to be inspected
- b. A description of the method of inspection
- c. Identification of the individuals or groups responsible for performing the inspection operation

- d. Acceptance and rejection criteria
- e. Identification of required procedures, drawings and specifications and revisions
- f. Recording the identification of inspector and/or data recorder if applicable and the results of the inspection operation
- g. Specifying necessary measuring and test equipment including accuracy requirements and verification of calibration
- h. Evaluation of inspection results

Where direct inspections are impossible or disadvantageous, in-process monitoring is specified in the inspection procedures and both direct and in-process monitoring are used when control is inadequate without both. All required procedures, specifications and drawings are made available to the inspectors prior to performing inspection. If mandatory inspection hold points are required beyond which work cannot proceed without the specific consent of the designated representative, the specific hold points will be indicated in appropriate documents. Inspection results are documented, evaluated and their acceptability determined by a responsible individual or group.

BEC and ESI Quality Assurance verify that inspection control criteria are complied with by review and approval of the inspection procedures and by audits and surveillances of inspections.

HL&P Quality Control may occasionally perform inspection verifications as deemed necessary by the Project Quality Assurance Manager.

HL&P, BEC and ESI Quality Assurance perform audits and surveillance of inspection activities to ensure compliance with all aspects of the quality assurance program.

The HL&P inspectors are trained and certified by a program conforming to ANSI N45.2.6 and as applicable, SNT-TC-1A-80. Instances of recommendations within SNT-TC-1A-80 ('shoulds') will be considered mandatory requirements ('shall'). This exception will be reflected in approved implementing procedures.

11.0 Test Control

The HL&P Project Quality Assurance Plan requires that a test control program be developed and documented by the prime contractors and contractors for tests that they are responsible for, which demonstrates that the facility performs in accordance with the South Texas Project requirements and specifications. The training, certification of personnel, calibration and certification of test equipment, system or component status, environmental conditions, inspection hold points and configuration of the items to be tested are included in the procedures. Test results are documented, evaluated and the acceptance status determined by the authorized departments.

Test procedures or instructions provide for the following as required:

- a. The inclusion of requirements and acceptance limits contained in applicable design and procurement documents
- b. Instructions for performing the test
- c. Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including their accuracy requirements, completeness of item to be tested, suitable and controlled environmental conditions and provisions for data collection and storage
- d. Mandatory inspection hold points for witness by Owner and the contractor's inspector (as required)
- e. Acceptance and rejection criteria
- f. Methods for documenting or recording test data and results
- g. Provisions for assuring that test prerequisites have been met
- h. Evaluation of results

BEC and ESI Quality Assurance verify inclusion of adequate test control criteria by review and approval of test procedures. HL&P, BEC and ESI Quality Assurance perform audits and surveillance to verify that the controls are implemented and effective.

The test control activities are an example of a case in which HL&P Project Quality Assurance monitoring activities and the Operational Quality Assurance monitoring activities will interface and in some instances overlap. HL&P Project Quality Assurance procedures will specifically define the responsibilities for this period.

12.0 Control of Measuring and Test Equipment

The HL&P Project Quality Assurance Plan requires the establishment, documentation and implementation of a Measuring and Test Equipment Control System. The system is to include calibration techniques, accuracy, frequency and maintenance of all measuring instruments/test equipment used in the measuring, inspection and monitoring of nuclear safety-related items. Calibration and maintenance data shall be filed and kept current. Calibration standards are to be traceable to nationally recognized standards where standards exist. If standards do not exist, the basis for calibration of the equipment shall be documented. If measuring or test equipment is found to be out of calibration, missing or lost, an investigation is required to be performed to determine the validity of the use of the instrument and whether measurements or tests are required to be reperformed. Reinspection when required will be documented.

Equipment is identified and traceable to the calibration test data and suitably marked to indicate calibration due date.

Measuring and test equipment is calibrated at specified intervals and based on the required accuracy, purpose, frequency of use, stability characteristics, and other conditions affecting the measurement. Calibration of this equipment is against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated, or when this is not possible, have an accuracy that assures the equipment being calibrated will be within required tolerance and that the basis of acceptance is documented and authorized by responsible management.

Calibrating standards will, when possible, have greater accuracy than standards being calibrated. Calibrating standards with the same accuracy may be used if they can be shown to be adequate for the requirements and the basis of acceptance is documented and authorized by responsible management.

BEC and ESI Quality Assurance review and approve calibration procedures to ensure these criteria are incorporated. In addition, HL&P, BEC and ESI Quality Assurance perform audits and surveillances to verify compliance.

In the conduct of its inspection verifications, as directed by the PQAM, HL&P Quality Control is required to use measuring and test equipment of the appropriate accuracy level which is controlled by procedures meeting the requirements of this section.

13.0 Handling, Storage and Shipping

The HL&P Project Quality Assurance Plan requires that for nuclear safety-related items, written procedures be developed in accordance with design requirements, specifications and standards to control the cleaning, handling, storage, packaging, shipping and preservation to preclude damage and deterioration by environmental conditions. The activities are to be accomplished by appropriately trained and experienced personnel.

BEC and, as appropriate, ESI Quality Assurance review and approve quality construction procedures for receiving, handling, storage and cleaning to verify that the appropriate criteria of Regulatory Guide 1.38 and ANSI N45.2.2 are included. Periodic audits and surveillances are conducted by HL&P, BEC and ESI Quality Assurance to verify compliance with the procedures.

14.0 Inspection, Test and Operating Status

The HL&P Project Quality Assurance Plan requires that the prime contractor and construction contractors indicate the current inspection, test and operating status of nuclear safety-related items through the use of stamps, markings, tags or other suitable means. Procedures include the requirements for:

- a. Controlling the application and removal of inspection status indicators such as tags, markings, labels and stamps
- b. Documenting the status of nonconforming, inoperative, or malfunctioning structures, systems and components to prevent inadvertent use

- c. Defining, controlling and documenting the use, application and removal of inspection tags, labels or markings which identify the status of inspections or tests performed and attest to the acceptability of the structure, system or component
- d. Controlling the altering of the sequence of required tests, inspections and other operations.

BEC and ESI Quality Assurance reviews and approves these procedures and conduct periodic audits and surveillances to assure compliance. HL&P Quality Assurance also conducts audits and surveillances to assure compliance.

15.0 Nonconforming Materials, Parts or Components

The HL&P Project Quality Assurance Plan requires that HL&P maintains and the prime contractors' Quality Assurance Programs include a system which is documented by written procedures for the identification, segregation and disposition of nonconforming materials, parts and components. The procedures shall specify the preparation and handling of nonconformance documents, segregation requirements and which groups are responsible for review and disposition of the items. Documentation identifies the nonconforming item; describes the nonconformance, the disposition of the nonconformance and the inspection requirements; and includes signature approval of the disposition and final closeout. Nonconformances are corrected or resolution determined prior to initiation of the preoperational test program on the item. Rework, repairs and subsequent reinspection and tests are conducted in accordance with the original inspection and test requirements or accepted alternatives. These tests shall be performed in accordance with controlled procedures and contain mechanisms for providing information to the identifying group as to the disposition of the nonconformance. For NSSS items, the organization responsible for dispositioning of the nonconformance shall obtain concurrence of the Westinghouse Site Representative. HL&P Quality Assurance performs trend analysis of HL&P, BEC and ESI nonconformances. Procedures are established by HL&P to report significant deficiencies during the design, construction and startup phase to HL&P executive management and to the Nuclear Regulatory Commission in accordance with 10CFR50.55(e) and 10CFR21 where applicable.

HL&P, BEC and ESI Quality Assurance perform periodic audits and surveillance to assure compliance.

16.0 Corrective Action

The HL&P Project Quality Assurance Plan for the South Texas Project requires that a system be established and documented by HL&P and the prime contractors which defines the responsibilities, authorities and methods used by specific groups involved in the evaluation of nonconformances and trending to determine the need for corrective action. The system includes measures to identify the cause of significant conditions adverse to quality, measures to ensure that the root causes are corrected, and

measures to ensure that timely action is taken. Follow-up is performed to ensure the effectiveness of corrective action and that appropriate levels of management are informed of the results. HL&P performs trend analysis of HL&P, BEC and ESI identified deficiencies to determine the need for corrective action. Specific documents to be trended are identified in approved procedures. HL&P, BEC and ESI Quality Assurance perform audits and surveillances to assure compliance.

17.0 Quality Assurance Records

The HL&P Project Quality Assurance Plan requires that a Quality Assurance record system be developed by HL&P and the prime contractors for the South Texas Project. The record system provides evidence that activities relating to quality are defined, implemented and that inspection and test

documents contain a description of the type of observation, reference to nonconformance reports, evidence relating to status of observation, date and inspector identification.

Quality records shall include reviews, audits, reports, specifications, nonconformance reports, analyses, personnel and equipment qualification procedures.

The HL&P Project Quality Assurance Plan requires that HL&P and prime contractors establish requirements to ensure that records generated during the design, procurement and construction are identifiable, retrievable and meet the requirements of 10CFR50, Appendix B, and ANSI N45.2.9 as endorsed by Regulatory Guide 1.88.

As an alternative to the ANSI N45.2.9 storage requirements, records may be maintained for the South Texas Project in a two-hour rated fire resistant file room meeting NFPA No. 232-1975 including the following provisions:

- ° An automatic fire suppression system and an early warning fire detection system is utilized.
- ° Records are stored in fully enclosed metal cabinets
- ° Smoking and eating/drinking are prohibited within the records storage facility
- ° Work not directly associated with record storage or retrieval is prohibited within the records storage facility
- ° Ventilation, temperature and humidity control equipment is controlled where they penetrate fire barriers bounding the storage facility.

HL&P, BEC and ESI Quality Assurance perform audits and surveillances to assure compliance.

18.0 Audits

The HL&P Project Quality Assurance Plan establishes the requirement that HL&P, prime contractors and subcontractors develop, document and implement audit activities which are structured in accordance with the requirements of ANSI N45.2.12 for the South Texas Project. As required by the ANSI standard, results of audits are presented for review to management of the audited organization and, in the case of HL&P performed audits the HL&P Executive Vice President, Nuclear Group. Where indicated HL&P performs follow-up action.

HL&P has the ultimate responsibility for the auditing of quality related activities on the project. HL&P Corporate audits are performed primarily on the HL&P Project Quality Assurance group, HL&P corporate organizations providing services to the project and Westinghouse. HL&P Project Quality Assurance is primarily responsible for audits of the Engineer/Construction Manager, constructor, subcontractors and the HL&P Project team organizations. Cases may arise in which audits may be required by either the Corporate or Project audit groups in the primary area of responsibility of the other group.

The prime contractors and subcontractors perform quality related audits of internal activities and suppliers of material, components and systems.

HL&P, BEC and ESI perform supplemental audits when required, based on such factors as significant changes in the Quality Assurance Program, results of trending programs or investigations into the root causes of problems.

TABLE 1

ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE

The STP Quality Assurance Program complies with the following ANSI Standards and associated Regulatory Guides except as noted:

<u>STANDARD</u>	<u>TITLE</u>
ANSI N45.2-1971 R.G. 1.28 (Rev. 0, 6/72)	Quality Assurance Program Requirements for Nuclear Facilities
ANSI N45.2.1-1973 R.G. 1.37 (Rev. 0, 3/73) (see Notes 8 through 10)	Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants
ANSI N45.2.2-1972 R.G. 1.38 (Rev. 0, 3/73) (see Notes 11 through 16)	Package, Shipping, Receiving, Storage and Handling of Items of Nuclear Power Plants
ANSI N45.2.3-1973 R.G. 1.39 (Rev. 0, 3/73) (see Notes 17 and 18)	Housekeeping During the Construction Phase of Nuclear Power Plants
ANSI N45.2.4-1972 R.G. 1.30 (Rev. 0, 8/72) (see Notes 19 and 20)	Installation, Inspection and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations
ANSI N45.2.5-1974 (see Notes 1 and 2)	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants
ANSI N45.2.6-1973 R.G. 1.58 (Rev. 0, 8/73) As modified by positions C.5, C.6, C.7, C.8 and C.10 of Rev. 1 (see Note 33)	Qualifications of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants
ANSI N45.2.8-1975 Reg. 1.116 (6/76) (see Notes 21 through 23)	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
 (Continued)

ANSI N45.2.9-1974 R.G. 1.88 (Rev. 2, 10/76) (see Notes 24 through 26)	Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants
ANSI N45.2.10-1973 R.G. 1.74 (Rev. 0, 2/74)	Quality Assurance Terms and Definitions
ANSI N45.2.11-1974* R.G. 1.64 (Rev. 2, 6/76) (see Notes 3 through 7)	Quality Assurance Requirements for the Design of Nuclear Power Plants
ANSI N45.2.12-1977 R.G. 1.144 (Rev. 1, 9/80) (see Note 32)	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
ANSI N45.2.13-1976 R.G. 1.123 (10/76) (see Notes 27 through 31)	Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants
ANSI N45.2.23-1978 R.G. 1.146 (Rev. 0, 8/80)	Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants

Exception Notes

1. ANSI N45.2.5-1974, Section 4.8, states "Pumped concrete must be sampled from the pump line discharge." In lieu of this statement, in-process strength samples of pumped concrete are taken at the delivery point. Correlation tests of air content, slump, and temperature are performed to verify these plastic properties of the concrete at the placement point in accordance with the following frequency requirements:
 - a. A minimum of 2 correlation tests are performed for each pumped placement exceeding 200 cu. yds.
 - b. Otherwise, a minimum of 2 correlation tests per week are performed when any individual pumped placement during a week requires delivery of more than one truckload of concrete.
 - c. During a week when a pumped placement exceeding 200 cu. yds. is made, the correlation tests performed on that placement will satisfy the weekly requirement for performing two correlation tests as specified in Item B above.

When any of the specified limits and tolerances on loss of air content, slump, or temperature are exceeded at the placement point, correlation tests between the delivery point and placement point will be accomplished for each 100 cu. yds. of concrete placed as long as limits and tolerances

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(Continued)

are exceeded. If two consecutive tests are out of tolerance, corrective action will be implemented to adjust the limits for the concrete entering the pump intake so that no concrete from the subsequent trucks will enter the pump intake as long as the tolerances are exceeded.

"Correlation Tests," "Delivery Point," and "Placement Point" are as defined in ANSI N45.2.5-1978, Section 1.4.

2. Samples and frequency for cadweld testing is in accordance with ACI-359/ASME Section III, Division 2, issued for trial use and comment in 1973, including addenda 1 through 6, (see Sections 3.8.1.6.3 and 3.8.3.6.3 of the STP Final Safety Analysis Report).
- *The following interpretations (Notes 3 through 7) of ANSI N45.2.11-1974 and Regulatory Guide 1.64, Rev. 2-6/76, apply to HL&P, their contractors and consultants working under HL&P's Quality Program.
3. Section 3.1, Design Input Requirements, General. This section implies that all necessary design input (as listed in Section 3.2) should be available prior to the start of a design activity. In practice, certain design activities are initiated before the firm input requirements are available. (For example, foundation designs prepared based on preliminary information or equipment sizes and mounting, embedded conduit run based on preliminary estimates of circuit requirements, etc.) The design phase QA program will be structured to ensure that all necessary design input is available before completion of final design of the work affected by the input, and that final design input is available for use in verification of the final design.
 4. Section 4.1, Design Process, General. Paragraph 3 implies traceability back from final design to the source of design input. In practice, a literal interpretation of this is not always possible. For example, final design drawings do not identify the related calculations. This paragraph will be interpreted to mean that it shall be possible to relate the criteria used and analyses performed to the final design documents and that record files will permit location of analyses supporting specific design output documents.
 5. Section 4.2, Design Analyses. This section implies a requirement for retention of all calculations. In principle, it is considered good practice for the responsible engineer or engineering organization to retain all final calculations, and this will be done for all manual calculations covered by the program. However, for computer programs only documentation of the design input, assumptions made in the analyses, results obtained, and evidence of verification will be retained since permanent retention of all versions of all computer programs is not considered practical or necessary if sufficient information is available for a competent individual to verify the results using the input and assumptions.

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

6. Section 10, Records. In-process documentation, relating to checking and coordination of drawings (for example, check and coordination prints) or copies of marked-up specifications used to solicit comments shall be retained until the drawing or specification is approved and issued for use outside of Engineering. Such in-process documents will be available for review/audit until the document is approved, but may be discarded once the document has been approved. In the first sentence of the second paragraph the phrase "final design documents" shall mean those documents which are the latest revision that has been issued for use.
7. Regulatory Position, Section C-2: If, in an exceptional circumstance, the originators' immediate supervisor is the only technically qualified individual available, the design verification or checking will be conducted by the supervisor with the following provisions:
 - a. The other requirements of Regulatory Guide 1.64 will be met.
 - b. The justification will be individually documented and approved by the next level of supervision.
 - c. Quality Assurance audits will include review of the frequency and effectiveness of the use of the immediate supervisor to assure that this provision is used only in exceptional circumstances.
8. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality. This is consistent with Section II, Paragraphs 2 and 3 of ANSI N45.2-1971 which provides for examination, measurement, or testing to assure quality or indirect control by monitoring of processing methods. However, final cleaning or flushing activities will be performed in accordance with procedures specific to the system.
9. Section 4, Preinstallation Cleanliness. This section states, "Items should not be delivered to the point of installation site sooner than necessary unless the installed location is considered a better storage area." As an alternate to this requirement, items may be delivered to the installation site sooner than absolutely necessary when determined to be advantageous for other considerations, for example, reduced handling or easier access, thereby reducing susceptibility to handling damage. In all such cases, equipment stored in place will be protected in accordance with Section 5 of ANSI N45.2.1.

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

10. Section 3.1.2, HL&P interprets the lighting level of 100 footcandles to be guidance. It is HL&P's normal practice that the lighting level for determining "metal clean" of accessible surfaces of piping and components is determined by the inspector. Typically he uses a standard two-cell flashlight supplemented by other lighting as he deems necessary.
11. Section 2.7, Classification of Items. The four-level classification system may not be used explicitly. However, the specific requirements for each classification as specified in the standard will be applied to the items suggested in each classification and for similar items.

Classification differing from Section 2.7 will be considered acceptable provided no degradation is assured; for example, electric motors designed for outside service may be stored in Level C area rather than a Level B.
12. Section 6.2, Storage Areas. Paragraph 6.2.1 requires control and limited access to storage areas. In lieu of and to amplify this paragraph, the following will be applied:

Access to storage areas for Levels A, B and C will be controlled by the individual(s) responsible for material storage. While the above areas will be posted to limit access, other positive controls (other than that for the overall site area) or guards may not be provided. Level D areas will be posted with the storage level designation only.
13. Section 5.5, Correction of Nonconformances. This section provides for "rework" and "use as is" dispositions for nonconforming items. As an alternate, the "repair" disposition (as defined in ANSI N45.2.10-1973) will also be used.
14. Section 6.2.4, Storage of Food and Associated Items. Controlled areas, within storage areas, will be established for the storage of food, drink, and salt tablets. These areas will be controlled through normal supervision and inspection.
15. In Section 8, the control of documentation and records shall be in accordance with Section 17 of this Program Description.
16. Appendix A 3.4.2, Inert Gas Blankets. There may be cases involving large or complex shapes for which an inert or dry air purge flow is provided rather than a static gas blanket in order to provide adequate protection due to difficulty of providing a leakproof barrier. In these cases a positive pressure purge flow may be utilized as an alternative to the leakproof barrier.

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

17. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.
18. Alternative equivalent zone designations and requirements may be utilized to cover those situations not included in the subject standard; for example, situations in which shoe covers and/or coveralls are required but material accountability is not. In addition, zones might be combined into the next more restrictive category in order to reduce total number of zones.
19. Section 1.2, Applicability. The Standard is applied to the items and systems identified in Paragraph 1.1.1 and to additional systems depending on the nature and scope of the work to be performed and the importance of the item or service involved.
20. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.
21. Section 1.1, Scope. The term "important items" will be interpreted to apply to those activities or quality attributes of an item or service that could affect a nuclear safety-related characteristic. For example, if a barrier is required for leakage control, but serves no structural function, the leaktight characteristic would be considered "important," but appearance, dimensional requirements, and structural features would not necessarily be considered important; or if a pump casing is required for coolant boundary integrity, but the pump does not have to operate to provide for nuclear safety, those attributes which affect its operation would not be considered important from the standpoint of nuclear safety.

Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard.

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.

22. Section 3.3, Process and Procedures. The terms "installation site," "installation area," and "site" used in this standard shall be interpreted as follows:
 - a. "Installation site" or "site" will be interpreted the same as "construction site." When applied to documents, these may be at the central office or work area document control station.
 - b. Installation area - Immediate proximity of location where work is to be performed.
23. Section 3.5(e), Site Conditions. This requirement will be applied only if subsequent correction of adjacent nonconformances could damage the item being installed.

Section 4.6, Care of Items. HL&P retains the authority and is the "Responsible Organization" for temporary usage of equipment or facilities unless specific (i.e. on a case by case basis) or general authority is granted in writing to the Construction Manager's organization.
24. Section 1.4, Definitions. Quality Assurance Records - A document is considered completed when it has finished full processing and has been issued for use in design, procurement, construction, or manufacturing.
25. Section 1.4, Definitions. Authenticated Records - Those records which are clearly identified as a statement by the individual or organization holding responsibility. Handwritten signatures are not required if the document or printout is clearly identified as a statement by the reporting individual or organization.
26. For Appendix A, an installation shall be considered to be in an "as constructed" condition if it is installed within the tolerances established by Project Engineering indicated in the design output documents.
27. Section C.3 of the Regulatory Guide - A corrective action system may, depending upon complexity and/or importance to safety of the item or service provided, be imposed upon the supplier. When a corrective action system is imposed on a supplier, the applicable elements of Section 9.0 of the standard will be included and its implementation will be verified.
28. Section C.4 of the Regulatory Guide - Applicable information concerning the method(s) of acceptance of an item or service will be made available to receiving inspection personnel.

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

29. Section 4.2.a of the Standard - When evaluation of a supplier is based solely on historical supplier data, these data will primarily include HL&P's or a prime contractor's records that have been accumulated in connection with previous procurement actions. Data that includes experience of users of identical or similar products of the prospective supplier and product operating experience will be used if they become available; however, such data are normally available only to those involved in plant operations.
30. Section 10.2.d. of the Standard - The requirements of this section are interpreted as follows: The person attesting to a certificate shall be an authorized and responsible employee of the supplier and shall be identified by the supplier.
31. HL&P's position relative to ANSI N45.2.13-1976, Section 10.2.f., Verification of the Validity of Supplier Certificates and the Effectiveness of the Certification System, is as follows: The verification of the validity of supplier certificates and the effectiveness of the certification system are accomplished as an integral part of the total supplier control and product acceptance program, and no separate HL&P system exists that addresses itself solely to such verification. The degree of verification required will depend upon the type of item or service and their safety importance. The means of verification may include source witness/hold points, source audits, and document reviews; independent inspections at the time of material receipt; user tests on selected commodities, such as concrete components; and tests after installation on selected components and systems. All of these means verify whether or not a supplier has fulfilled procurement document requirements and whether or not a certification system is effective.
32. ANSI N45.2.12-1977, Section 4.5.1 states, "The audited organization shall provide a follow-up report stating the corrective action taken and the date corrective action was completed." This implies that the audited organization must provide the auditing organization with written notification detailing what corrective action was taken and when the corrective action was completed.

In actual practice, the audited organization will provide the auditing organization with documented corrective action including the date when the corrective action will be completed. The auditing organization will evaluate the corrective action response to determine if corrective action verification is necessary. If verification is necessary, the corrective action verification will be performed after the scheduled completion date and the results of the verification will be documented.

33. HL&P Vendor Surveillance shall comply with ANSI N45.2.6-1978 and R. G. 1.58 (Rev. 1, 9/80) only. Exception is taken to regulatory position C.1 for personnel who (1) approve preoperational, startup, and operational test

TABLE 1
ANSI STANDARD AND REGULATORY GUIDE COMPLIANCE
(continued)

results and (2) direct or supervise the conduct of individual preoperational, startup, and operational tests. These personnel will be qualified under the guidelines of ANSI N45.2.6-1978, rather than R. G. 1.8.

TABLE 2
HL&P MANUALS USED TO IMPLEMENT THE
QUALITY ASSURANCE PROGRAM

- ° Project Quality Assurance Plan
- ° Project Specific Quality Assurance Procedures Manual
- ° Support Division Quality Assurance Procedures Manual
- ° Project Engineering Procedures Manual
- ° Project Site Procedures Manual
- ° Project Licensing Procedures Manual
- ° Project Procurement Procedures Manual
- ° Project Management Procedures Manual
- ° Records Management Systems Procedures Manual

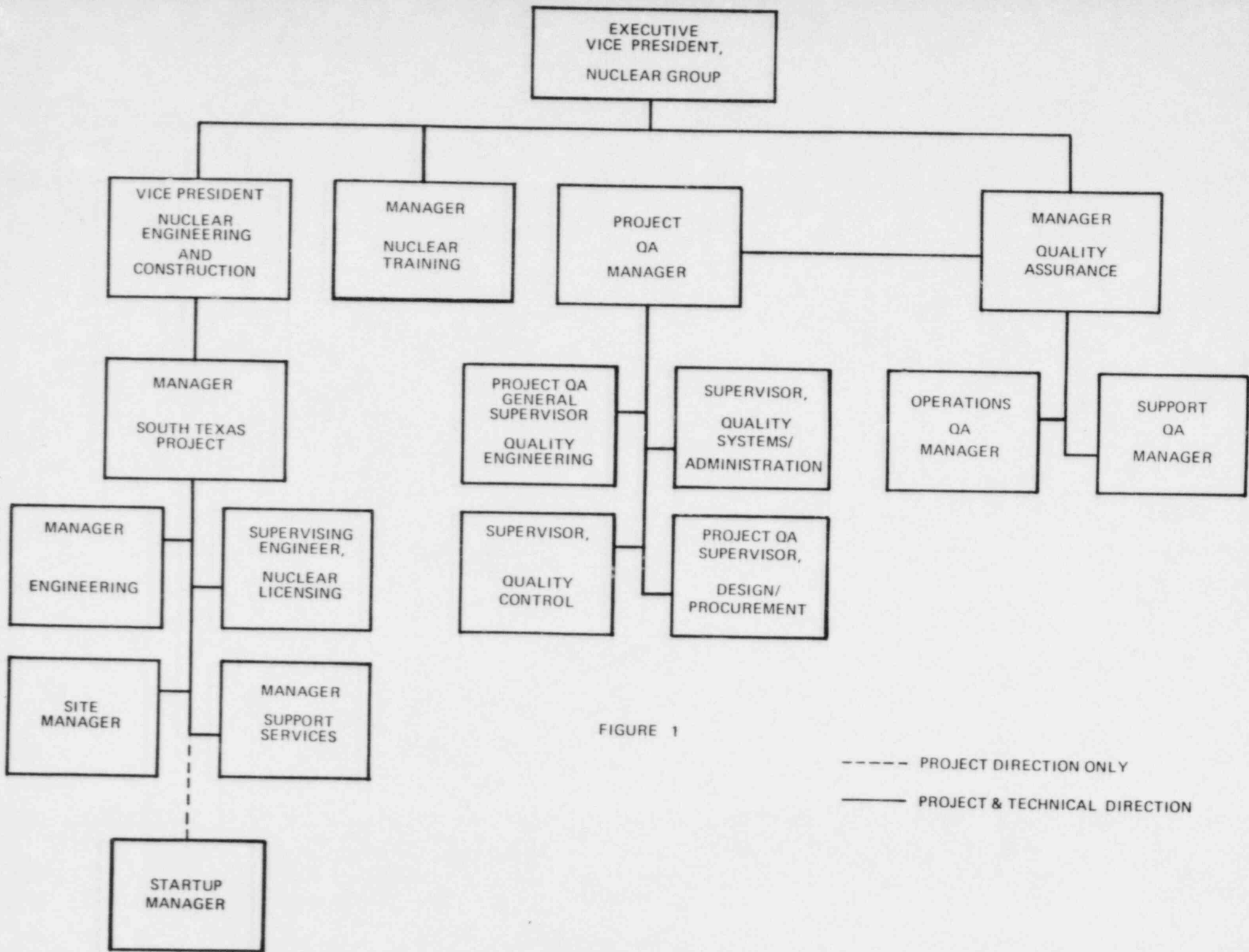


FIGURE 1

----- PROJECT DIRECTION ONLY
 _____ PROJECT & TECHNICAL DIRECTION

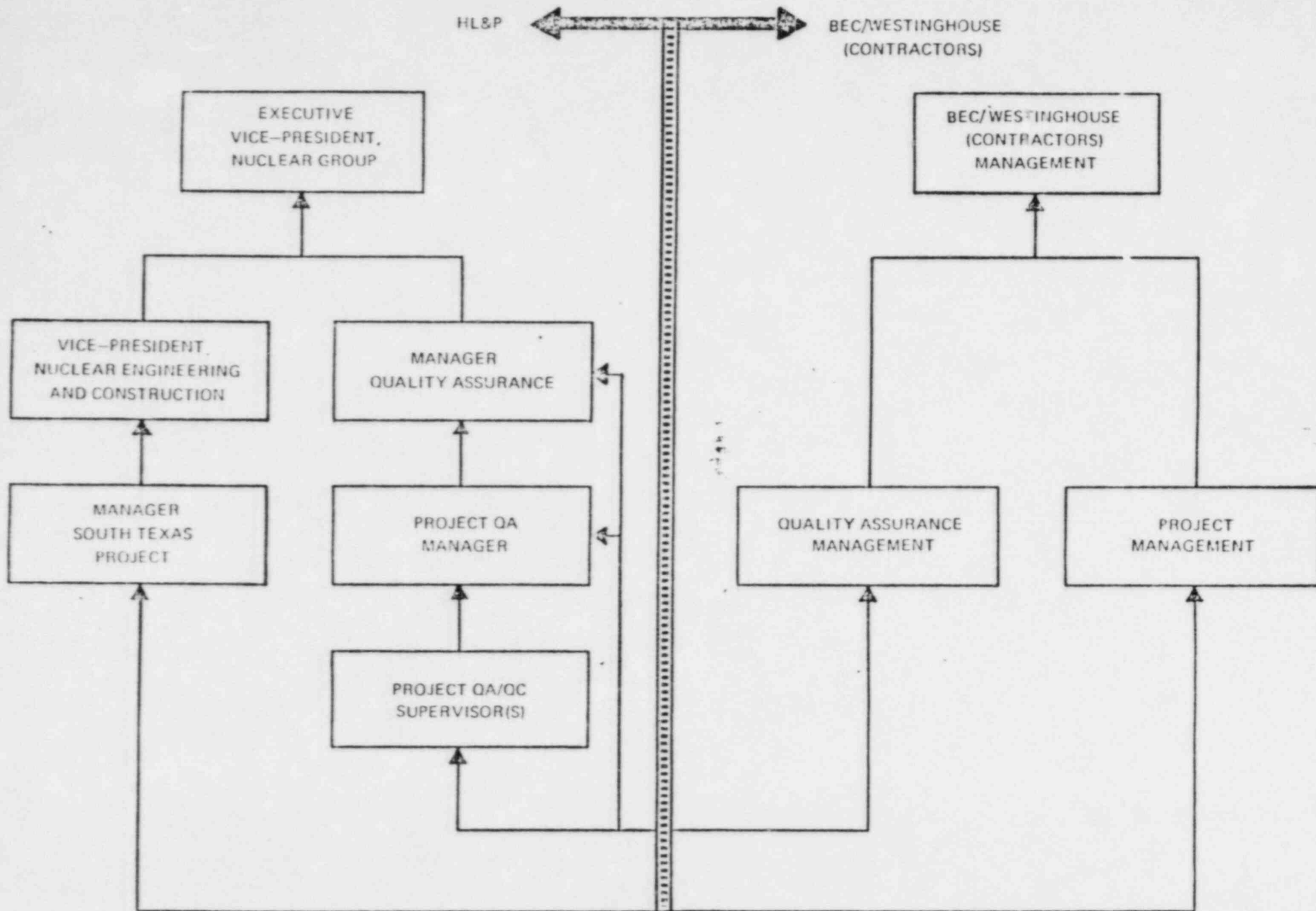


FIGURE 2

LINES OF COMMUNICATION
HL&P and BEC/WESTINGHOUSE (CONTRACTORS)

PART B

BECHTEL ENERGY CORPORATION
QUALITY ASSURANCE PROGRAM DESCRIPTION

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION
QUALITY ASSURANCE DURING DESIGN AND CONSTRUCTION

REVISION 6

DATE March 30, 1984

BECHTEL QUALITY ASSURANCE PROGRAM DESCRIPTION
FOR SOUTH TEXAS PROJECT

INTRODUCTION

The Bechtel Quality Assurance Program Description used by the Bechtel Energy Corporation for the South Texas Project is described in the NRC approved Bechtel Topical Report BQ-TOP-1, Rev. 3A, Bechtel Quality Assurance Program for Nuclear Power Plants and the modifications and additions described below.

Throughout the Program Description (Part B) where the Program Description states Thermal Power Organization, it shall be construed as synonymous with Bechtel Power Management.

Throughout the Program Description (Part B) where Construction Quality Control is stated, it shall be construed that Project Quality Control reports to the Project Quality Assurance Manager.

SCOPE OF SERVICES

Bechtel Energy Corporation is responsible for Engineering, Procurement and Construction Management activities at the South Texas Project. This activity includes receiving, storage, maintenance, receiving inspection and Quality Assurance functions. Bechtel Construction Management is responsible for management of the construction and quality assurance/quality control activities of the Constructor/Contractor(s). Construction Management consists of planning, scheduling, monitoring and evaluating the Constructor/Contractor(s) construction and quality assurance/quality control activities. The construction, field engineering, and quality control activities defined in the topical will be the responsibility of the Constructor/Contractor(s). The Constructor/Contractor(s) will be responsible for submitting to Bechtel, for approval, a quality program which is consistent and compatible with the applicable sections of Bechtel's Topical Report.

The following is a description of the South Texas Project modifications to meet the scope of the project and client requirements.

Introduction

Page 4 - item #5

Division Quality Policies - Guidance defining requirements and responsibilities for accomplishing Quality Program functions which may be modified, deleted by, or supplemented with project documents to meet specific project/owner requirements and the scope of the project. | 6

Section 1 - Organization

o 1.5.4 Division Construction

Managers of Division Construction provide technical and administrative direction to the Construction Department personnel. Managers of Division Construction are assisted by Construction Managers and Chief Construction Engineers, where assigned. Construction Managers are responsible for the management and technical direction of assigned projects, and for assuring that construction projects are provided with appropriate personnel and are following prescribed division practices and procedures for conduct of construction activities.

o 1.6.1 Project Quality Assurance

The project quality assurance program is directed by the Project Quality Assurance Manager who is responsible to assure that Quality Assurance or Quality Control actions listed below are accomplished in accordance with the requirements of the project:

- 1) Coordinate the functions of the project quality program, and serve as the focal point for project communication on matters relating to this program.
- 2) Coordinate project quality-related activities of Engineering, Procurement, Project Administration, Records Management System, and Construction.
- 3) Audit and surveillance of project quality-related functions and adherence to procedures. Advise management of the status of program implementation. Conduct prescheduled project audits and supplemental audits directed by the Project Quality Assurance Manager.
- 4) Review Supplier and Constructor/Contractor(s) quality assurance program requirements in procurement documents, conditional releases of nonconforming items at the construction site, and completed quality verification records packages prior to turnover to the client.
- 5) Concur with evaluation of recommended supplier's quality assurance program, in accordance with subsection 7.1. Evaluate supplier's Quality Programs for jobsite originated safety related purchases when determined necessary by the Project Quality Assurance Manager.
- 6) Take stopwork action when warranted.
- 7) Identify quality problems, initiate documented action leading to a solution, and verify implementation of solutions.
- 8) Review project plans and schedules for quality-related activities to assure timely and effective implementation of the quality assurance functions for the project.

- 9) Provide periodic reports to the Division Quality Assurance Manager and Project Manager evaluating the status of the project quality assurance program and advising of any problems requiring special attention.
- 10) Coordinate quality assurance functions within the project and with groups outside the division, such as M&QS and Procurement Supplier Quality.
- 11) Assure that quality assurance related procedures and manuals prepared by or used for the project meet project quality program requirements and initiate revisions when necessary.
- 12) Review, prior to use, Procurement Quality Surveillance Inspection plans and Quality Control instructions for clarity and the existence of the information described in Sections 7 and 10. In addition, evaluate the adequacy of selected plans and instructions by performing an in-depth review of:
 - a. Accuracy of translation of drawing and specification requirements.
 - b. Basis for determining inspection level and sequence.
 - c. Adequacy of inspection method.

This review provides assurance that the total quality program requirements inclusions are complete. Reviews of generic plans and instructions can be performed on a generic basis. In that case, the PQAM only verifies that the review of the generic plan or instructions has been performed.

- 13) Review and approve Constructor/Contractor(s) quality programs.
- 14) Prepare quality assurance descriptions in Safety Analysis Reports.
- 15) Review Nonconformance Reports and other quality problem related documents to determine trends, identify significant deficiencies, and recommend appropriate corrective action.

The field quality assurance program includes the capability to perform:

- o Receiving inspection of permanent plant material and equipment.
- o Maintenance and storage inspection of permanent plant equipment and material in Bechtel's custody.
- o Review of receiving and Bechtel QC documentation.
- o Surveillance inspection of work performed by Constructor/ Contractor(s). This inspection supplements the quality programs of the Constructor/Contractor(s) who have responsibility for their work and their quality verification.

Surveillance inspection includes either selected physical inspection at prescribed hold points and observation or witness of inspections performed by the Constructor/Contractor(s):

- o Reviewing quality control documentation.
- o Reviewing Bechtel and/or Constructor/Contractor(s) quality documentation.
- o Providing technical direction to testing laboratories and inspection Contractors.
- o Reviewing supplier quality verification document packages for completeness and traceability to the item(s).
- o Identifying quality problems, initiating action leading to solutions, and verifying implementation of solutions.
- o Reviewing Constructor/Contractor(s) quality verification documents.
- o Reinspection of Constructor/Contractor(s) completed work may be imposed as deemed necessary.

1.6.2 Project Engineering

- 3) Prepare specifications for Supplier and Constructor/Contractor(s) Quality Assurance Program.
- 5) Review and approve the design changes and approve nonconformance dispositions.
- 6) Review drawings, procedures, test data, manuals and reports submitted to Engineering by suppliers and Constructor/Contractor(s).
- 8) Provide support to Construction management relative to storage and maintenance of permanent plant equipment.

1.6.3 Project Construction Management

A Manager of Construction is assigned to each nuclear plant project involving construction or construction management assignment, and is responsible for the project field construction performance. The Manager of Construction is responsible for assuring that construction activities are performed in accordance with the design requirements as established by project engineering and other applicable requirements.

The project construction management organization is shown in Figure 11.

The Constructor/Contractor(s) are assigned first-level responsibility for the control of the quality of their work. Their performance is coordinated and monitored by the Bechtel field organization. The Bechtel Quality Assurance organization performs documented audits and surveillances and has the capability to perform surveillance inspection.

In cases where the Constructor/Contractor(s) are responsible for quality verification inspection or other quality assurance functions, the contract documents incorporate the requirements for the Constructor/Contractor(s) quality assurance program. Constructor/Contractor(s) quality assurance and quality control personnel are required to have the appropriate authority, organizational freedom, and independence within their own organization. Constructor/Contractor(s) program requirements are specified by incorporation of the requirements of Reg. Guide 1.28 (6/7/72) or the ASME Boiler and Pressure Vessel Code, Section III, as appropriate. In the event that the Constructor/Contractor(s) is unable to provide an acceptable program, Bechtel may assume quality verification inspection responsibilities or these may be contracted to another organization.

1.6.4 Project Procurement

The Project Procurement Manager receives technical and administration direction from the Manager, Division Procurement, LAPD through the Manager, Division Procurement, Houston and project direction from the designee Project Manager.

Section 3 - Design Control

Page 30 - first paragraph:

In the case of proposed changes to the original design initiated at the construction site, the design changes shall be reviewed, accepted and documented by Bechtel Project Engineering. Acceptance of design changes by Bechtel Project Engineering is required prior to implementation. For design changes proposed by suppliers, acceptance of the design change by Project Engineering is required prior to shipment of the item to the jobsite.

- third paragraph:

Certain other detail design work described below may be performed by Bechtel Engineering. This work is not subject to design verification or checking described above. The nature and scope will vary with each Engineering discipline. Civil Engineering design affecting safety-related structures, systems, and components is limited to functions such as the design of form details for concrete placement and design of temporary supports for reinforcing and embedded steel. Within Instrumentation and Electrical Engineering, these design functions include the preparation of isometric drawings of electrical conduit and instrumentation tubing and the detailing and selection of hangers and supports. Within Piping Engineering, these design functions are normally limited to the preparation of isometric drawings and detailing of small (two-inch nominal and under) piping using sizes, material, routing and support criteria provided by Engineering specifications. Sizing, separation, instrument location, support criteria and standard designs are developed by Bechtel Engineering within the program described above.

- fourth paragraph:

Suppliers are not allowed to change Bechtel design requirements or Bechtel reviewed supplier design documents without obtaining approval by Bechtel Project Engineering. Construction site changes to engineering design are documented by means of change notices or change requests which require authorization by Project Engineering. Significant or unique changes are authorized individually; Project Engineering may give written authorization in the form of specifications or other instructions to field organizations to make routine changes. Field organizations have the authority to approve changes to design details in cases where the original design details were prepared by that field organization.

Section 4 - Procurement Document Control

Page 32 - paragraph 3, item 1) through item 8) Page 33:

Replace the paragraph beginning "...The following describes the sequence of steps..." with the following paragraph:

Appropriate project procedures provide details to accomplish the administrative actions in processing procurement documents in the design office and at the jobsite.

Section 5 - Instructions, Procedures, and Drawings

Page 34 - sixth paragraph:

Field organizations prepare other procedures when engineering documents require amplification to perform various discipline activities associated with fabrication, cleaning, erection, installation, test, repair, modification, etc., of items.

Section 6 - Document Control

Page 35 - sixth paragraph:

Changes made to approved design documents by Project Engineering or proposed by field organizations are reviewed and approved by Project Engineering in accordance with established procedures which provide that changes are reviewed in the same manner as the original issue.

Section 7 - Control of Purchased Material, Equipment & Services

Page 37 item number 2):

- 2) Determination by Engineering and Quality Assurance that the supplier or Constructor/Contractor(s) quality program is capable of meeting the specified requirements. This may be based on evaluations by Procurement Supplier Quality for manufacturing suppliers or Quality Assurance for jobsite Constructor/Contractor(s), and field procurements.

Section 14 - Inspection, Test, and Operating Status

Page 50 - fourth paragraph:

Project Engineering and supervisory personnel are authorized to apply and remove identifying tags, markings, and labels on equipment in accordance with approved procedures. Quality Control personnel are the only ones authorized to direct application and removal of inspection status indicators. Bechtel, in cooperation with the plant owners' operating personnel, establishes a tagging procedure which delineates those authorized for applying and removing tags during preoperational testing phases.

Section 15 - Nonconforming Items

Page 51 - paragraph 2 items 2, 3 and 5):

- paragraph 2 item 4 - Delete

- 2) Determine interim disposition by field organizations.
- 3) Have Project Engineering approve dispositions.
- 5) Provide conditional release of nonconforming items upon approval of Quality Assurance.

- last paragraph:

The authority for disposition of nonconforming items follows the rules for approval of design changes described in Section 3 of this report. Quality Assurance reviews dispositions to determine that they are fully responsive to the conditions described in the nonconformance report. Quality Control is responsible for verification of rework and repair dispositions, applying inspection processes at least equivalent to that applied to the original work. "Repair" or "use as is" dispositions on nonconformances to procurement requirements at a supplier's plant must be accepted by Project Engineering.

Page 52 - second paragraph:

Nonconforming items discovered at final inspection which cannot be corrected by rework or completion of originally prescribed processing are required to be identified, tagged, and/or segregated. Discrepancies in work not yet submitted for final inspection which can be corrected by rework or completion of work processes are not considered to be nonconformances. For construction work performed by Bechtel, no further work can proceed on the nonconforming item until an approved disposition is implemented, unless a conditional release is approved by Quality Assurance. Suppliers, and Constructor/Contractor(s), as required by procurement documents, apply similar procedures involving their quality assurance functions. Bechtel Procurement Supplier Quality Representatives are instructed to withhold release for shipment until all nonconformances have been resolved or an interim disposition is approved by Project Engineering.

The following is a modification of Appendix "A" of the topical which describes Bechtel's position on Regulatory Guide and ANSI standards:

- o Reg. Guide 1.58 Rev. 0, 8/73 Plus positions C.5, C.6, C.7, ANSI N45.2.6, 1973 C.8, and C.10 of Rev. 1
- o Reg. Guide 1.144 Rev. 1, 9/80
ANSI N45.2.12, 1977
Exception listed below
- o Reg. Guide 1.146 Rev. 0, 8/80
ANSI N45.2.23, 1978
Full Compliance - No exceptions

Exception

ANSI N45.2.12-1977, Section 4.5.1 states, "The audited organization shall provide a follow-up report stating the corrective action taken and the date corrective action was completed." This implies that the audited organization must provide the auditing organization with written notification detailing what corrective action was taken and when the corrective action was completed.

In actual practice, the audited organization will provide the auditing organization with documented corrective action including the date when the corrective action will be completed. The auditing organization will evaluate the corrective action response to determine if corrective action verification is necessary. If verification is necessary, the corrective action verification will be performed after the scheduled completion date and the result of the verification will be documented.

Appendix A

Page A-4 - item #2 - second paragraph

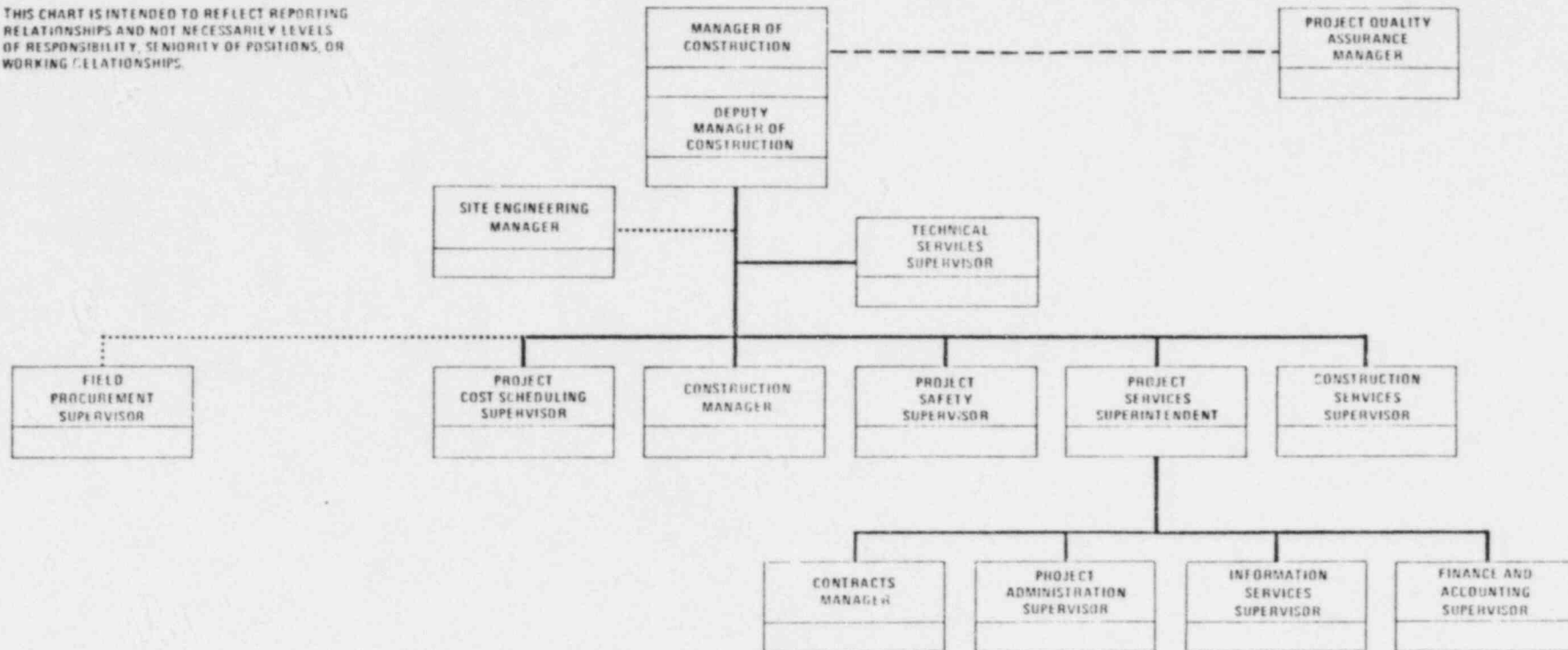
"Access to storage areas for Levels A, B, and C will be controlled by the individual(s) responsible for material storage. While the above areas will be posted to limit access, other positive controls (other than that for the overall site area) or guards may not be provided. Level D areas will be posted with the storage level designation only."

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Attachment A is a modified Table I to the topical which describes Bechtel's Quality Program Documents.

SOUTH TEXAS PROJECT CONSTRUCTION MANAGEMENT ORGANIZATION CHART

THIS CHART IS INTENDED TO REFLECT REPORTING RELATIONSHIPS AND NOT NECESSARILY LEVELS OF RESPONSIBILITY, SENIORITY OF POSITIONS, OR WORKING RELATIONSHIPS.



LEGEND:
 TECHNICAL & ADMINISTRATIVE ———
 PROJECT COORDINATION - - - - -
 PROJECT DIRECTION ······

REVISION 6

BECHTEL QUALITY PROGRAM DOCUMENTS

<u>DOCUMENT</u>	<u>ORIGINATING AUTHORITY</u>	<u>REVIEW FOR QA POLICY AND PROGRAM REQUIREMENTS</u>	<u>AUTHORIZING APPROVAL</u>	<u>CONTENTS</u>
* BECHTEL QUALITY ASSURANCE MANUAL- ASME NUCLEAR COMPONENTS (BQAM- ASME III)	MANAGER C&S/R&E	QA-BPC** DIVISION QUALITY ASSURANCE MANAGER	PRESIDENT AND APPROPRIATE AUTHORIZED CODE INSPECTION AGENCY	POLICIES AND PROCEDURES FOR OVERALL BECHTEL PROGRAM APPLICABLE TO ASME WORK
QUALITY ASSURANCE PROCEDURES	PROJECT QUALITY ASSURANCE MANAGER	N/A	DIVISION QUALITY ASSURANCE MANAGER	PROCEDURES FOR CONDUCTING PROJECT QUALITY ASSURANCE ACTIVITIES
ENGINEERING DEPARTMENT PROCEDURES AND INSTRUCTIONS	DESIGNATED INDIVIDUALS	DIVISION QUALITY ASSURANCE MANAGER***	MANAGER DIVISION ENGINEERING***	DEFINITION OF RESPONSIBILITIES AND PROCEDURES FOR DESIGN, DESIGN REVIEW, AND DOCUMENT CONTROL IN THE ENGINEERING DEPARTMENTS
PROCUREMENT MANUALS (QUALITY PROGRAM RELATED)	PROCUREMENT	QA-BPC**	COGNIZANT PROCUREMENT MANAGERS	PROCEDURES FOR HOME OFFICE AND FIELD PROCUREMENT NECESSARY TO FOLLOW TPO QUALITY POLICY
* PROCUREMENT SUPPLIER QUALITY MANUAL	MANAGER PROCUREMENT SUPPLIER QUALITY	QA-BPC**	MANAGER PROCUREMENT SUPPLIER QUALITY	PROCUREMENT SUPPLIER QUALITY PROCEDURES
M&QS PROCEDURE AND POLICY GUIDES (QUALITY PROGRAM RELATED)	MANAGER M&QS	QA-BPC**	MANAGER M&QS	POLICIES AND PROCEDURES FOR PERFORMING M&QS FUNCTIONS
TECHNICAL SUPPORT PROCEDURES MANUAL	TECHNICAL SERVICES	DIVISION QA MANAGER	MANAGER TECHNICAL SERVICES	RESPONSIBILITIES AND PROCEDURES FOR PROJECT SUPPORT GROUPS
PROJECT MANUALS PROCEDURES (QUALITY PROGRAM RELATED)	COGNIZANT PROJECT TEAM MEMBER	PQAE	COGNIZANT MANAGERS	NOTE 2

*AVAILABLE ON REQUEST TO APPROPRIATE REGULATORY AGENCIES

**INCLUDES REVIEW BY DIVISION QUALITY ASSURANCE MANAGERS

***AREA OFFICE EDP'S ARE REVIEWED AND APPROVED BY THE AREA OFFICE QUALITY ASSURANCE MANAGER AND AREA OFFICE MANAGER OF ENGINEERING. THESE EDP'S SHALL BE SENT TO DIVISION QUALITY ASSURANCE STAFF FOR POST APPROVAL REVIEW.

NOTES: 1 REVISIONS TO THESE DOCUMENTS REQUIRE THE SAME REVIEW AND APPROVAL AS THE ORIGINAL.
2 THERE ARE PROVISIONS FOR PROJECT UNIQUE MODIFICATIONS TO THE ABOVE DOCUMENTS TO DELINEATE SPECIFIC PROJECT REQUIREMENTS BUT NOT DEPART FROM THE PROGRAM REQUIREMENTS OF THIS REPORT. REVIEW AND APPROVAL AUTHORITY FOR SUCH MODIFICATIONS ARE DEFINED WITHIN THE GOVERNING PROCEDURES.

Bechtel Power Corporation

Engineers—Constructors

15740 Shady Grove Road
Gaithersburg, Maryland 20760
301-258-3000



October 6, 1980

Mr. W. P. Haass, Chief
Quality Assurance Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject:
Organizational Changes
QAS-80-301; File: 7.10

Dear Mr. Haass:

As directed in your August 15, 1977, acceptance letter of the Bechtel QA Topical Report, BQ-TOP-1, Rev. 2A, and subsequent to discussions with members of your staff, the following description of organizational changes within the Bechtel Power Corporation are submitted for your information.

The Ann Arbor area office of the San Francisco Power Division has been designated the Ann Arbor Power Division in the Thermal Power Organization. Like the other power divisions, Ann Arbor will handle engineering and construction work along with all the supporting activities associated with power division work.

Attached to this letter are organization charts showing the Ann Arbor Power Division's reporting relationship in the Bechtel Organization and a chart showing the reporting relationships within the Ann Arbor Power Division.

Additionally, an organization change has been made in the Thermal Power management group. The reporting relationship for the quality assurance function within the Thermal Power Management function has been transferred from the Vice President, Planning and Quality Assurance to the Vice President responsible for the Procurement, Engineering, and Construction, Project Operations and Services functions, Thermal Power Management. These changes will be shown on a revised Thermal Power Organization chart, Figure 3 of BQ-TOP-1, Revision 3, which will be forwarded at a later date.

If you have any questions regarding these changes, please call me on (301) 258-3776.

Very truly yours,

A handwritten signature in cursive script that reads "J. M. Amaral".
J. M. Amaral, Manager
Division Quality Assurance

JMA:vpw

Attachment

THE BECHTEL ORGANIZATION

BECHTEL CORPORATION
BECHTEL HOLDING CORPORATION
BECHTEL INTERNATIONAL CORPORATION

July 14, 1989

BECHTEL CORPORATION
 1000 WEST 10TH AVENUE
 SUITE 1000
 DENVER, COLORADO 80202
 TEL: 303.733.1000
 FAX: 303.733.1001

BECHTEL INTERNATIONAL CORPORATION
 1000 WEST 10TH AVENUE
 SUITE 1000
 DENVER, COLORADO 80202
 TEL: 303.733.1000
 FAX: 303.733.1001

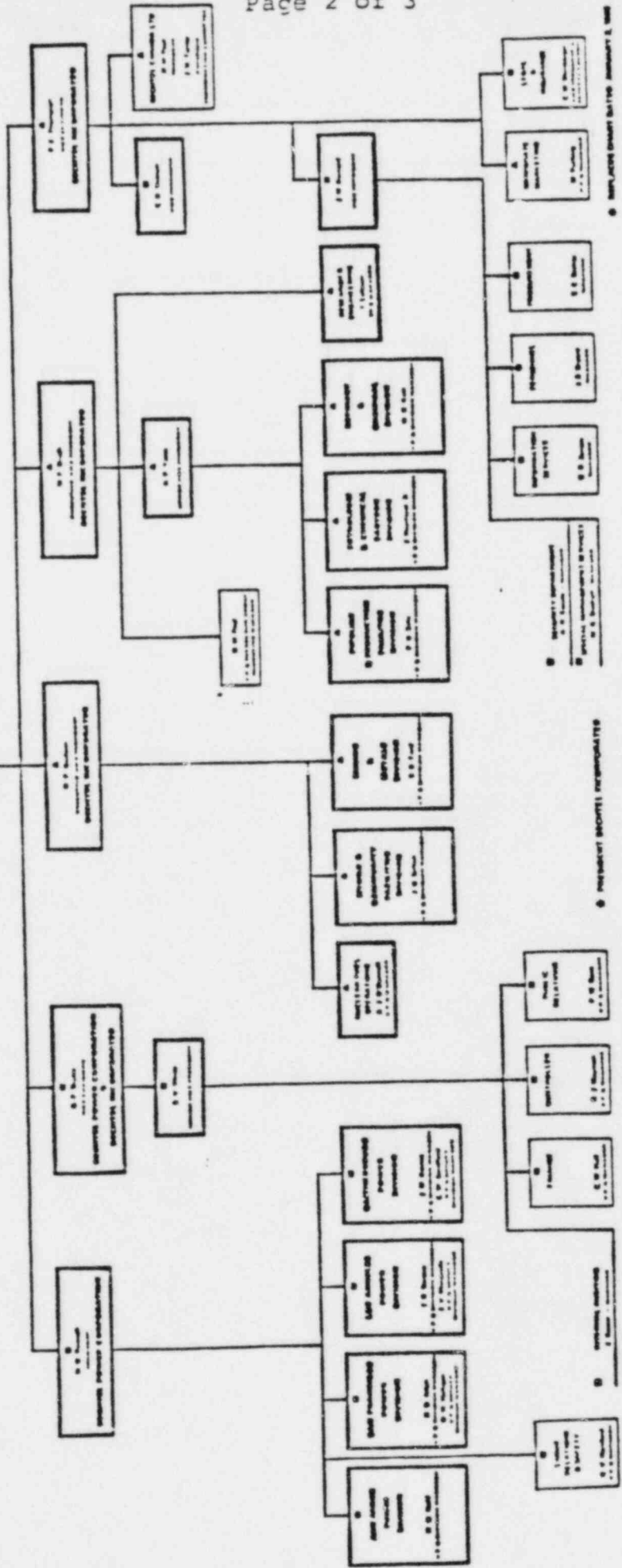
BECHTEL HOLDING CORPORATION
 1000 WEST 10TH AVENUE
 SUITE 1000
 DENVER, COLORADO 80202
 TEL: 303.733.1000
 FAX: 303.733.1001

BECHTEL INTERNATIONAL CORPORATION
 1000 WEST 10TH AVENUE
 SUITE 1000
 DENVER, COLORADO 80202
 TEL: 303.733.1000
 FAX: 303.733.1001

THE BECHTEL ORGANIZATION IS A GROUP OF COMPANIES THAT ARE ALL PARTS OF THE BECHTEL GROUP. THE BECHTEL GROUP IS A GROUP OF COMPANIES THAT ARE ALL PARTS OF THE BECHTEL GROUP.

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BECHTEL HOLDING CORPORATION
 1000 WEST 10TH AVENUE
 SUITE 1000
 DENVER, COLORADO 80202
 TEL: 303.733.1000
 FAX: 303.733.1001



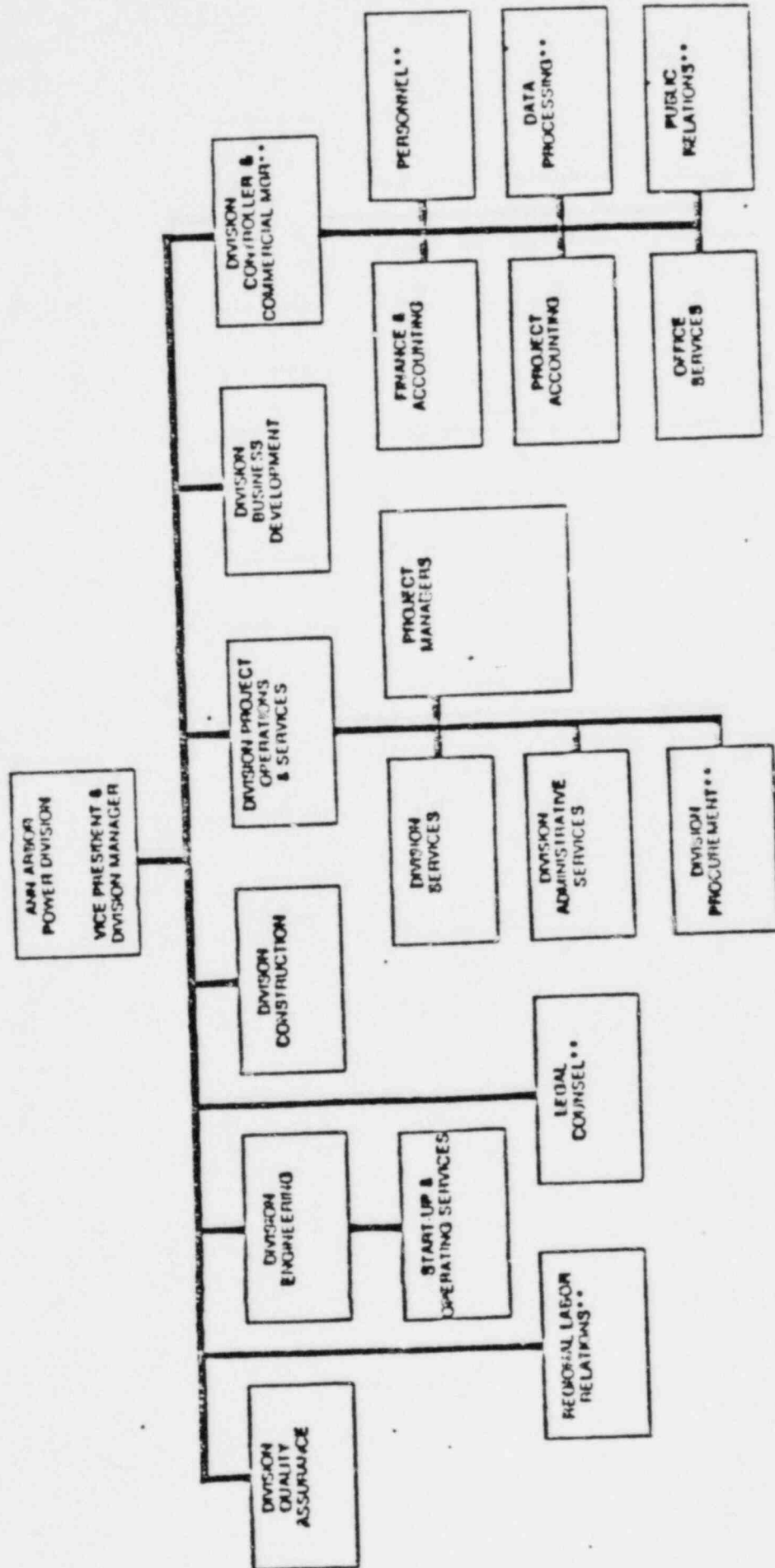
BECHTEL HOLDING CORPORATION

BECHTEL INTERNATIONAL CORPORATION

BECHTEL CORPORATION

ANN ARBOR POWER DIVISION

As of June 1, 1980



** Receives functional guidance from the applicable San Francisco service organization



OCT 16 1980

Mr. R. M. Collins
Vice President, TPO
Bechtel Power Corporation
P.O. Box 3965
San Francisco, CA 94119

Dear Mr. Collins:

SUBJECT: NRC ACCEPTANCE OF REVISED BECHTEL TOPICAL REPORT ON QUALITY ASSURANCE

By letter of December 13, 1979, Bechtel Power Corporation submitted proposed Revision 3 to its Topical Report, BQ-TOP-1. The submittal reflects proposed changes result from our review of your March 17, 1978; April 27, 1979; and July 18, 1979 quality assurance topical report submittals and various clarifying discussions between our staffs. The revisions reflect organizational and programmatic changes in the Bechtel quality assurance effort.

We find that the December 19, 1979 submittal of the topical report, as changed by Bechtel letter of October 6, 1980, describes an acceptable quality assurance program for the design, procurement, and construction activities within the Bechtel Power Corporation scope of work for nuclear power plants. Therefore, your topical report on quality assurance is acceptable, and you may implement it upon issuance. For the Bechtel Power Corporation quality assurance program description, applicants need only reference this topical report in Chapter 17 of license applications. We do not plan to rereview this topical report unless changes occur.

Should regulatory criteria or regulations change such that conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. Programmatic changes by Bechtel Power Corporation to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of August 19, 1977 shown in your topical report with this letter, change the revision number to 3A, change the date to October 1980, and forward 36 copies to the NRC. Your submittal should point out the changes by use of a black bar in the margin where a change is made, and the revision number should be adjacent to the bar. In your transmittal letter, indicate to which plant(s) this report will be applicable.

Should you have any questions regarding our review or if we can provide assistance, please contact Mr. Jack Spraul or me on (301) 492-7741.

Sincerely,

Walter P. Haass, Chief
Quality Assurance Branch
Division of Engineering

Enclosure:
Topical Report Evaluation

Topical Report Evaluation

Report Number: BQ-TOP-1, Revision 3A
 Report Title: Quality Assurance Program for Nuclear Power Plants
 Revision Date: October 1980
 Originating Organization: Bechtel Power Corporation
 Reviewed By: Quality Assurance Branch

SUMMARY OF TOPICAL REPORT

Topical report BQ-TOP-1, Revision 3A describes the quality assurance program which the Bechtel Power Corporation applies to those design, procurement, and construction activities involving safety-related structures, systems, and components of nuclear power plants within the Bechtel scope of work. BQ-TOP-1, Revision 3A commits Bechtel to comply with the requirements of Appendix B to 10 CFR Part 50 and to comply with the regulatory position provided by the NRC (with some exceptions which have been found acceptable by the NRC) in the following Regulatory Guides:

<u>Regulatory Guide</u>	<u>Date</u>
1.28	6/72
1.30	8/72
1.37	3/73
1.38	3/73
1.39	3/73
1.58	8/73
1.64	6/76
1.74	2/74
1.88	10/76
1.94	4/76
1.116	6/76
1.123	10/76
ANSI N45.2.12 (D-3, R-4)	2/74

Bechtel Power Corporation has provided for our evaluation a detailed description of organizations and groups involved in implementing activities required by the quality assurance program and a delineation of duties, responsibilities, and authority of those organizations involved in the quality assurance program. BQ-TOP-1, Revision 3A describes the measures used to carry out the Bechtel Power Corporation quality assurance program, and it describes how the applicable requirements of Appendix B to 10 CFR Part 50 will be satisfied by the administration and implementation of these measures.

SUMMARY OF REGULATORY EVALUATION

We have evaluated the quality assurance program and the organizations responsible for quality assurance functions as described in BQ-TOP-1, Revision 3A. We find that quality assurance policy and direction originate at an acceptably high

management level and are effectively communicated to other parts of the organization. Those performing quality assurance functions have responsibility and authority commensurate with their duties in implementing the quality assurance program. We also find that measures have been established, to be implemented by written procedures and instructions, which address each of the criteria of Appendix B in an acceptable manner.

Based on our review and evaluation of BQ-TOP-1, Revision 3A, we conclude that:

1. The organizations and persons performing quality assurance functions within Bechtel Power Corporation have the required independence and authority to effectively implement the quality assurance program without undue influence from those directly responsible for costs and schedules, and
2. The Bechtel Power Corporation quality assurance program contains the requirements and controls which, when properly implemented, comply with the requirements of Appendix B to 10 CFR Part 50 and the applicable regulatory guides and standards contained in Chapter 17 of the NRC Standard Review Plan (NUREG-75/087, Revision 0).

Bechtel Power Corporation

Engineers—Constructors

15740 Shady Grove Road
Gaithersburg, Maryland 20760
301-258-3000



December 2, 1980

Mr. W. P. Haass, Chief
Quality Assurance Branch
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Haass:

Organizational Changes
QAS-80-385
File: 7.10

Ref: Letter, J. M. Amaral to. W. P. Haass
dated October 6, 1980, same subject

As directed in your October 16, 1980 acceptance letter of the Bechtel QA Topical Report, BQ-TOP-1, Rev. 3A, the following description of organizational changes within the Bechtel Power Corporation (BPC) are submitted for your information.

As indicated in the referenced letter, the Thermal Power Organization of Bechtel Power Corporation has undergone a change with the addition of a Vice President over the Corporate Staff functions. We have since reinstated the position of the Manager of Quality Assurance, Thermal Power Organization, as shown on the enclosed organization chart.

The primary responsibilities of the Manager of QA, TPO will be:

- o Development and approval of TPO quality policies
- o Provide guidance on quality policies to the BPC Divisions
- o Coordination of quality functions of organizations external to BPC, e.g., M&QS and Procurement
- o Evaluate the effectiveness of the divisions' Quality Assurance Programs and report the adequacy of implementation to Bechtel Power Corporation management.

December 2, 1980

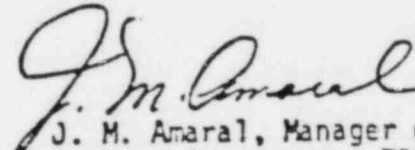
Mr. W. P. Haass
QAS-80-385

The aforementioned responsibilities were assigned previously, as indicated in Rev. 3A of BQ-TOP-1, to the Vice President, Planning and Quality Assurance - TPO.

The referenced letter discussed an organizational change within TPO and committed to forwarding an organizational chart showing these changes. The enclosed chart satisfies that commitment also. The organizational changes described in this letter, as well as the referenced letter, will be reflected in the Bechtel QA Topical Report, BQ-TOP-1, whenever it is revised in the future.

Should you have any questions regarding these changes, please call me at (301) 258-3776.

Very truly yours,


J. M. Amaral, Manager of
Quality Assurance - TPO

JMA/dkh

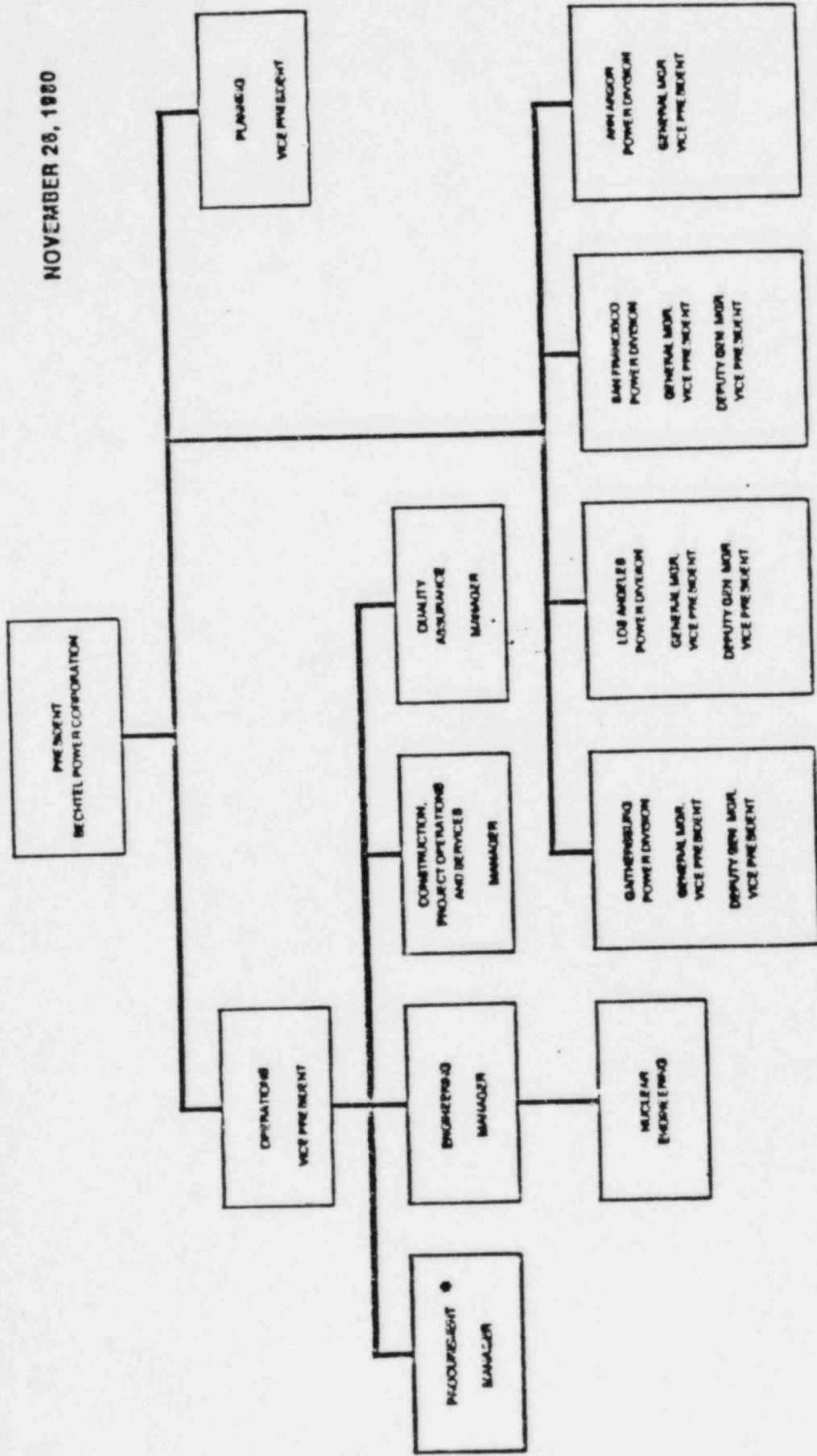
Enclosure - Organization Chart

bcc: R. M. Collins
C. W. Dick
J. C. Kansal
J. Milandin
R. L. Patterson

THERMAL POWER ORGANIZATION

NOVEMBER 28, 1980

◆◆ THIS CHART IS INTENDED TO REFLECT REPORTING RELATIONSHIPS AND NOT NECESSARILY LEVELS OF RESPONSIBILITY, SENIORITY OF POSITIONS, OR WORKING RELATIONSHIPS.



◆◆ PNE'S FUNCTIONAL GUIDANCE FROM THE APPLICABLE SAN FRANCISCO SERVICE ORGANIZATION

◆◆ This chart was developed for illustrative



Page 1 of 1
UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DEC 17 1980

Mr. J. M. Amaral
Manager of Quality Assurance, TPO
Bechtel Power Corporation
15740 Shady Grove Road
Gaithersburg, MD 20760

Dear Mr. Amaral:

SUBJECT: CHANGES TO BQ-TOP-1 REVISION 3A

We have reviewed your letter dated December 2, 1980 concerning an organizational change within the Bechtel Power Corporation which affects the Bechtel Nuclear QA program. The program is described in Revision 3A of the Bechtel QA topical report BQ-TOP-1, "Bechtel Quality Assurance Program for Nuclear Power Plants," October 1980. Your letter indicates that the position of the Manager of Quality Assurance, Thermal Power Organization has been reinstated, reporting to the Operations Vice President. Your letter also lists the primary responsibilities of the Manager of Quality Assurance and provides an updated organization chart.

We believe the change should not reduce the effectiveness of Bechtel's QA program, and we find the change acceptable. We note your commitment to incorporate the change into the topical report at the time of the next revision.

Sincerely,

A handwritten signature in cursive script that reads "Walter P. Haass".

Walter P. Haass, Chief
Quality Assurance Branch
Division of Engineering

Bechtel Power Corporation

Engineers—Constructors

Fifty Beale Street

San Francisco, California

Mail Address: P.O. Box 3965, San Francisco CA 94119



June 3, 1982

Mr. W. P. Haass, Chief
Quality Assurance Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject:
Organizational Changes

Dear Mr. Haass:

As directed by your October 1980 acceptance letter of Bechtel QA Topical Report BQ-TOP-1, Rev. 3A, and to confirm our discussion on May 12, 1982, the following description of changes within the Procurement organization are submitted for your information.

As can be seen in the attached organization chart dated March 23, 1982, the Central Procurement organization has been restructured to include the equipment operations (formerly combined with field procurement) and information services groups. The supplier quality and expediting groups have been removed from Central Procurement and, along with the new commodity advisors group, have been combined to form a new organization identified as Supplier Performance. This restructuring of the Procurement organization was done to improve our effectiveness with suppliers; improve the interface between the supplier quality, expediting, and commodity advisors groups; and improve the quality of the Supplier Information System.

The Manager of Supplier Performance is responsible for management of the expediting, supplier quality, and commodity advisors groups, which provide functional guidance and assistance to all Bechtel divisions and projects. He is responsible for the formulation of policies, methods, and standards to ensure consistency with overall Bechtel objectives. He is the primary Bechtel contact with vendors when generic or major vendor performance problems occur.

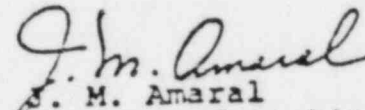
Mr. Haass
June 3, 1982
Page 2

Programmatically, the topical report is unchanged. The duties of the Manager of Supplier Quality remain unchanged. The responsibility for control of supplier quality is left with the supplier quality manager in each of the divisions. Project supplier quality supervisors who report to the respective division supplier quality managers are responsible for direction of project procurement surveillance inspection activities. Their duties include the preparation of shop inspection plans; direction and assignments to supplier quality representatives; initiation and coordination of supplier surveys and audits; and approval of surveillance inspection reports.

Mr. S. I. Heisler has been appointed Manager of Supplier Performance.

If you have any questions regarding the above, please call me on (415)768-7900.

Very truly yours,



J. M. Amaral
Manager of Quality Assurance
Bechtel Power Corporation

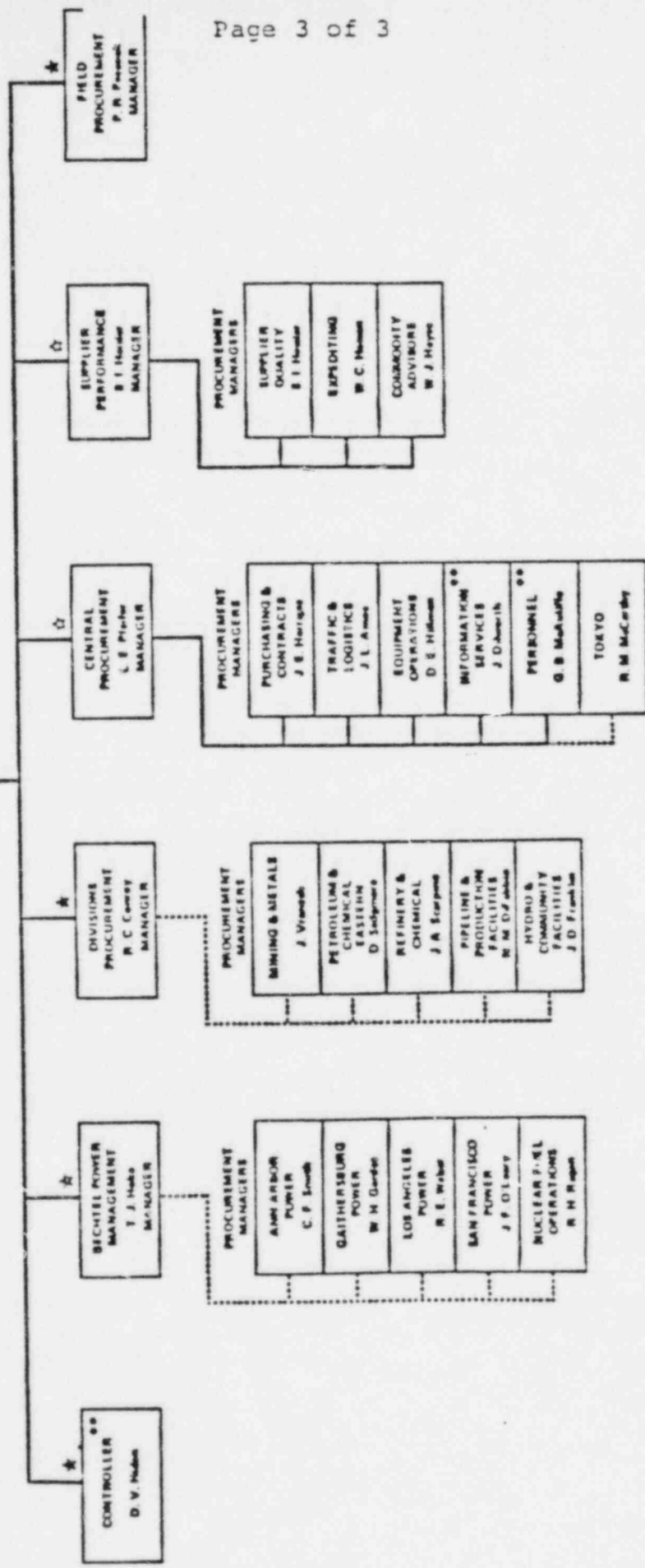
JMA/mm

Attachment

PROCUREMENT
SAN FRANCISCO
 * MARCH 24, 1952

☆ REPORTS TO MANAGER
 ☆ REPORTS TO DEPUTY MANAGER

PROCUREMENT
 E. C. Suther
 VICE PRESIDENT
 AND MANAGER
 L. E. Pfister
 DEPUTY MANAGER



P a c k o f f

POSITIONS IN BRACKETED ARE REPORTING TO DEPUTY MANAGER
 IN ALL OTHERS, AND ARE NECESSARILY LOCATED
 IN AN OFFICE WITHIN THE SAN FRANCISCO OFFICE
 UNLESS OTHERWISE INDICATED

***** FUNCTIONAL REPORTING
 ** RECEIVES FUNCTIONAL GUIDANCE FROM THE
 APPLICABLE SAN FRANCISCO SERVICE ORGANIZATION
 * REPLACES CHART DATED JANUARY 4, 1952

NOTE:
 PERSONNEL ASSIGNED TO DIVISIONS ARE LOCATED
 AT DIVISION HEADQUARTERS. ALL OTHER PERSONNEL
 ARE BASED IN HOME OFFICE UNLESS OTHERWISE INDICATED.



Page 1 of 1
UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JULY 18 1982

J.M. Amaral
Manager of Quality Assurance
Bechtel Power Corporation
P.O. Box 3965
San Francisco, California 94119

Dear Mr. Amaral:

In your letter dated June 3, 1982, you describe changes in Bechtel's San Francisco procurement organization including the establishment of a new organization identified as "Supplier Performance." You indicate the reorganization was done to improve the Bechtel-supplier interface.

We have reviewed the procurement organization presented in your June 3, 1982 letter and find it acceptable.

Sincerely,

Walter P. Haass
Walter P. Haass, Chief
Quality Assurance Branch
Division of Engineering

PART C

EBASCO SERVICES INCORPORATED
QUALITY ASSURANCE PROGRAM DESCRIPTION

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION
QUALITY ASSURANCE DURING DESIGN AND CONSTRUCTION

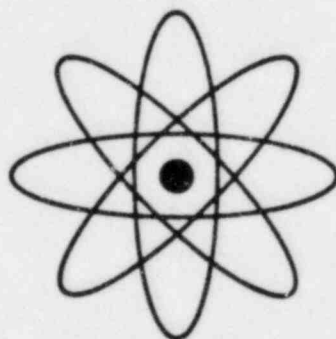
REVISION 6

DATE March 30, 1984

EBASCO

NUCLEAR
QUALITY ASSURANCE
PROGRAM MANUAL

ETR-1001



HOUSTON LIGHTING & POWER COMPANY

ELECTRIC GENERATING STATION UNITS 1 & 2



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

MAY 12 1975

Mr. Leonard F. C. Reichle
Vice President
Ebasco Services Incorporated
Two Rector Street
New York, New York 10006

Dear Mr. Reichle:

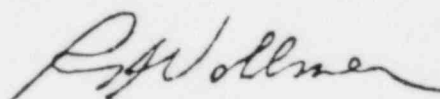
We have reviewed and evaluated the Ebasco Services Incorporated (EBASCO) Nuclear Quality Assurance Program Manual (Ebasco Report ETR-1001, Revision 0, March 14, 1975). We find that it describes an acceptable Quality Assurance Program for the design, procurement, and construction activities which are within the Ebasco scope of work for nuclear power plants.

For the Ebasco Quality Assurance Program, applicants need only reference this Topical Report in Section 17 of license applications. We do not intend to repeat our review of this Topical Report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this Topical Report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire.

Please include a copy of this letter and our evaluation in each of the reports and resubmit 70 copies to the NRC.

Sincerely,



Richard H. Vollmer, Chief
Quality Assurance Branch
Division of Reactor Licensing

Enclosure:
NRC Topical Report Evaluation of
Ebasco Report ETR-1001, Rev. 0, 3/14/75



TOPICAL REPORT EVALUATION

Report Number: ETR-1001, Rev. 0, Nonproprietary
Report Title: Ebasco Nuclear Quality Assurance Program
Report Date: March 14, 1975
Originating Organization: Ebasco Services Incorporated
Reviewed By: Quality Assurance Branch

SUMMARY OF TOPICAL REPORT

Topical Report ETR-1001, Rev. 0 describes the Quality Assurance (QA) Program which the Ebasco Services Incorporated (Ebasco) applies to those design, procurement, and construction activities involving safety related structures, systems, and components of nuclear power plants within the Ebasco scope of work. ETR-1001, Rev. 0 commits Ebasco to comply with the requirements of Appendix B to 10 CFR Part 50 and to follow the QA guidance provided by the NRC in:

1. "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants," WASH 1283, Rev. 1, May 24, 1974, and
2. "Guidance on Quality Assurance Requirements During the Construction Phase of Nuclear Power Plants," WASH 1309, May 10, 1974.

Ebasco has provided for our evaluation a detailed organizational description of those individuals and groups involved in carrying out activities required by the QA Program and a delineation of duties, responsibilities, and authority of those organizational elements involved in the QA Program. ETR-1001, Rev. 0 contains a description of the measures used to carry out the Ebasco QA Program activities and describes how applicable requirements of Appendix B will be satisfied by the administration and implementation of these measures.

SUMMARY OF REGULATORY EVALUATION

We have evaluated the QA Program and the organizations responsible for QA functions as described in ETR-1001, Rev. 0. We find that QA policy and direction originate at an acceptably high management level and are effectively communicated to other parts of the organization. Those performing QA functions have responsibility and authority commensurate with their duties in implementing the QA Program. We also find that measures have been established, to be implemented by written procedures and instructions, which address each of the criteria of Appendix B and demonstrate conformance with each criterion.

Based on our review and evaluation of ETR-1001, Rev. 0 we conclude that:

1. The organizations and persons performing QA functions within Ebasco have the required independence and authority to effectively carry out the QA Program without reservation or undue influence from those directly

responsible for costs and schedules, and

2. The Ebasco QA Program contains the necessary requirements, procedures, and controls to demonstrate that quality-related activities will be conducted in accordance with the requirements of Appendix B to 10 CFR Part 50.

REGULATORY POSITION

It is the staff's position that the Ebasco Nuclear Quality Assurance Program Manual (Ebasco Report ETR-1001, Revision 0, March 14, 1975) is acceptable for use in the design, procurement, and construction of nuclear power plants. The Topical Report can be referenced by report number in Section 17 of future Safety Analysis Reports.



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

MAY 17 1982

Mr. B. E. Tenzer, Director
Materials Engineering and
Quality Assurance
Ebasco Services, Inc.
Two Rector Street
New York, NY 10006

Dear Mr. Tenzer:

SUBJECT: ACCEPTANCE OF REVISION 11 TO EBASCO QUALITY ASSURANCE PROGRAM
TOPICAL REPORT

We have reviewed and evaluated Revision 11 to the Ebasco Topical Report, ETR-1001, submitted with your letter of February 22, 1982 and as modified in your letter of May 3, 1982. Revision 11 reflects quality assurance program and editorial changes.

We find that this report describes a quality assurance program that meets the criteria in Appendix B to 10 CFR Part 50 and is therefore acceptable. You may implement it upon issuance. For the Ebasco quality assurance program, you need only reference this topical report in Chapter 17 of license applications. We do not intend to repeat our review of this topical report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. Programmatic changes by Ebasco to this topical report are to be submitted to NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please include a copy of this letter in the report, renumber the report ETR-1001, Rev. 11A, and transmit 40 copies to the NRC. In your transmittal letter, please indicate to which plants Revision 11A will be applicable.

Should you have any questions regarding our review or if we can provide assistance, please contact Mr. John Gilray on (301) 492-4730.

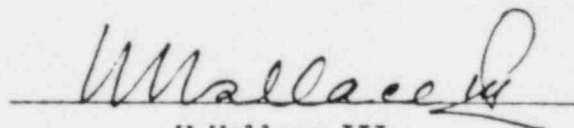
Sincerely,

Walter P. Haass
Walter P. Haass, Chief
Quality Assurance Branch
Division of Engineering

STATEMENT OF AUTHORITY

The management of Ebasco Services Incorporated recognizes the necessity for a comprehensive Quality Program for Nuclear Power Plants. Ebasco Company Procedure No. N-21 establishes the basic organization, assigns authorities and responsibility for implementing the Quality Program, and establishes the requirement for a corporate Quality Assurance Manual. Accordingly, this Manual represents Ebasco Quality Program policy. In this respect, it is to be used as a standard by personnel in all Ebasco Organizational Units.

The primary responsibility for overall implementation and administration of the Ebasco Quality Assurance Program rests with the Vice President Materials Engineering and Quality Assurance as delegated to him by the Executive Vice President - Operations. The Quality Program Committee has been established under the auspices of the Executive Vice President - Operations, consisting of representatives of designated Vice Presidents. The committee is permanent and its Chairman shall be the Vice President Materials Engineering and Quality Assurance.



W Wallace III
President

April 24, 1981

FOREWORD

This manual represents Ebasco Quality Program policy and requirements for the design and construction of nuclear power stations under the jurisdiction or in accordance with the requirements of the United States Nuclear Regulatory Commission. In this respect, it is to be used as a standard by all Ebasco personnel.

The manual has been prepared by the Quality Assurance Engineering Department and approved by the Ebasco Quality Program Committee. The manual reflects official Ebasco policy and has been designed to meet the requirements of the United States Nuclear Regulatory Commission document 10 CFR 50, Appendix B (18 Quality Assurance Criteria), and American National Standards Institute document N45.2, entitled Quality Assurance Program Requirements for Nuclear Power Plants.

The Ebasco Nuclear Quality Assurance Program Manual has been designed to meet the requirements of 10 CFR 50.34(7) for a quality assurance program description. It will be incorporated into applicable portions of safety analysis reports by reference as provided by 10 CFR 50.32.

The primary responsibility for overall implementation and administration of the Ebasco Quality Program rests with the Vice President Materials Engineering and Quality Assurance as delegated to him by the Executive Vice President - Operations. The Chief Quality Assurance Engineer is assigned the responsibility and authority to enforce Ebasco Quality Program requirements and has the unqualified support of Corporate Management. His decisions may not be overriden by personnel in any division or department, except with the written consent of the Vice President Materials Engineering and Quality Assurance or the Executive Vice President - Operations.

The Chief Quality Assurance Engineer shall staff each project to the extent necessary to perform Quality Assurance tasks directly and audit departments other than his own in their performance of tasks related to Quality Assurance. The Chief Quality Assurance Engineer has the authority to require immediate correction of any non-conforming activity or condition to comply with Ebasco Quality Program requirements, or if necessary, to stop work until suitable corrective action has been taken or a satisfactory resolution reached.

Recommendations or questions regarding the Quality Program or the manual shall be referred to the Chief Quality Assurance Engineer, who shall be responsible for resolution. The Ebasco Quality Program Committee is responsible for and has the authority to make and approve procedures for any changes to this manual.

EBASCO SERVICES
INCORPORATED

The Quality Program Coordinator, designated by the Chairman of the Ebasco Quality Program Committee, functions as the Committee's secretary and publishes to all manual holders an Updating Status Memorandum for the manual at least every six months. The Memorandum summarizes changes made to the manual during the preceding period. The Quality Program Coordinator also maintains a listing of individual pages in the manual which indicates the current issue or revision date of each page. Information from this list can be obtained by addressing inquiries to the Quality Program Coordinator at the Ebasco New York Office.

The manual is assigned by the Quality Program Coordinator to individuals as required for their exclusive use. However, it remains the property of Ebasco Services Incorporated and shall be returned upon request. It is loaned in confidence and upon the condition that neither it nor the information contained in it will be reproduced, copied or disclosed in whole or in part. The material herein is copyrighted and protected by the copyright laws.

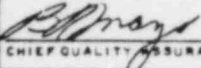
Should any circumstance arise under which a holder no longer requires the manual for the specific purpose for which it was assigned, it shall be returned promptly to the Quality Program Coordinator. Nuclear Quality Assurance manuals shall not be transferred or loaned to any other individual, position, firm or corporation without the written authorization of the Chairman of the Ebasco Quality Program Committee. The Quality Program Coordinator shall be informed promptly of any change in the mailing address of a manual holder.

Manual holders are responsible to maintain their copies in updated condition, including the proper insertion of new or revised sections as furnished and the destruction of all cancelled or superseded sections. Sections shall not be removed from manuals except as directed for revision or cancellation.

B. E. Tenzer

B E Tenzer
Vice President Materials Engineering
and Quality Assurance

April 27, 1981

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 INTRODUCTION & SCOPE OF SERVICES	SECTION
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION <u>4</u>
			DATE <u>3/26/84</u>

Introduction

The Ebasco Quality Assurance Program to be used on the South Texas Project is described in this Manual. It is based on the Ebasco Nuclear Quality Assurance Program Manual, ETR-1001 Rev. 11, which was accepted by the United States Nuclear Regulatory Commission on May 17, 1982. ETR-1001 Rev. 11 represents Ebasco Quality Program policy and requirements for the design and construction of nuclear power stations under the jurisdiction of or in accordance with the requirements of the United States Nuclear Regulatory Commission. In this respect, it is the standard which is used by all Ebasco personnel. Ebasco's commitment to Quality is confirmed in the "Statement of Authority" signed by the President of Ebasco Services Incorporated.

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This Manual, as modified for the South Texas Project, is assigned by the Quality Program Coordinator via the Manager Site Quality Assurance to individuals as required for their exclusive use. However, it remains the property of Ebasco Services Incorporated and shall be returned upon request. It is loaned in confidence and upon the condition that neither it nor the information contained in it will be reproduced, copied, or disclosed in whole or in part, except for its incorporation into applicable portions of Houston Lighting & Power Company safety analysis reports. The material herein is copyrighted and protected by the copyright laws.

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Scope of Services

Ebasco Services Incorporated's scope of services for the South Texas Project includes construction services as well as quality assurance and quality control appropriate to those services. The design and procurement sections of ETR-1001 Rev. 11 are not applicable to Ebasco Services Incorporated's scope of services. Those responsibilities are assigned to the Client or his designee. The remainder of ETR-1001 Rev. 11 has been modified as appropriate for the South Texas Project and approved in accordance with applicable Company Procedures.

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Although Section QA-III-1, "Instructions, Procedures, and Drawings," contains certain requirements relating to control of drawings, the Client or his designee is the Architect/Engineer and will issue all design drawings. Ebasco may, however, from time to time, initiate drawings which are not design documents, when authorized by specifications issued by the Client or his designee.

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Ebasco performs quality trend analysis on a corporate basis as described in Sections QA-I-1, QA-III-6, QA-III-7, and QA-III-9 of this Manual. This trend analysis is a corporate-wide compilation and analysis of quality data generated by the Quality Assurance organization in conjunction with the various projects on which Ebasco is performing nuclear safety-related activities and is not related to the specific South Texas Project trend analysis program. The Client is responsible for the performance of quality trend analysis specific to the South Texas Project.

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PART I - General


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QA-I-1	Quality Assurance Program	5	3/26/84
QA-I-2	Organization and Responsibilities	5	3/26/84
QA-I-3	Personnel Indoctrination and Training Program in Quality Assurance	3	3/26/84
QA-I-4	Deleted (not applicable)		
QA-I-5	Deleted (not applicable)		
QA-I-6	Quality Assurance Records	3	3/26/84

PART II - Engineering Offices

Deleted (not applicable)


PART III - Construction Site

<u>Section</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Date</u>
QA-III-1	Instructions, Procedures, and Drawings	3	3/26/84
QA-III-2	Document Control	4	3/26/84
QA-III-3	Deleted (not applicable)		
QA-III-4	Deleted (not applicable)		
QA-III-5	Deleted (not applicable)		
QA-III-6	Nonconformances	3	3/26/84
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PART III - Construction Site (Cont'd)

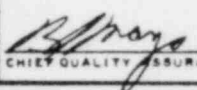
<u>Section</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Date</u>
QA-III-10	Identification and Control of Items	2	3/26/84
QA-III-11	Inspection	4	3/26/84
QA-III-12	Test Control	3	3/26/84
QA-III-13	Control of Measuring and Testing Equipment	3	3/26/84
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		QUALITY ASSURANCE PROGRAM	

1.0 SCOPE

The purpose of this Section is to describe the Quality Assurance Program of Ebasco Services Incorporated and its applicability to safety-related activities and services performed by Ebasco in the construction of South Texas Project. This program has been designed to meet the applicable requirements of the United States Nuclear Regulatory Commission 18 Quality Assurance Criteria of 10CFR50, Appendix B. It has also been designed to meet the regulatory position of the following US NRC Regulatory Guides and ANSI Standards, with exceptions and clarifications as stated in Appendix II of this Manual:

<u>Standard</u>	<u>Title</u>
ANSI N45.2-1971 R.G. 1.28 (Rev. 0, 6/72)	Quality Assurance Program Requirements for Nuclear Power Plants
ANSI N45.2.1-1973 R.G. 1.37 (Rev. 0, 3/73) (See Appendix II Notes 3 through 5)	Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants
ANSI N45.2.2-1972 R.G. 1.38 (Rev. 0, 3/73) (See Appendix II Notes 6 through 11)	Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants (During the Construction Phase)
ANSI N45.2.3-1973 R.G. 1.39 (Rev. 0, 3/73) (See Appendix II Notes 12 and 13)	Housekeeping During the Construction Phase of Nuclear Power Plants
ANSI N45.2.4-1972 R.G. 1.30 (Rev. 0, 8/72) (See Appendix II Notes 14 and 15)	Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations
ANSI N45.2.5-1974 (See Appendix II Notes 1 and 2)	Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants

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StandardTitle

ANSI N45.2.6-1973
R.G. 1.58 (Rev. 0, 8/73)
Plus Positions C.5, C.6, C.7,
C.8, and C.10 of Rev. 1

Qualifications of Inspection,
Examination, and Testing
Personnel for the Construction
Phase of Nuclear Power Plants

ANSI N45.2.8-1975
R.G. 1.116 (6/76)
(See Appendix II Notes 16 through 18)

Supplementary Quality Assurance
Requirements for Installation,
Inspection, and Testing of
Mechanical Equipment and Systems
for the Construction Phase of
Nuclear Power Plants

ANSI N45.2.9-1974
R.G. 1.88 (Rev. 2, 10/76)
(See Appendix II Notes 19 through 21)

Requirements for Collection, Storage,
and Maintenance of Quality Assurance
Records for Nuclear Power Plants

ANSI N45.2.10-1973
R.G. 1.74 (Rev. 0, 2/74)

Quality Assurance Terms and
Definitions

ANSI N45.2.12-1977
R.G. 1.144 (Rev. 1, 9/80)
(See Appendix II Note 22)

Requirements for Auditing of Quality
Assurance Programs for Nuclear Power
Plants

ANSI N45.2.23-1978
R.G. 1.146 (Rev. 0, 8/80)


Qualification of Quality Assurance
Program Audit Personnel for Nuclear
Power Plants

Table I-1.1 provides a matrix which shows the sections of the Ebasco Nuclear Quality Assurance Program Manual that correspond to the requirements of 10CFR50, Appendix B and US NRC Regulatory Guide 1.28, Rev. 0. The Ebasco Quality Assurance Program is comprised of: The Ebasco Nuclear Quality Assurance Program Manual, written corporate policies, procedures, departmental instructions, and drawings related to quality. Table I-1.2 provides a matrix of the principal implementing procedures as they relate to 10CFR50, Appendix B criteria. Table I-1.3 is a listing of these procedures by title. The principal implementing procedures are not necessarily limited to those indicated in the matrix. Implementing procedures will be issued for South Texas Project use as the need for specific procedures arises due to changes in scope of Ebasco safety-related activities.

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The Ebasco Nuclear Quality Assurance Program Manual has been designed to meet the requirements of 10CFR50.34 (7) for a quality assurance program description. It will be incorporated into applicable portions of Houston Lighting & Power Company safety analysis reports in whole or by reference as provided by 10CFR50.32. |R6

The Ebasco Quality Program for the South Texas Project is in force at the Ebasco Home Office and Construction operations. The Ebasco Home Office is an organized unit where project-related support functions are performed. Construction Operations encompass those activities related to the construction of the nuclear power station. Ebasco's responsibility for implementing the Ebasco Quality Program shall begin at the commencement of activities affecting quality and shall end with the turnover of completed systems to the Client or his designee. |R6

Definitions pertaining to the Ebasco Quality Program are listed in Appendix I of this Manual. |R6

2.0 QUALITY ASSURANCE ENGINEERING


The Ebasco Quality Assurance Engineering Department is responsible for establishing new, and updating existing, quality assurance requirements. In addition, this department is responsible to administer and enforce the implementation of the Ebasco Quality Assurance Manual.

3.0 QUALITY PROGRAM COMMITTEE

3.1 The Ebasco Quality Program Committee is responsible for and has authority to make and approve procedures for any changes to this Manual. This committee is comprised of representatives of the Materials Engineering and Quality Assurance, Engineering, Construction, Projects, Purchasing, Consulting Engineering, Advanced Technology, and Plant Operations and Betterment Departments; and of EnviroSphere Company. These representatives are appointed by the Vice President of the respective department.

The Vice President Materials Engineering and Quality Assurance is designated by the Executive Vice President Operations as the Chairman of the Quality Program Committee. A member of Quality Assurance Engineering Department shall be designated by the Chairman as Quality Program Coordinator, who shall function as the Quality Program Committee's secretary and be a member of the Committee.

The Chief Quality Assurance Engineer is designated by the Vice President Materials Engineering and Quality Assurance as a permanent representative of the Materials Engineering and Quality Assurance Department on the Quality Program Committee.

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The Committee shall be responsible for and shall have authority to make any changes to the policies and procedures of the Ebasco Quality Program. All changes or revisions to the Ebasco Quality Program shall be processed through the Quality Program Committee by the Quality Program Coordinator.

3.2 Ebasco Quality Program Procedures document the various significant activities of the Quality Program that are the direct responsibility of the Quality Program Committee or the Quality Program Coordinator. These procedures include but are not limited to the following:

3.2.1 Quality Program Procedure No. 4 entitled, QUALITY PROGRAM COORDINATOR - DESCRIPTION OF POSITION, DUTIES, RESPONSIBILITIES.

3.2.2 Quality Program Procedure No. 5 entitled, DEVIATING EBASCO PROJECT-RELATED QUALITY ASSURANCE PROGRAMS FROM THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL. This provides for control of such deviations by requiring execution of an authorization form involving approval of specified authorities to assure, among other things, that safety and/or quality will not be sacrificed.

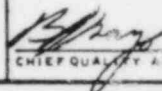
3.2.3 Quality Program Procedure No. 6 entitled, ASSIGNMENT, DISTRIBUTION AND CONTROL OF THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL.

3.2.4 Quality Program Procedure No. 7 entitled, REVISIONS TO THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL.

4.0 GENERAL

4.1 Section QA-I-2 of this Manual describes the organizational structure, functional responsibilities, levels of authority, and lines of internal and external communication for management, direction, and execution of the Ebasco Quality Assurance Program. By the Statement of Authority at the front of this Manual, Ebasco's President mandates the company-wide use of this Manual and its supporting documents which make up the Ebasco Quality Program.

4.2 It shall be the responsibility of each Ebasco department and the individual personnel of that department to adhere to the requirements of this Program. Section QA-III-1 of this Manual requires these departments to develop and control instructions, procedures, and/or drawings which describe the manner in which activities affecting quality are to be accomplished. When documented evidence is required for the satisfactory performance of these activities, checklists, forms, and/or other appropriate means shall provide this evidence. The documents which contain the procedures listed in Table I-1.3 and are used to implement the Ebasco QA Program are:

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- 4.2.1 Quality Assurance Engineering Department -
Quality Assurance Procedures Manual for South Texas Project
- 4.2.2 Quality Assurance Engineering Department -
Site Quality Assurance Procedures Manual for South Texas Project
- 4.2.3 Quality Program Procedures Manual
- 4.2.4 Company Procedures Manual - Nuclear
- 4.2.5 Quality Assurance Engineering Department -
Site Quality Control Procedures Manual for South Texas Project
- 4.2.6 Quality Assurance Engineering Department -
Site Quality Assurance Instructions Manual for South Texas Project
- 4.2.7 Construction Department Procedures Manual -
Administrative Site Procedures for South Texas Project
- 4.2.8 Construction Department Procedures Manual -
Construction Site Procedures for South Texas Project
- 4.2.9 Construction Department Procedures Manual -
Construction Maintenance Instructions for South Texas Project

The above-listed manuals may also contain departmental working procedures which do not describe activities affecting quality and therefore are not governed by the requirements of this Manual. Furthermore, certain implementing procedures may require changes in order to suit unique client requirements; such procedures for the South Texas Project will be included in a project manual of procedures and/or a site manual. In this case, the changed procedure shall be designated a Project Procedure. These procedures will be subject to controls similar to those applicable to the original documents.

4.3 In addition to the requirements of Section QA-III-1 of this Manual and Paragraph 4.2 above, Section QA-III-8 of this Manual further assures control over quality-related activities by requiring that special processes shall be performed in accordance with written qualified procedures, and that they shall be performed only by qualified personnel. All qualifications shall be in accordance with applicable codes, standards, specifications, and other requirements as applicable. The Ebasco Quality Program provides for the verification of quality requirements through written policies, procedures, and instructions for the performance of inspections and tests. These inspections and tests are performed on services provided by Ebasco. All inspections shall be performed by individuals other than those who performed the activity.

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5.0 INDOCTRINATION AND TRAINING

Section QA-I-3 of this Manual provides for the company-wide indoctrination and training of Ebasco personnel engaged in activities subject to the requirements of the Ebasco Quality Assurance Program. The objectives of the training program are to familiarize applicable Ebasco personnel with this Quality Assurance Program Manual and the implementing procedures identified in Table I-1.3. Overall responsibility for training as delineated in QA-I-3 rests with the Quality Assurance Engineering Department. |R6

6.0 REVIEW OF QUALITY PROGRAM ADEQUACY

6.1 The adequacy of the Ebasco Quality Program is reviewed on a regular basis. The determination of program adequacy is based on audit results and trend analyses. Section QA-III-9 of this Manual provides for the performance and follow-up of audits by Site Quality Assurance and Home Office Quality Assurance Engineering and of management audits of the Materials Applications and Quality Assurance functions. |R6

6.2 Audits performed by Home Office Quality Assurance Engineering are designed to evaluate the Quality Program effectiveness on a project basis. When corrective action is necessary, re-audits are scheduled to assure implementation of corrective action. Section QA-III-9 of this Manual defines review activities and reports involved in the auditing function. |R6

6.3 Information on audits performed by Home Office Quality Assurance Engineering and Site Quality Assurance shall be submitted to the Quality Assurance Engineering Supervisor of Auditing. He shall make an analysis of the available quality data with respect to quality trends and report the result at least semi-annually to the appropriate executive level of management for review and assessment in accordance with Quality Assurance Engineering Procedure QA-D.3. The Vice President of Materials Engineering and Quality Assurance shall be responsible for initiating the implementation of any changes or corrective action deemed necessary to improve the effectiveness of the Ebasco Quality Assurance Program. |R6

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TABLE I-1.1

MATRIX OF COMPLIANCE TO
US NRC 10CFR50 APPENDIX B AND ANSI N45.2

<u>10CFR50 Appendix B Criteria</u>	<u>ANSI N45.2 Paragraph</u>	<u>Ebasco Nuclear Quality Assurance Program Manual Section</u>	
I	3	QA-I-2	
II	2	QA-I-1, QA-I-3	
III	4	Not Applicable to Ebasco STP Work Scope	
IV	5	Not Applicable to Ebasco STP Work Scope	R6
V	6	QA-III-1	
VI	7	QA-III-2	
VII	8	Not Applicable to Ebasco STP Work Scope	R6
VIII	9	QA-III-10	
IX	10	QA-III-8	
X	11	QA-III-11	R6
XI	12	QA-III-12	
XII	13	QA-III-13	
XIII	14	QA-III-14	
XIV	15	QA-III-15	
XV	16	QA-III-6	
XVI	17	QA-III-7	
XVII	18	QA-I-6	
XVIII	19	QA-III-9	

TABLE I-1.2
MATRIX OF COMPLIANCE OF
PRINCIPAL IMPLEMENTING PROCEDURES TO 10CFR50 APPENDIX B

Crite- rion	Nuclear (N-) Procedures	Quality Control Procedures (QCP-)	Quality Assurance Instructions (QAI-)	Quality Assurance (QA-) Procedures	Construction Procedures			Quality Program (QP-) Procedures
					(ASP-)	(CSP-)	(CMI-)	
I	-21	-1.1	-001		-2			
II	-24	-2.1,-2.2, -6.3	-003,-012,-017,-018	-G.3,-S.1,-S.23	-14,-34			-4 through -7
V	-23	-6.1,-6.3	-002,-005,-017	-G.1,-G.2,-S.23	-1,-7,-11, -12,-14	-1 through -100 (as applicable)		
VI		-6.2	-002	-G.1,-G.2,-S.3,-S.9	-6			
VIII		-9.1 through -13.3 (as applicable) -14.1,-17.2		-S.12 through -S.16, -S.18,-S.21,-S.22	-5,-32	-14,-25,-38, -39,-88		
IX		-9.1,-9.3, -9.4,-9.5, -10.1,-10.6	-014,-015	-S.14 through -S.20		-11,-81 through -96		
X		-2.1,-0.1 through -13.3 (as applicable)		-G.3.1				
XI		-11.1		-G.3.1	-9	-5,-17,-32		
XII		-12.1	-015	-S.8		-34,-94		
XIII		-10.22,-13.1, -13.2,-13.3		-S.5,-S.6	-4,-5, -32,-82	-3,-11,-12, -37,-60 through -65	-1	
XIV		-14.1			-9	-40,-49		
XV		-15.1,-15.2, -15.3	-004,-007,-011		-15,-33			
XVI		-15.2,-16.1	-007,-011	-D.3	-15,-16			
XVII		-17.1,-17.2	-010,-016,-019	-G.3,-G.4,-S.3, -S.4,-S.11	-8			
XVIII	-24		-003,-006,-013	-D.4,-D.5.2,-G.3, -S.1 through -S.22 (except -S.7 & -S.10)				

APPROVAL

CHIEF QUALITY ASSURANCE ENGINEER

EBASCO SERVICES
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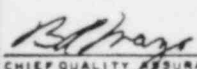
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TABLE I-1.3

PRINCIPAL IMPLEMENTING PROCEDURES

<u>Procedure No.</u>	<u>Title</u>	
N-21	Nuclear Quality Program Authorization and Implementation	
N-23	Reporting a Defect/Noncompliance to the NRC	
N-24	Ebasco Management Quality Assurance Audit Committee	
QA-G.1	Preparation and Control of Quality Assurance Engineering Department Procedures	
QA-G.2	Control and Distribution of Project-Related Manuals	
QA-G.3	Qualification of QA Audit Personnel	
QA-G.3.1	Qualification of Inspection, Examination and Testing Personnel	
QA-G.4	Quality Assurance Engineering Records	R6
QA-D.3	Determination and Analysis of Quality Trends	
QA-D.4	Resolution of External Audit Findings	R6
QA-D.5.2	Site Audit Procedure	R6
QA-S-1	Planning of Site Quality Assurance Engineering Activities	
QA-S-2	General Audit Procedure	
QA-S-3	Processing of Quality Assurance Engineering Audit Reports	
QA-S-4	Quality Assurance Records Audit	

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<u>Procedure No.</u>	<u>Title</u>	
QA-S-5	Material Receipt Audit	
QA-S-6	Material and Component Storage Audit	R6
QA-S-8	Calibration and Gage Control Audit	
QA-S-9	Document Control Audit	R6
QA-S-11	System Turnover Audit	
QA-S-12	Civil Activities Audit	
QA-S-13	Structural Steel Audit	
QA-S-14	Reinforcing Steel Audit	
QA-S-15	Protective Coating Audit	
QA-S-16	Welding Material Control Audit	
QA-S-17	Welding Qualification Audit	
QA-S-18	Mechanical and Welding Activities Audit	
QA-S-19	Nondestructive Examination Audit	
QA-S-20	Radiographic Review Audit	
QA-S-21	Electrical Activities Audit	
QA-S-22	Instrumentation Activities Audit	
QA-S-23	Quality Assurance Instructions	
QP-4	Quality Program Coordinator - Description of Position, Duties, Responsibilities	
QP-5	Deviating Ebasco Project-Related Quality Assurance Programs from the Ebasco Nuclear Quality Assurance Program Manual	

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Procedure
No. _____

Title

QP-6	Assignment, Distribution and Control of the Ebasco Nuclear Quality Assurance Program Manual	
QP-7	Revisions to the Ebasco Nuclear Quality Assurance Program Manual	
QCP-1.1	Quality Control Organization and Responsibilities	R6
QCP-2.1	Indoctrination, Training and Qualification of Quality Control Personnel to ANSI N45.2.6 Requirements	
QCP-2.2	Indoctrination, Training and Qualification of Quality Control Personnel to ASME Section III, Division 2 Requirements	
QCP-6.1	Preparation, Review and Approval of Quality Control Procedures	
QCP-6.2	Document Control	
QCP-6.3	Quality Control Review of Incoming Revisions/ Changes to Bechtel Specifications and Procedures	
QCP-9.1	Weld Inspection Piping ASME	R6
QCP-9.3	Inspection of Post Weld Heat Treatment	
QCP-9.4	Verification of Weld Filler Material Control	
QCP-9.5	Weld Inspection (AWS)	
QCP-10.1	Cadweld Inspection	
QCP-10.2	Preplacement Concrete Inspection	
QCP-10.3	Concrete Placement Inspections	
QCP-10.4	Post-Placement Concrete Inspection	

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<u>Procedure No.</u>	<u>Title</u>	
QCP-10.23	Waterstop/Joint Filler/Sealer Material Inspection	R6
QCP-10.24	Grouting Inspection	
QCP-10.25	Inspection of Bending and Fabrication of Reinforcing Steel	R6
QCP-10.27	Modification/Removal Control Procedure	
QCP-10.28	Control of Inspection Stamps	R6
QCP-11.1	Hydrostatic and Pneumatic Pressure Test Inspection	
QCP-12.1	Calibration and Control of Measuring and Test Equipment	
QCP-13.1	Storage and Maintenance Inspection/Verification	
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QAI-002	Preparation, Review, Distribution and Control of Supplements to Quality Assurance Procedures
QAI-003	Indoctrination, Training, Qualification, and Certification of Site Quality Assurance Audit Personnel
QAI-004	Issuance and Processing of Nonconformance Reports
QAI-005	Review and Approval of Quality Control and Construction Procedures
QAI-006	Audit of Ebasco Site Organization by the Client, Bechtel, Ebasco Home Office, Code or Regulatory Agency
QAI-007	Reportable Deficiencies
QAI-010	Site Quality Assurance Records
QAI-011	Management Corrective Action and Stop Work Authority
QAI-012	General Surveillance Instruction
QAI-013	Preparation, Conducting, Documenting and Logging of Audits
QAI-014	Quality Assurance Review of Radiographs
QAI-015	Procedure for the Calibration and Operation of the Radiographic Densitometer
QAI-016	Control of Site Quality Records
QAI-017	QA Review of Incoming Revisions to Bechtel and Houston Lighting and Power QA Program Documents


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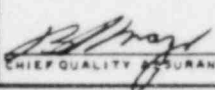
<u>Procedure No.</u>	<u>Title</u>
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CSP-2	Installation of Permanent Electrical and Mechanical Plant Equipment
CSP-3	Control of Lifting Apparatus
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CSP-7	Pipe Support Installation
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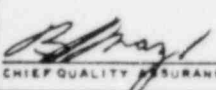
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CSP-82	AWS D1.1 Structural Welding
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CSP-85	Post Weld Heat Treatment
CSP-86	Repairs of ASME Section III and ANSI B31.1 Piping and Components
CSP-87	Welding Procedure Specification Qualification
CSP-88	Weld Filler Material Control
CSP-89	Field Welding and Repair of Aluminum Bronze ECW [Essential Cooling Water] Piping
CSP-90	Welding Documentation
CSP-91	Issuance and Control of Purge Dams
CSP-92	Control of Aluminum Bronze Material for Backing Rings and Welder Qualification Coupons
CSP-93	Control of Weld Filler Material For Non-Permanent Plant Maintenance
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1.0 SCOPE

This Section of the Manual describes the organizational structure, functional responsibilities, levels of authority, and lines of internal and external communication for management, direction, and execution of the Ebasco Quality Program. It is recognized that quality assurance is an interdisciplinary function and not the sole domain of a single quality assurance group; for that reason, this section of the Manual includes organizational and functional descriptions of several departments in addition to that department whose sole function is quality assurance.


2.0 GENERAL

2.1 The Ebasco Operations organization consists of four independent quality-related principal divisions headed respectively by the Senior Vice Presidents of Engineering and Construction, Consulting Engineering, and Projects and Procurement, and the Vice President Materials Engineering and Quality Assurance. Each of these officers of the company reports to Ebasco's President and Chief Executive Officer through the Executive Vice President Operations. Reporting to the Senior Vice President Engineering and Construction are the Vice President Engineering and Vice President Construction. Reporting to the Senior Vice President Consulting Engineering are the President of EnviroSphere Company, the Vice President Plant Operations and Betterment, and the Vice President Consulting Engineering. Reporting to the Senior Vice President Projects and Procurement is the Vice President Procurement.

A fifth quality-related principal division is headed by the Executive Vice President of Advanced Technology and Special Projects who reports directly to Ebasco's President. Reporting to the Executive Vice President Advanced Technology and Special Projects is the Vice President Advanced Technology.

2.2 Representatives of the Senior Vice President Projects and Procurement; of the Vice Presidents Engineering, Construction, Procurement, Plant Operations and Betterment, Consulting Engineering, and Materials Engineering and Quality Assurance; and of the President of EnviroSphere Company comprise the operations organization representatives of the Quality Program Committee, which is responsible for Ebasco Quality Assurance policy. Also included on this Committee is a representative of the Vice President Advanced Technology. This is shown diagrammatically by Figure I-2.1 at the end of this Section.

2.3 The divisions or departments most directly involved in the implementation of the quality assurance program for fabrication and

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installation are Materials Engineering and Quality Assurance, and Construction. The organizational structures of these are shown in Figures I-2.2 and I-2.4 at the end of this Section. The Construction Department provides overall contractual administration of a project, coordinating the efforts of involved departments and serving as a line of communication between Ebasco and its Clients. The Consulting Engineering, Plant Operations and Betterment, and Advanced Technology Departments are involved in the implementation of Quality Program requirements through the supplemental services they provide.

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The responsibilities of each department of the Ebasco Organization for quality assurance requirements applied to Nuclear Power Stations are described herein.

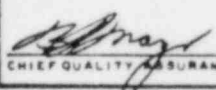
3.0 MATERIALS ENGINEERING AND QUALITY ASSURANCE

3.1 Primary responsibility for Quality Assurance rests with the Vice President Materials Engineering and Quality Assurance who reports directly to the Executive Vice President Operations. Qualification requirements for the position of Vice President Materials Engineering and Quality Assurance are: Bachelor of Science Degree in Engineering; 10 to 15 years of experience in quality-related work or equivalent experience in the engineering or construction of a nuclear power plant, including at least 10 years experience in responsible managerial project positions; thorough knowledge of the Ebasco Quality Assurance Program. The Materials Engineering and Quality Assurance Unit is comprised of the following organizations, each of which contributes directly to the implementation of the Quality Program (see Figure I-2.2):

- a) Quality Assurance Engineering
- b) Materials Applications
- c) Vendor Quality Assurance
- d) Quality Assurance Consulting Engineer
- e) Materials Engineering Laboratory

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3.1.1 Quality Assurance Engineering is administered by the Chief Quality Assurance Engineer who reports to the Vice President Materials Engineering and Quality Assurance. Qualification requirements for the position Chief Quality Assurance Engineer are: Bachelor of Science Degree in Engineering; 10-15 years of experience in quality-related work or equivalent experience in the engineering

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or construction of a Nuclear Power Plant, including at least 5 years experience in responsible managerial project positions; thorough knowledge of the Ebasco Quality Assurance Program. The Quality Assurance Engineering Department is responsible to plan implementation of, evaluate, monitor, and enforce the Ebasco Quality Program. This responsibility is carried out by five functional subdivisions:

- a) Project Quality Assurance Engineering
- b) Site Quality Assurance/Quality Control
- c) Site Quality Program
- d) Quality Assurance Specialists, which provide various other quality-related services and functions
- e) Nondestructive Examination (NDE) Quality Assurance

Managers, Supervisors, and Specialists in charge of the subdivisions report directly or through other supervisors to the Chief Quality Assurance Engineer. Engineers and Specialists are then assigned to specific projects from these subdivisions. The Quality Assurance Engineering Organization is shown in Figures I-2.6 and I-2.7 at the end of this Section.

3.1.1.1 Site Quality Assurance - The Manager Site Quality Assurance, who reports to the Chief Quality Assurance Engineer in New York, is responsible for the development, maintenance, and current status of Site Quality Assurance Procedures, for providing technical assistance and guidance to subordinate Quality Assurance Site Supervisors and staff, and for distribution and control of quality assurance manuals, as well as changes thereto, for the South Texas Project. (See Figures I-2.2 and I-2.6.) The Manager Site Quality Assurance has delegated authority to the Quality Program Site Manager on the preparation, review, approval, and distribution control of Site Quality Control procedures and project-related supplements to the Site Quality Assurance Procedures. | R6

3.1.1.2 Site Quality Program - A Quality Program Site Manager is assigned to the construction site on a resident basis for the purpose of overall planning, direction, and | R6

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implementation of the Ebasco Nuclear Quality Program Manual. The Quality Program Site Manager, who reports to the Chief Quality Assurance Engineer in New York, is subordinate to no individual on site and has the independent authority to identify site quality-related problems, to initiate or recommend solutions, to control existing nonconformances, to verify implementation of approved dispositions, to direct efforts to obtain ASME Certificates of Authorization for Ebasco as may be required for the South Texas Project, to represent Ebasco Quality Assurance Engineering with regard to South Texas Project activities, such as Client or his designee and/or Ebasco meetings, Client or his designee audits, management audits, and, when necessary, to stop work. He is responsible to assure that all personnel working for him are qualified for their respective positions and properly trained. The Chief Quality Assurance Engineer has delegated authority to the Quality Program Site Manager on the preparation, review, approval, and distribution control of project-related supplements to the applicable Quality Assurance Procedures. The Site Quality Program function is divided into three groups: Quality Assurance, Quality Control, and Quality Records, each reporting through a respective supervisor to the Quality Program Site Manager. (See Figure I-2.6.)

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3.1.1.2.1 Site Quality Assurance - A Quality Assurance Site Supervisor and staff of engineers and representatives are assigned the following functions:

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- a) Review and audit quality-related site construction and engineering activities and records on a continuing basis.
- b) Perform audits and surveillances of construction forces for adherence to prescribed approved procedures.
- c) Review and advise on Quality Control procedures and construction procedures for compliance with this Manual and code and regulatory requirements. When necessary, the Quality Assurance Site Supervisor may request the Manager Site Quality Assurance to assist in the review of Quality Control procedures.

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- d) Generate records of all reviews and audits performed. |R6
- e) Review all radiographic film for site-related nondestructive examination.
- f) Audit records and documentation prior to turnover to the Client. |R6
- g) Develop and implement Quality Assurance Instructions and project-related supplements to Site Quality Assurance Procedures and implement applicable Site Quality Assurance Procedures. |R6
- h) On-site distribution of those Quality Assurance procedures which are issued and controlled by the Manager Site Quality Assurance or his designee.
- i) The Quality Assurance Site Supervisor has stop work authority.

3.1.1.2.2 Site Quality Control - A Quality Control Site Supervisor and staff of engineers and inspectors are assigned the following functions consistent with the scope of work assigned to Ebasco:

- a) Planning and performance of inspection activities during the construction phase.
- b) Identifying and initiating correction of nonconforming conditions to requirements indicated by drawings, specifications, codes, or procedures, and performance of reinspection to verify corrective action taken.

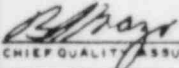
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- c) Establishing and enforcing quality control documentation and inspection requirements based upon specifications, codes, standards, and drawings as established by the Client or his designee. |R6
- d) Performance or monitoring of site NDE, soils, and concrete testing activities.
- e) Assisting in organizing and administering training seminars as required to assure proper level of training, and engaging in the certification of Quality Control personnel to the required level of qualification.
- f) Identification and control of the quality status of items.
- g) Development and implementation of applicable Quality Control procedures, and generation of inspection reports covering mandatory inspection activities at the construction site. |R6
- h) The Quality Control Site Supervisor has stop work authority.

The Site Quality Control Group will only be responsible for first-level Quality Control activities for safety-related items and services being performed by Ebasco's forces. |R6

3.1.1.2.3 Site Quality Records - A Quality Records Supervisor and staff of specialists are assigned the following functions:

- a) Develop, establish, and implement a system for the collection, storage, and maintenance of quality assurance records at the project construction site.

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- b) Responsible for review for completeness, control, storage, preservation, and safekeeping of site-generated quality assurance records until turnover to the Client or his designee. | R6
- c) Establishment and implementation of a records indexing system to permit proper traceability and retrieval.
- d) Establishment of a procedure for access to the records storage area, and removal and retrieval of quality records.

3.1.1.3 Quality Assurance Specialists - Quality Assurance Engineering has several specialty groups responsible for the following activities which are performed in accordance with Quality Assurance procedures: | R6

- a) Performance of In-service Inspection.
- b) Qualification and certification of personnel as required by applicable codes or standards.
- c) Development of Quality Assurance standards and procedures.
- d) Review, evaluation, and summarization of Code and Regulatory quality assurance requirements. | R6
- e) Conducting Quality Assurance education, both internal and external to Quality Assurance Engineering.
- f) Interdepartmental auditing of all individuals or groups responsible for activities covered by the Quality Program.
- g) Development of quality assurance records programs.
- h) Development of Quality Assurance Programs for Power Plant Operations.

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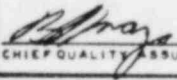
3.1.1.4 Nondestructive Examination Quality Assurance - This group, under the Assistant Chief Quality Assurance Engineer in charge of In-service Inspection and Nondestructive Examination, provides expertise with regard to conducting various forms of NDE and includes the following functions:

- a) Establish and/or interpret NDE requirements and acceptance criteria for fabricated and erected equipment as required.
- b) Review and comment on NDE procedures and radiographic films submitted by site construction forces, and/or the Client or his designee. | R6
- c) Advise site construction forces as to proper NDE procedures, applications, techniques, equipment, and qualifications.
- d) Qualification and certification of Ebasco NDE personnel. | R6

3.1.1.5 Radiation Safety - Ebasco's Corporate Radiation Safety Officer reports to the Chief Quality Assurance Engineer. He is responsible for auditing and enforcing the Ebasco procedures for radiation safety.


3.1.2 Materials Applications, under the supervision of the Chief Materials Applications Engineer, includes two subdivisions: Materials Applications Engineering and Welding Engineering. A Project Materials Applications Engineer and Project Welding Engineer are assigned to the South Texas Project. These positions may be assigned to the same individual if properly qualified. A Site Welding Superintendent, who reports to the Chief Material Applications Engineer in New York, is assigned to the construction site and is responsible for the direction, supervision, and administration of a site welding operations staff. Quality-related activities of Materials Applications personnel include the following: | R6

- a) Develop material and welding specifications.
- b) Develop and qualify welding procedures and fabrication techniques for use by Ebasco site construction forces. | R6

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- c) Prepare site welding operations implementation procedures for Ebasco site construction forces. |R6
- d) Advise Ebasco Construction management as to the development and application of advanced welding techniques which would enhance quality.
- e) Prepare Process Data Checklists which provide comprehensive requirements for welding process and procedure selection. |R6
- f) Review specifications and drawings provided by the Client or his designee for compliance with applicable codes and regulatory requirements for proper selection of materials, weld procedures, and joint details. |
- g) Supervise the welder performance testing program at the construction site to assure that all code and regulatory requirements have been met. |R6
- h) Provide technical assistance as required to resolve problems at the construction site in the areas of welding materials, heat treatment, and other related areas. |R6
- i) Provide technical assistance concerning material properties under service conditions involving stress, radiation, temperature, corrosive media, etc, to determine capability of specific materials to perform in such environments.
- j) Review, monitor, and provide recommendations for upgrading of Ebasco welder training programs and welder assignment practices. |
- k) Prepare and monitor site filler material control procedures. |R6
- l) Supervise and direct testing and applied research programs required to resolve site construction materials and welding problems. |

3.1.3 The Quality Assurance Consulting Engineer reports to the Vice President Materials Engineering and Quality Assurance. He is responsible for conducting audits of the Ebasco Quality Assurance function to determine and report its compliance with the Ebasco Quality Program requirements.

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3.1.4 The Materials Engineering Laboratory performs field nondestructive examination services at the construction site. The Laboratory is administered by a Manager who reports to the Vice President Materials Engineering and Quality Assurance. |R6

4.0 CONSTRUCTION

Primary responsibility for construction rests with the Vice President of Construction (see Figure I-2.4). The Construction Department has the prime responsibility for the performance of quality construction.

4.1 The Ebasco Construction Manager reports to the Vice President of Construction and is responsible for overall supervision and coordination of all construction activities and services. The Ebasco Construction Manager has stop work authority.

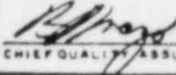
4.2 The Manager of Construction Services reports to the Vice President of Construction and is responsible for general supervision of Construction Department Quality Program activities and of the Construction Engineering Group. |R6

4.3 The Site Manager reports to the Ebasco Construction Manager. The Site Manager has the responsibility for the direction and coordination of all on-site activities related to construction. The Site Manager has stop work authority. |R6

4.4 The Project Superintendent reports to the Site Manager and is responsible for performing general site supervision of construction in accordance with drawings, specifications, and contractual obligations. The Project Superintendent has stop work authority.

4.5 The Unit Superintendents report to the Project Superintendent. Each Unit Superintendent is individually responsible for the Ebasco construction operations and activities within his assigned unit of the plant. The Unit Superintendents have stop work authority.

4.6 The Assistant Superintendents report to the Unit Superintendents. The Assistant Superintendents will manage all phases of construction within disciplines assigned, including field engineering and cost control, to assure that the work accomplished is completed within the budget and in accordance with all applicable installation specifications. |R6

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4.7 The Discipline Superintendents report to the Assistant Superintendents. Each Discipline Superintendent will direct, coordinate, and monitor all work performance within the assigned discipline to assure that work proceeds in accordance with approved plans, specifications, and the Quality Assurance Program. | R6

4.8 The Labor Relations Representative reports to the Site Manager. The Labor Relations Representative is conversant with the general provisions of the Project Stabilization Agreement. The Labor Relations Representative participates in settlement of local labor disputes, assists in preparation for arbitration proceedings related to operations at the site, and advises the Project Superintendent on local labor relation matters.

4.9 The Senior Resident Engineer reports to the Site Manager and is responsible for administering, coordinating, and supervising all Site Construction Engineering and technical activities, for interpretation of design documents and specifications, and for furnishing assistance to Ebasco site personnel as required. The Senior Resident Engineer has stop work authority. | R6

4.10 The Construction Indirects Superintendent reports to the Project Superintendent. The Construction Indirects Superintendent is responsible for the direction of all support craft forces on the project, and the supply, maintenance, and repair of major project construction equipment. The Construction Indirects Superintendent has stop work authority.

4.11 The Construction Services Manager reports to the Site Manager and will be responsible for providing and establishing adequate and efficient security, safety, and training and development programs.

4.12 The Safety Supervisor reports to the Site Manager. The Safety Supervisor is responsible for establishing and enforcing the site safety and industrial hygiene programs in accordance with established policy and all federal and state regulations, as well as any other criteria necessary to insure the safety of site personnel. | R6

4.13 The Administrative Manager reports to the Site Manager. The Administrative Manager is responsible for providing the necessary accounting, timekeeping, and computer support, as required to support the construction effort. | R6
| R6

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 ORGANIZATION AND RESPONSIBILITIES	SECTION QA-I-2
APPROVAL <i>B. Gray</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION 5
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4.14 The Outlying Facilities Superintendent reports to the Project Superintendent and is responsible for supervising and coordinating in an efficient manner all construction activities of all the outlying plant facilities, including the Diesel Generating Building in Unit 1 and Unit 2. The Outlying Facilities Superintendent has stop work authority.

4.15 The Site Welding Superintendent reports to the Chief Materials Applications Engineer or his designee. The Site Welding Superintendent receives his day-to-day and technical direction from the Materials Applications Department in New York. | R6

4.16 The System Completion Superintendent reports to the Project Superintendent and is responsible for systems completion. He ensures construction progress in support of systems completion. This includes coordination of all prestart-up planning and scheduling, and conducting construction test efforts.

4.17 The Second Shift Superintendent reports to the Project Superintendent and is responsible for performing general site supervision of construction in accordance with drawings, specifications, and contractual obligations for all activities performed on the second shift. The Second Shift Superintendent has stop work authority. | R6

5.0 INTERFACE

Interface, as applicable, is so illustrated by Figure I-2.9 at the end of this Section and is explained by appropriate and applicable South Texas Project documents.

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2	SECTION QA-I-2
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6.0 ORGANIZATION CHARTS

The following figures apply to this Section:

<u>Figure No.</u>	<u>Title</u>	<u>Revision</u>
I-2.1	Operations and Advanced Technology Organization Showing Quality Program Committee Representation	4
I-2.2	Materials Engineering and Quality Assurance Organization	5
I-2.3	Deleted	-
I-2.4	Organization for Construction	3-STP
I-2.5	Deleted	-
I-2.6	Quality Assurance Organization	5
I-2.7	Quality Assurance Engineering Quality Assurance Specialists	5
I-2.8	Deleted	-
I-2.9	Interface Between Houston Lighting & Power Company, Bechtel Energy Corporation, and Ebasco Services Incorporated	2-STP

R6

Ebasco Services Incorporated
OPERATIONS AND ADVANCED TECHNOLOGY ORGANIZATION
SHOWING QUALITY PROGRAM COMMITTEE REPRESENTATION

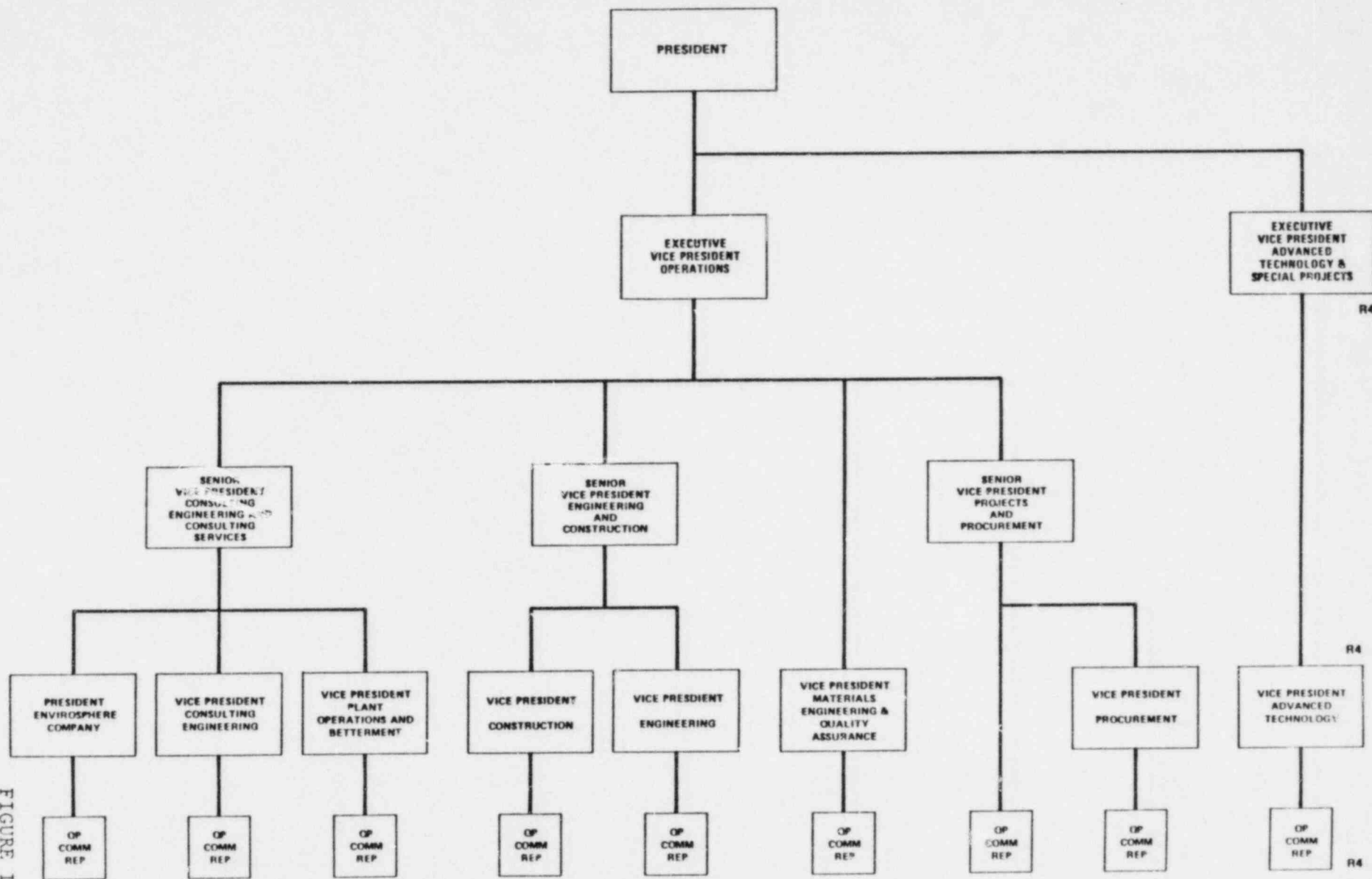


FIGURE I-2.1
 REV. 4

Ebasco Services Incorporated
MATERIALS ENGINEERING & QUALITY ASSURANCE ORGANIZATION

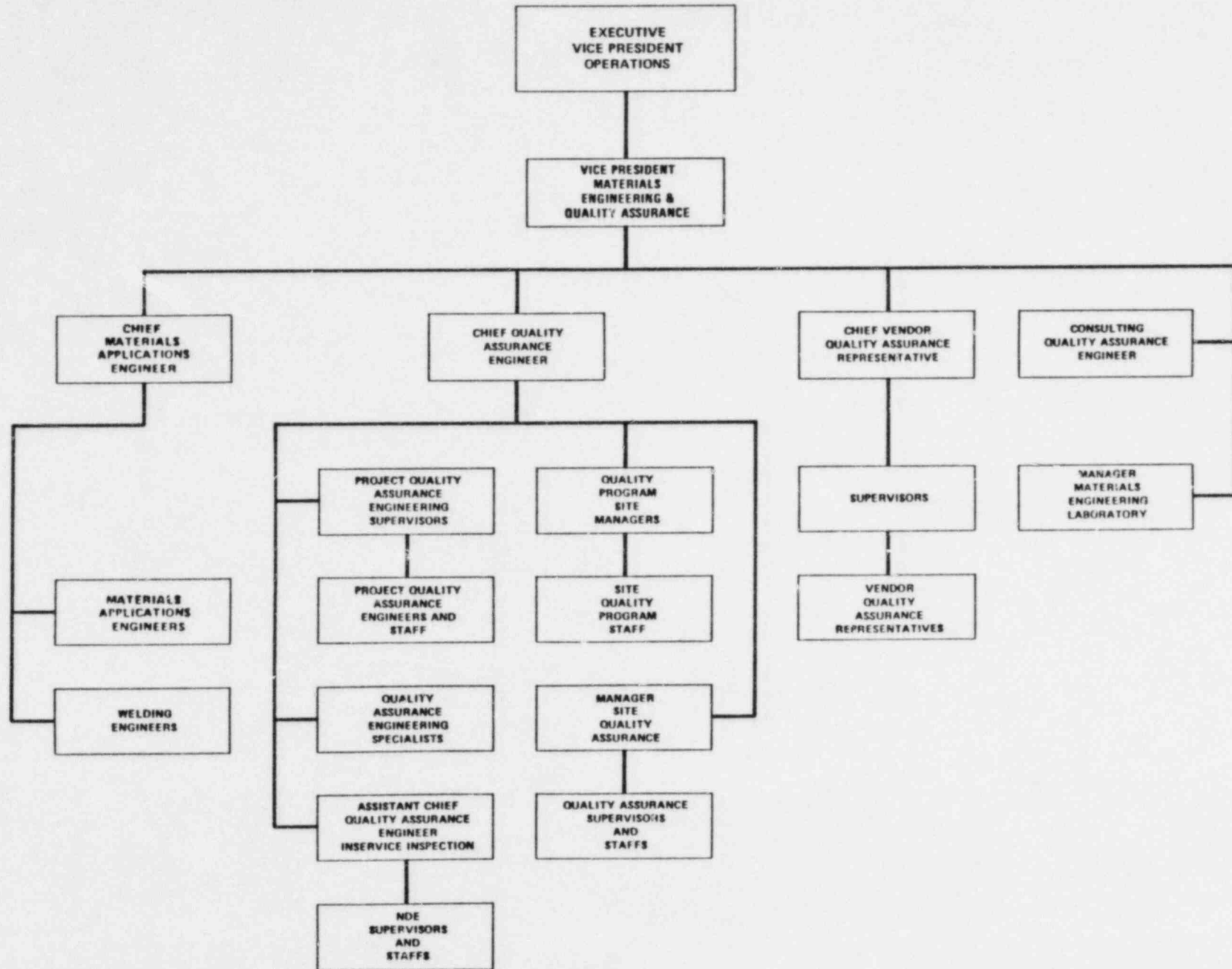


FIGURE I-2.2
 REV. 5

Ebasco Services Incorporated ORGANIZATION FOR CONSTRUCTION

ADAPTED FOR
HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT
ELECTRIC GENERATING STATION UNITS 1 & 2

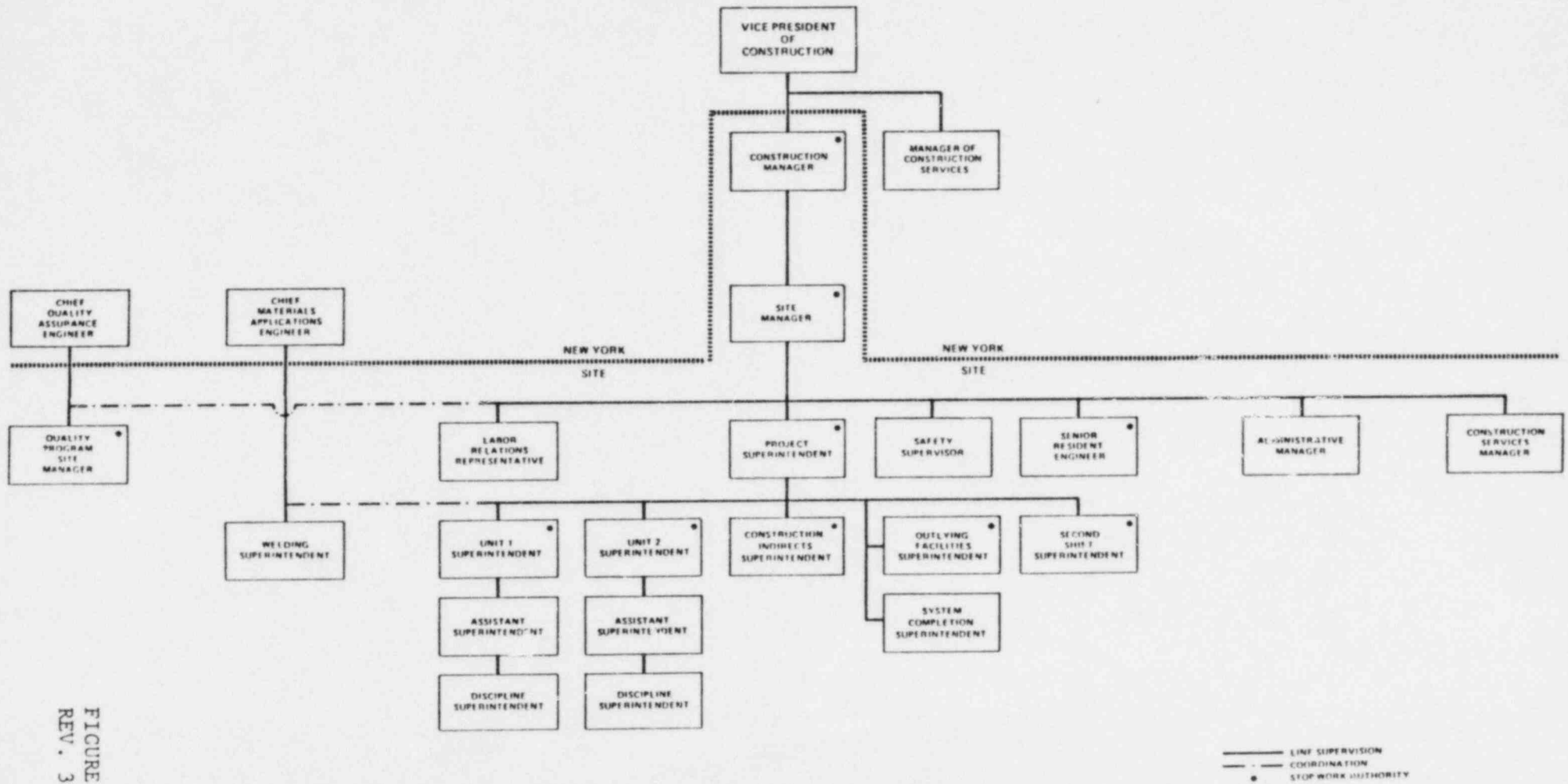


FIGURE I-2.4
REV. 3-STP

EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

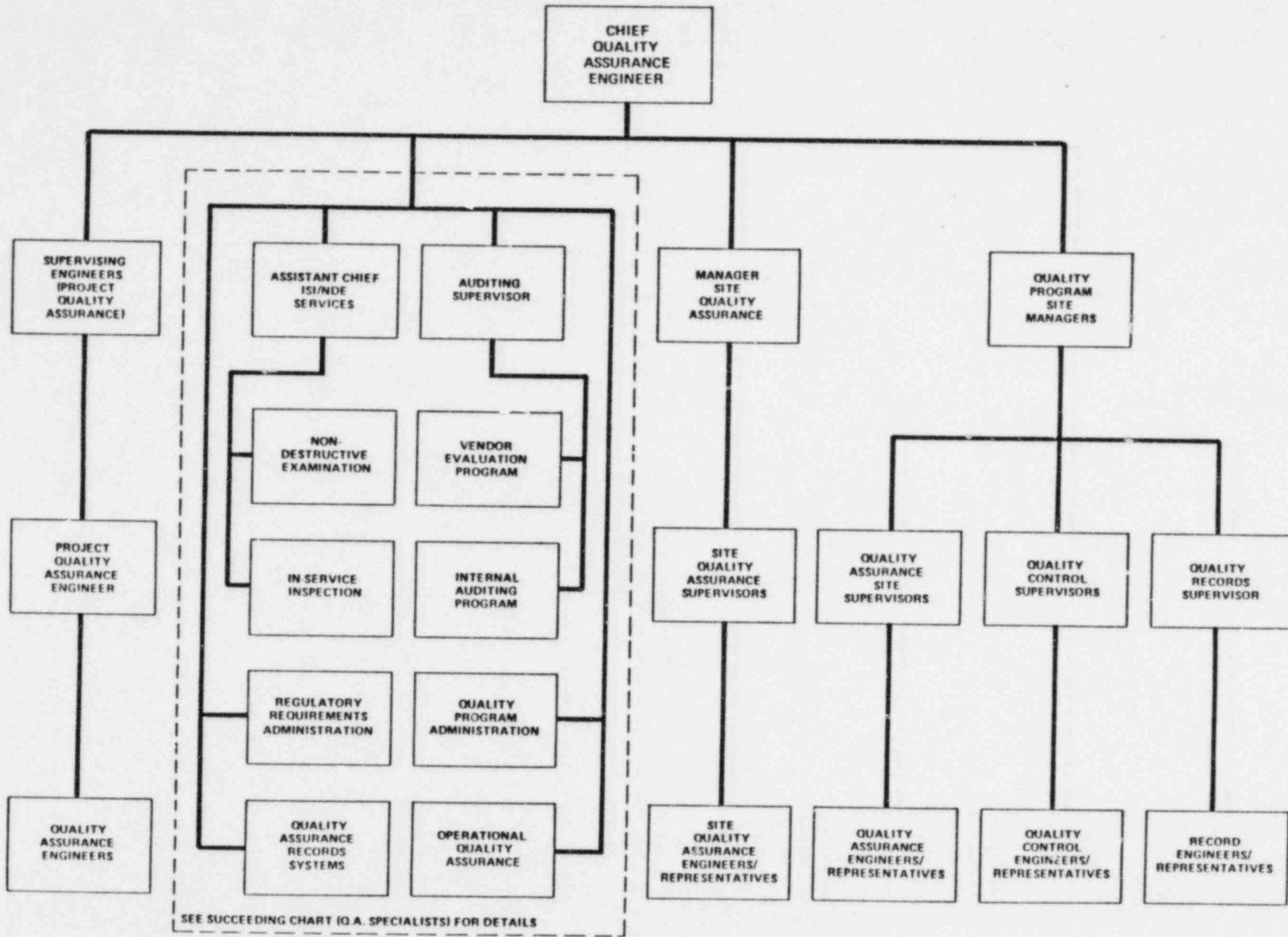


FIGURE I-2.6
REV. 5

EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING QUALITY ASSURANCE SPECIALISTS

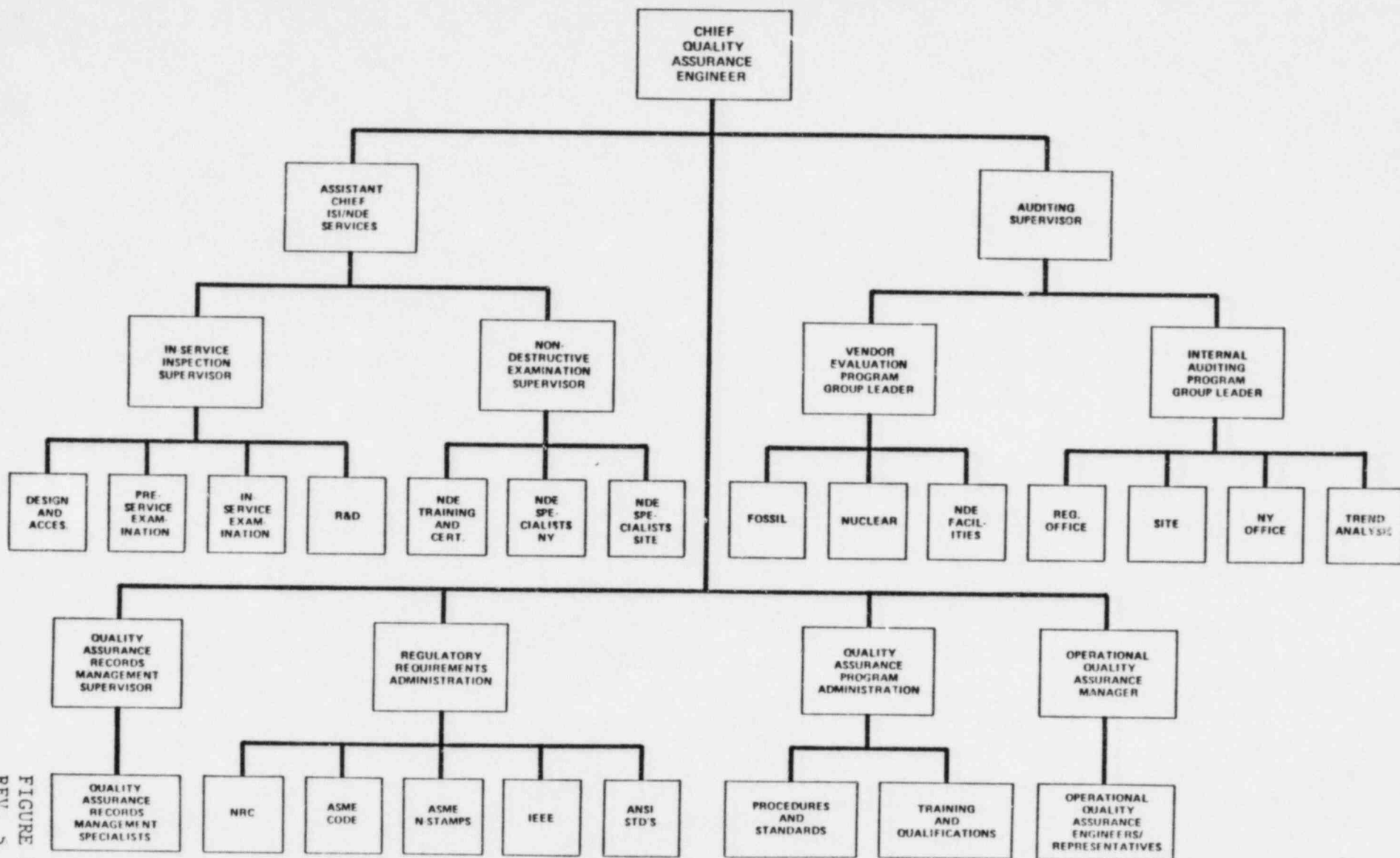


FIGURE I-2.7
REV. 5

INTERFACE BETWEEN HOUSTON LIGHTING & POWER COMPANY, BECHTEL ENERGY CORPORATION, AND EBASCO SERVICES INCORPORATED

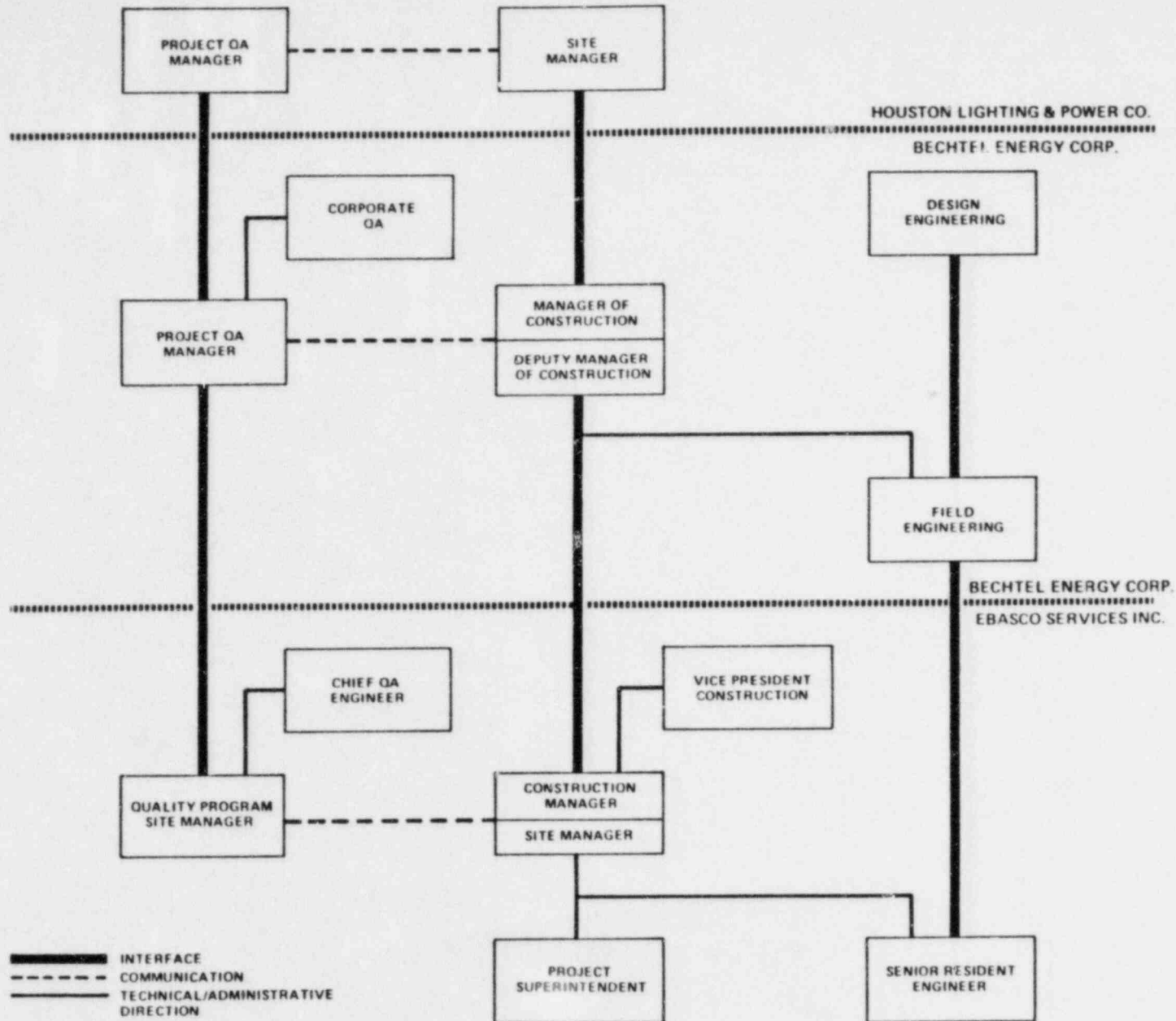



FIGURE I-2.9
 REV. 2-STP

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE	SECTION QA-I-3
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84

1.0 SCOPE

This Section describes the program for indoctrination and training of Ebasco personnel engaged in activities affecting quality with respect to the requirements of this Manual and its supporting principal implementing procedures. Ebasco personnel shall be indoctrinated and trained, as necessary, to assure that proficiency is achieved and maintained in those parts of the Quality Assurance Program as it applies to the individual's responsibility.

|R6

2.0 GENERAL

The Indoctrination and Training Program is a combined effort of the Ebasco organizations implementing any portion of this Manual and its principal implementing procedures, and the Quality Assurance organization. The Construction, Materials Applications, and Quality Assurance organizations are responsible to schedule, indoctrinate, and train their personnel, and to record this indoctrination and training, unless otherwise denoted by project commitments.

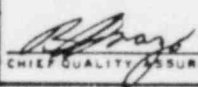
|R6

3.0 PROGRAM REQUIREMENTS

3.1 Written lessons shall contain the substance of the indoctrination and training program. These lessons shall address one or more quality-related topics, to achieve one or more stated educational objectives. The training will be conducted by trained supervisors or their designees within the Construction and Materials Applications organizations, and by a Quality Assurance Education Specialist or designee when the need arises. A Quality Assurance Education Specialist will be responsible for training the selected instructors within the other Ebasco organizations in methods of conducting required quality assurance training.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE	SECTION QA-I-3
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3.2 For Construction, Quality Assurance, and Materials Applications, training lessons are maintained by each organization respectively. The training lessons relate to activities the personnel shall be performing. For Construction and Materials Applications, a responsible person within the respective organization shall determine the training requirements for each individual based on that individual's assigned responsibilities and past experience. Within the Quality Assurance organization, a Quality Assurance Education Specialist shall be responsible for determination of an individual's training requirements based upon that individual's assigned responsibilities and past experience, as applicable. Training lessons are updated, when required, and reflect any changes in the program. Copies of these training lessons shall be kept on file by the respective organization. Quality-affected training will reflect project requirements.

R6

4.0 RECORDS

Individual training files for personnel in the Construction, Quality Assurance, and Materials Applications organizations receiving indoctrination and training in accordance with this program's requirements shall be maintained by each affected organization. These records will indicate, as applicable, the subject matter, the training received, attendance date, time duration, instructor, and special qualifications or restrictions, if any.

R6

5.0 SCHEDULING

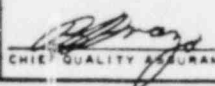
Scheduling training of applicable organization personnel will be coordinated with a Quality Assurance Education Specialist where necessary. As new personnel are added to the South Texas Project within an organization, appropriate indoctrination and training sessions will be scheduled based on the requirements of this Manual.

R6

6.0 PROGRAM UPDATING

This indoctrination and training program is subject to continuous development to broaden and improve its effectiveness. A Quality Assurance Education Specialist will hold periodic discussions with those groups involved with the training program to coordinate recommendations for updating. A Quality Assurance Education Specialist is responsible for updating the program for the Quality Assurance organization.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE	SECTION QA-I-3
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7.0 ADMINISTRATION

7.1 The Quality Assurance Engineering Quality Resource and Training Management Group shall have overall responsibility for administrating the quality assurance training program. It shall provide technical expertise for developing necessary programs and review existing programs for currency. | R6

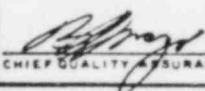
7.2 Management of each Ebasco organization is responsible to assure that the appropriate personnel attend the training program(s) for which they are scheduled. |

8.0 TRAINING, QUALIFICATION, AND CERTIFICATION OF QUALITY CONTROL PERSONNEL

Training, qualification, and certification of Site Quality Control inspection personnel shall be in accordance with written procedures. The Quality Control Site Supervisor shall coordinate with a Quality Assurance Education Specialist regarding the training, qualification, and certification of Quality Control personnel. Qualification records for all Quality Control personnel assigned to the South Texas Project site shall be maintained by a Quality Assurance Education Specialist at the site. These records will be audited initially by the Chief Quality Assurance Engineer, or his designee, for compliance with the qualification requirements and thereafter on an annual basis by auditors from the Site Quality Assurance organization. Any deficiencies detected shall be reported in writing by the Quality Assurance Site Supervisor, or his designee, to the Quality Control Site Supervisor for resolution. Pending resolution of the deficiency, the individual shall be restrained from performing any Quality Control activities. | R6

9.0 AUDITS

Audits of indoctrination and training activities shall be performed to assure compliance with this Program. Such audits shall be performed in accordance with the requirements of Section QA-III-9 of this Manual.

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84
		QUALITY ASSURANCE RECORDS	

1.0 SCOPE

This Section covers the requirements and guidelines for the collection, filing, storage, disposition, and maintenance of lifetime and nonpermanent quality assurance records associated with the construction and maintenance of nuclear power plants. |R6

2.0 RESPONSIBILITY

It shall be the responsibility of Ebasco to maintain quality assurance (QA) records in accordance with the requirements of this Section until such time as those records are turned over to the Client or his designee for permanent storage. The HL&P STP - RMS Site Records Center is the principal and final records repository. All QA records shall be accessible to the Client or his designee until such time as they are turned over to the Client or his designee. |R6
|R6
|R6

3.0 QUALITY ASSURANCE RECORDS SYSTEM

Each organization within Ebasco (including but not limited to the Construction and Quality Assurance organizations) that participates in the generation, collection, filing, storage, disposition, or maintenance of quality assurance records shall establish a written quality assurance record system applicable to the function(s) performed by that organization. These written procedures shall provide that each completed quality assurance record shall be transmitted by the organization generating the records to the Ebasco Site Quality Records group for final review and transmittal to the Client or his designee. This system shall be implemented and enforced in accordance with the requirements of the following paragraphs that apply to the function(s) of that organization. |R6


4.0 GENERATION OF QUALITY ASSURANCE RECORDS

4.1 The QA records to be generated shall be specified in the applicable design specifications, construction, maintenance, test, or inspection procedures, and other documents as necessary. |R6

4.2 All QA records shall be dated and signed or otherwise authenticated.

4.3 QA records shall be indexed. The indexing system shall include as a minimum: |R6

4.3.1 QA records retention times (retention period begins on date of satisfactory operation of items).

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4.3.2 Location of storage area.

4.3.3 Location of QA records within storage area. |R6

4.4 All QA records shall be distributed and handled in accordance with written instructions.

4.5 There shall be sufficient information in the QA records to permit identification between the records and the item(s) or activity to which it applies. Identification of QA records may be by purchase order number, system, or any means that permits accurate traceability. |R6

4.6 All QA records shall be classified as "lifetime" or "nonpermanent."

4.7 When QA records are corrected or supplemented they shall be reviewed or approved by the organization that originated the records. All corrections and supplements shall bear dates and authorized signatures or initials. |R6


4.8 Inspection and test records shall contain the following, as applicable:

- a) The type of observation. |R6
- b) Evidence of completing and verifying an inspection or test operation. |
- c) The date and results of the inspection or test.
- d) Information related to nonconformances.
- e) Inspector or data recorder identification.
- f) Evidence of the acceptability of the results. |R6

5.0 RECEIPT OF QUALITY ASSURANCE RECORDS |R6

5.1 A system shall be established for receipt of QA records at the Site which shall include:

- 5.1.1 A checklist designating the required QA records.

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5.1.2 A record of QA records received.

5.1.3 Written procedures for receipt and inspection of incoming Site QA records.

These quality assurance records shall be maintained by Site Quality Records and audited by Site Quality Assurance to assure that they are maintained properly until turned over to the Client or his designee.

| R6

5.2 The system described in Paragraph 5.1 shall permit an accurate assessment of the status of the QA records during the receiving process.

6.0 TEMPORARY STORAGE, PRESERVATION, AND SAFEKEEPING

6.1 QA records shall be stored in accordance with a written procedure which shall require or include the following:

6.1.1 Description of storage facility, if other than a dual facility.

| R6

6.1.2 Description of filing system to be used.

6.1.3 Method for verifying that QA records received are in agreement with transmittal documents and pre-established records checklist and that the QA records are legible.

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6.1.4 Rules governing access to files.

6.1.4.1 A list shall be generated designating those personnel who shall have access to the files.

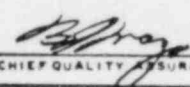
6.1.5 Method for maintaining control of QA records removed from storage. Such method shall provide for signing out of QA records removed from storage or other appropriate means of maintaining control of the records removed.

| R6

6.1.6 Method of filing supplemental information and disposing of obsolete QA records. Supplemental information shall be filed with the original documents whenever practical.

6.2 A custodian (or custodians) shall be designated to implement the requirements of Paragraph 6.1.

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6.3 QA records may be stored within a temporary storage facility if they are protected from damage and loss. This shall include: |R6

6.3.1 Storage within fire-resistant cabinets with a four-hour Underwriters' rating or a satisfactory alternative.

6.3.2 Protection from condensation.

6.3.3 Disallowance of loose documents. Records shall be attached to binders, placed in folders, or similarly maintained.

6.3.4 Specially processed QA records such as radiographs, microfilm, etc, shall be stored and protected in accordance with the manufacturer's recommendations. |R6

6.4 A satisfactory alternative to the requirements of Paragraph 6.3 is maintenance of duplicate QA records stored in a separate remote location.

6.5 Audits shall be performed by Site Quality Assurance to assure the effectiveness of the storage system, and shall include: |R6


6.5.1 Verification that logged-in QA records are available in their proper location and in good condition.

6.5.2 Audit results shall be documented and discrepancies shall be reaudited to assure their correction.

6.6 The storage systems shall provide for accurate retrieval of QA records without undue delay.

7.0 DISPOSITION OF QA RECORDS

Upon transfer of QA records, the Client or his designee shall acknowledge in writing the receipt of the particular QA records. |R6

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84
		INSTRUCTIONS, PROCEDURES, AND DRAWINGS	

1.0 SCOPE

Activities affecting quality performed at the construction site shall be described in written instructions, procedures, or drawings that have been developed in accordance with the requirements of this Section. Departmental procedures which describe the manner in which activities affecting quality are to be accomplished are part of the Ebasco Quality Program.

2.0 RESPONSIBILITIES

2.1 Where the Ebasco Nuclear Quality Assurance Manual designates an individual or organization with the responsibility of performing quality-related functions at the construction site, such functions shall be performed in accordance with written instructions, procedures, or drawings that have been developed by the organization performing the function. These instructions, procedures, and drawings shall establish the manner of performing the activity in accordance with the requirements of the Ebasco Nuclear Quality Assurance Program Manual and of the organization performing the activity.

2.2 When documented evidence is required for the satisfactory performance of particular activities, checklists, forms, and/or other appropriate means shall be utilized to provide this evidence. Such documents shall be signed and dated by the party performing the activity.

2.3 Ebasco procedures, instructions, or drawings describing activities affecting quality which are qualitative or quantitative in nature (ie, inspections or tests) shall contain or reference criteria for determining that such activities have been satisfactorily accomplished.

3.0 DEVELOPMENT OF INSTRUCTIONS, PROCEDURES, AND DRAWINGS

3.1 Instructions, procedures, or drawings for activities affecting quality at the construction site shall be developed by the Construction and Site Quality Assurance organizations for their respective quality-related functions. The Ebasco Nuclear Quality Assurance Program Manual shall be used as a guideline for their development. In addition, all Site Quality Control Procedures shall include at least the following:

- a) Identification of characteristics to be inspected.
- b) Identification of the individuals or groups responsible for performing the inspection operation.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2	SECTION QA-III-1
APPROVAL <i>[Signature]</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION 3
		INSTRUCTIONS, PROCEDURES, AND DRAWINGS	DATE 3/26/84

- c) Acceptance and rejection criteria.
- d) A description of the method of inspection.
- e) Verification of completion and certification of inspection.
- f) A record of the results of the inspection operation.

3.2 The Ebasco Engineering Development and Standards Department shall develop company instructions and procedures of categories, such as Nuclear (N), pertaining to quality-related functions. | R6

3.3 Individual departments/disciplines shall be responsible for the development of their own intradepartmental/discipline instructions, procedures, or drawings that establish the methods for performing quality-related functions. The Ebasco Engineering Development and Standards Department will provide, upon request, guidance and assistance in developing the documents. | R6


3.4 If so requested by a department, Quality Assurance Engineering shall act in an advisory capacity during the preparation of internal Ebasco procedures.

3.5 All procedures, instructions, and drawings for activities affecting quality shall be identified, dated, and shall provide authorized signature(s) of approval.

3.6 To assure that all Ebasco Quality Control and Construction procedures and instructions comply with this manual, site-specific requirements, and applicable codes and regulatory requirements, they shall be submitted for review and acceptance to Ebasco Site Quality Assurance prior to implementation. When required by the Contract, Quality Assurance, Quality Control, Special Process, and Construction Procedures and instructions shall also be submitted to the Client or his designee for acceptance prior to implementation.

4.0 DISTRIBUTION AND CONTROL

4.1 Each Ebasco department shall be responsible for maintaining and enforcing a written system for the distribution and control of that organization's instructions, procedures, and drawings (other than design; ie, rigging drawings) for activities affecting quality. This system shall provide for at least the following:

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 INSTRUCTIONS, PROCEDURES, AND DRAWINGS	SECTION QA-III-1
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84

4.1.1 Copies of these documents and revisions thereto shall be distributed to all appropriate department personnel in a timely manner.

4.1.2 Outdated and/or superseded documents shall either be collected or shall be clearly marked as superseded to avoid inadvertent use.

4.1.3 A file of the latest revision of these documents shall be maintained. Such a file shall be readily available to all affected personnel.

4.1.4 A log of the documents shall be maintained. The log shall indicate as a minimum:

- a) Title of document.
- b) Document identification number.
- c) Latest revision number and date of document presently in use.

4.2 A historical file of all revisions and changes to instructions, procedures, and drawings shall be maintained by the organization responsible for such documents or as may be described in the applicable procedures.

4.3 All approved Ebasco site-generated field sketches, construction procedures, quality control procedures, and special process procedures shall be transmitted to the Client or his designee for distribution and control in accordance with Section QA-III-2 of this Manual.

5.0 CHANGES TO DOCUMENTS

Changes to Ebasco documents shall be reviewed and approved by the same organization responsible for the original document when those changes affect the original reviewer, unless delegated in writing by the originating organization to another responsible organization. The reviewing organization shall have access to pertinent background information upon which to base their approval and shall have adequate understanding of the requirements and intent of the original document.

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 DOCUMENT CONTROL	SECTION QA-III-2
APPROVAL <i>[Signature]</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION <u>4</u> DATE <u>3/26/84</u>

1.0 SCOPE

This Section of the Manual establishes the requirements for the control of all project documents used by Ebasco which have an effect on quality-related activities. These requirements apply to those documents such as specifications and drawings, as well as site instructions and site procedures, which control or direct activities affecting quality.

2.0 RESPONSIBILITIES

2.1 The corresponding Department Heads or their designees shall be responsible for furnishing the Client or his designee with the latest of all Ebasco site-generated field sketches, construction procedures, quality control procedures, and special process procedures.

2.2 The Client or his designee shall be responsible for the distribution and control of all construction site design documents, drawings, specifications, construction procedures, quality control procedures, and special process procedures.

2.3 The Quality Assurance Site Supervisor or his designee shall be responsible for the distribution and control of site-generated quality assurance procedures and instructions.

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3.0 ISSUANCE OF CONTROLLED DOCUMENTS

3.1 Establishment of Document Control Stations

3.1.1 Document control stations shall be established and maintained by the Client or his designee.

3.1.2 Requests by Ebasco for the establishment of new or deletion of existing document control stations for the distribution of controlled documents shall be submitted by the corresponding Department Head, Unit Superintendents, or Project Superintendent to the Client or his designee.

3.1.3 Requests by Ebasco for additions or deletions of documents issued to an established document control station shall be submitted to the Client or his designee.

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84
		DOCUMENT CONTROL	

3.2 Design Documents, Drawings, and Specifications

3.2.1 The Client or his designee shall furnish, distribute, and control all design documents, drawings, and specifications to the established document control stations in accordance with the Client's or his designee's written procedures.

3.2.2 Ebasco-prepared field sketches shall be transmitted by the Senior Resident Engineer to the Client or his designee for distribution to the established document control stations by the Client or his designee.

3.2.3 Ebasco personnel shall use during their work activities the latest design documents, drawings, and specifications as provided by the Client or his designee at the appropriate document control stations and comply with the approved Ebasco site document control procedure.


3.3 Ebasco Intradepartmental/Discipline Instructions and Procedures

3.3.1 Intradepartmental/Discipline instructions and procedures shall be issued and controlled in accordance with Section QA-III-1 of this Manual.

3.3.2 Quality Assurance procedures describing auditing responsibilities of Site Quality Assurance shall be distributed and controlled at the construction site in "book" form. A master file shall be maintained of all procedures and revisions. A master list shall be maintained indicating each person or organization to whom a book of procedures has been issued. New or revised procedures will be issued to each holder of a procedure "book". A receipt system shall be used which requires written acknowledgment of distributed procedures.

3.4 Ebasco Site-Generated Procedures and Instructions

Ebasco site-generated construction, special process, and quality control procedures and instructions shall be transmitted to the Client or his designee for distribution to the established document control stations.

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84

3.5 Field Change Requests

3.5.1 A Field Change Request shall be submitted to the Senior Resident Engineer from applicable site personnel whenever conditions arise which may warrant consideration by the Client or his designee of a change in the specified design.

3.5.2 The Senior Resident Engineer shall submit the proposed Field Change Request to the Client or his designee for evaluation, disposition, distribution, and control by the Client or his designee in accordance with the Client's or his designee's written procedures.

3.6 Field Change Notice

3.6.1 A "Field Change Notice" shall be generated by the Senior Resident Engineer as is allowed by the design specification and shall be approved, issued, and controlled by the Senior Resident Engineer in accordance with approved site procedures.

3.6.2 A Field Change Notice (FCN) is to provide construction with a method of documenting conditions (not tolerances) that are within criteria allowed by the applicable specifications. An FCN shall not be used in lieu of a Nonconformance Report (NCR) or a Field Change Request (FCR).

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4.0 CHANGES TO DOCUMENTS

Changes to Ebasco documents shall be distributed in the same manner as the original document. Revised documents shall be controlled in accordance with the requirements of this Section and/or written procedures in order to avoid inadvertent use of outdated documents.

5.0 QUALITY ASSURANCE RECORDS

Quality Assurance records shall be maintained by Site Quality Records which shall be audited by Site Quality Assurance to assure that they are maintained properly.


5.1 The system for control and retrieval of Quality Assurance records at the site shall be in accordance with Section QA-I-6 of this Manual.

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84

6.0 AUDITS

Ebasco Site Quality Assurance shall audit the Client's or his designee's control and distribution of Ebasco-generated construction, special process, and quality control procedures and instructions in accordance with the requirements of Section QA-III-9 of this Manual.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 NONCONFORMANCES	SECTION QA-III-6
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84

1.0 SCOPE

This Section establishes the requirements for the identification, control, and disposition of items or services found to be in nonconformance with the applicable requirements at the construction site. All activities described in this Section shall be performed in accordance with written instructions and/or procedures.

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2.0 CONSTRUCTION SITE NONCONFORMANCES

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2.1 Nonconformances at the construction site may be detected by Ebasco Site Quality Control, Site Quality Assurance, or Construction. All nonconformances detected shall be reported to the Quality Assurance Site Supervisor and/or the Quality Control Site Supervisor or their designees.

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2.2 Quality Control procedures shall require that all nonconforming items shall be clearly marked or tagged as nonconforming and shall be segregated when possible.

2.3 The Quality Assurance Site Supervisor, the Quality Control Site Supervisor, or their designees shall document nonconformances detected by or reported to them by issuing a South Texas Project Site Nonconformance Report. A preliminary assessment of the severity of the nonconformance shall be made in accordance with Company Procedure N-23 or approved site procedure. The final responsibility for evaluation of all nonconformances for possible reportability rests with the Client or his designee.

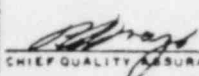
|R6

2.4 The Nonconformance Report shall then be reviewed and processed in accordance with Paragraph 4.0 below.

2.5 After processing of the Nonconformance Report, the Quality Assurance Site Supervisor or his designee shall distribute copies of the reviewed and evaluated report in accordance with internal Site Quality Assurance procedures.

2.6 The Quality Assurance Site Supervisor and the Quality Control Site Supervisor or their designees from the Site Quality Assurance organization shall verify by audits, reinspections, or other appropriate means that the necessary corrective actions are taken.

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3.0 REINSPECTION

3.1 For nonconformances detected at the construction site, the Quality Control Site Supervisor or his designee shall assure that reinspection is performed on all items and services reported as nonconforming.

Reinspection shall be performed in accordance with the requirements of the governing Code(s) and in accordance with requirements at least as stringent as those by which the nonconformance was detected. He shall document the satisfactory correction or resolution of all nonconformances on the dispositioned Nonconformance Report. This documentation shall provide sufficient detailed information for as-built records.

3.1.1 Nonconformances not corrected in accordance with the requirements of the approved disposition to the Nonconformance Report shall not be accepted by Site Quality Control. Items or services shall not be accepted by Site Quality Control until such time as the appropriate corrective action has been accomplished.

4.0 REVIEW OF NONCONFORMANCE REPORTS


4.1 Upon receipt or initiation of a Nonconformance Report, the Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall perform the following functions in accordance with QA procedures and/or instructions:

4.1.1 Log-in the report and record a unique identifying number on the report.

4.1.2 Route the report to the Senior Resident Engineer or his designee who shall review the report, and, where necessary, contact the Client or his designee to discuss the suitability of the recommended disposition.

4.1.3 Receive the report with Ebasco Resident Engineering's recommended disposition documented thereon and review it for concurrence.

4.1.4 When required, transmit the report to the Client or his designee for evaluation of the disposition of the nonconformance. Dispositions for all nonconformances to the design specifications or other documents originally requiring review and approval of the Client or his designee, must have the review and approval of the Client or his designee prior to implementation unless otherwise permitted by approved procedures.

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4.2 Cognizant Engineer(s) shall review and evaluate the Nonconformance Report, decide on the suitability of the recommended disposition, and make appropriate entries on the report. The report shall then be returned to the Quality Assurance Site Supervisor or his designee.

4.3 Upon receipt of the reviewed and evaluated Nonconformance Report, the Quality Assurance Site Supervisor or his designee shall log-in results of the review and distribute copies of the report as necessary in accordance with approved procedures.

4.4 The Quality Assurance Site Supervisor or his designee shall maintain on file, copies of all open Nonconformance Reports generated in accordance with the requirements of this Section.


5.0 DEFICIENCY NOTICES

5.1 Deficiencies in the quality of items and services detected at the construction site which can be corrected by reworking or by standard repair procedures (approved by the Client or his designee) during the normal course of construction shall be documented on a Deficiency Notice. Copies of all Deficiency Notices shall be transmitted to the Quality Control Site Supervisor or his designee who will initiate Nonconformance Reports based on information given in the Deficiency Notices when he determines that this action is necessary. In this case, the Deficiency Notice becomes a part of the Nonconformance Report and only the Nonconformance Report is required to be resolved.

5.2 Items discovered to be out-of-tolerance or not to specification at routine checkpoints of an inspection process shall not be considered as a nonconformance, provided:

- a) The condition is corrected prior to acceptance of the work.
- b) The work does not proceed beyond the checkpoint until the correction is made.
- c) The out-of-tolerance condition does not reflect on work previously accepted.
- d) No violation of procedure or Code is evident.

Damage which would affect the integrity of an item shall be classified as a nonconformance and processed accordingly.

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5.3 The processing of Deficiency Notices shall be detailed in approved Site Quality Control procedures.

6.0 TREND ANALYSIS OF NONCONFORMANCE REPORTS AND DEFICIENCY NOTICES

6.1 Ebasco's Corporate Trending

Copies of Nonconformance Reports from the sources mentioned above shall be submitted to the Quality Assurance Engineering Supervisor of Auditing. The Quality Assurance Engineering Supervisor of Auditing subsequently receives the Nonconformance Report and makes an analysis of the available quality assurance data with respect to quality trends. The trend analysis and distribution of subsequent reports shall be made in accordance with the requirements of Quality Assurance Procedure QA-D.3.

6.2 Client's Trending

Copies of Nonconformance Reports (NCR's) and Deficiency Notices (DN's) from the sources mentioned above shall be transmitted to the Client's Quality Systems/Administration (QS/A). The Client's QS/A is responsible for the South Texas Project Trend Program activity in accordance with their procedure(s).

7.0 RECORDS

Nonconformance Reports shall be maintained in accordance with Section QA-I-6 of this Manual and/or approved Site Quality Assurance Instructions.

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APPROVAL <i>[Signature]</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION 3
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1.0 SCOPE

This Section establishes the requirements for the identification, analysis, and implementation of corrective action for safety-related items and services. The Section applies to activities performed at the construction site.

2.0 GENERAL

2.1 Corrective action shall be required for identified and documented nonconformance(s) associated with safety-related items and services.

2.2 The need for corrective action may be identified from the following sources:

- a) Inspection activities performed by Site Quality Control.
- b) Site Quality Records document reviews.
- c) Quality Assurance audits performed by the Quality Assurance organization in accordance with Section QA-III-9 of this Manual.
- d) Audits of Ebasco performed by the Client or his designee or regulatory bodies.
- e) Nonconformances detected at the construction site as described in Section QA-III-6 of this Manual.
- f) Audits of the Quality Assurance and Materials Applications organizations performed by the Management Audit Committee.
- g) Surveillances performed by Site Quality Assurance.

2.3 Determination and review of corrective action items shall be made as early as possible in order to preclude the possible repetition of deficiencies.

2.4 During the review of all corrective action items, consideration shall be given to the training of personnel if it is determined that this was a cause of the deficiency.

2.5 Dissemination of corrective action information to responsible individuals shall be performed in a minimum length of time.

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2.6 At the discretion of the Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization, for corrective action items identified per Paragraph 3.2 of this Section, a corrective action document may be issued. This document shall be used when deficiencies detected are not isolated cases and when they are of sufficient magnitude to warrant a documented supervisory review in accordance with approved Quality Assurance procedures or instructions. This document goes beyond the standard audit action response required by audit reports. |R6

2.7 For programmatic deficiencies detected by Site Quality Assurance, the maximum length of time for corrective action response shall be 20 working days from the receipt of notice of deficiency or nonconformance. The maximum implementation time shall be 20 working days from the acceptance of corrective action response, unless otherwise approved by the Chief Quality Assurance Engineer or his designee from the Quality Assurance Engineering Department. |

2.8 It shall be the responsibility of the Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization to assure that all required corrective action is implemented in a timely manner. |R6

2.9 A preliminary assessment of the severity of deficiencies and nonconformances detected shall be made in accordance with Company Procedure N-23 or approved site procedures. The final responsibility for evaluation of all nonconformances for possible reportability rests with the Client or his designee. Reporting of nonconformances in accordance with 10CFR50.55e and its subsequent evaluation will be the responsibility of the Client or his designee. |R6

3.0 DETERMINATION AND IMPLEMENTATION METHODS

3.1 Nonconformance Reports Generated at the Construction Site

3.1.1 Site Quality Control shall perform direct inspection of activities at the construction site as required by Section QA-III-11 of this Manual.

3.1.2 Nonconformances noted during these inspection activities shall be documented on a Nonconformance Report in accordance with Section QA-III-6 of this Manual. Site Quality Control shall verify that the corrective action which has been stipulated on the completed form is implemented. Site Quality Control shall maintain a log of all required corrective action and shall review this periodically to assure the resolution of deficiencies and implementation of required corrective action.

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3.2 Site Quality Assurance Audits

Site Quality Assurance shall perform audits of activities performed at the construction site as required by Section QA-III-9 of this Manual. Site Quality Assurance shall also perform follow-up action as described in Section QA-III-9 to assure that corrective action, if required, has been accomplished. If disagreement about the type or effectiveness of corrective action exists, the problem shall be reviewed by successively higher levels of management until satisfactory resolution is obtained.

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3.3 Client or His Designee, or Regulatory Agency Audits

Audits of construction site activities may be performed by the client or his designee and/or appropriate regulatory agencies. If corrective action is required as a result of one of these audits, the Quality Assurance Site Supervisor or his designee from the Quality Assurance organization shall be responsible for obtaining a response from the cognizant individual(s) for submittal to the auditing body.


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4.0 FINAL VERIFICATION OF CORRECTIVE ACTION IMPLEMENTATION

In addition to his other duties, overall responsibility for verification of the implementation of required corrective action rests with the Quality Assurance Site Supervisor or his designee from the Quality Assurance organization. He shall be responsible for performing this verification for all items indicated in Paragraph 3.0 above, and shall assure that the corrective action is implemented and in a timely manner. In the event that there is a disagreement between those individuals who detect a deficiency and those responsible for the function found to be deficient, the Quality Assurance Site Supervisor shall contact successively higher levels of management as necessary until resolution is obtained.

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5.0 DETERMINATION AND ANALYSIS OF QUALITY TRENDS

5.1 Ebasco's Corporate Trending

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In order to prevent the recurrence of quality problems, Ebasco has developed a method for the determination and analysis of quality trends. Copies of audit reports and Nonconformance Reports (or other appropriate documentation) mentioned above shall be submitted to the Quality Assurance Engineering Supervisor of Auditing. The Quality Assurance Engineering Supervisor of Auditing subsequently receives all reports and makes an analysis of the available Quality Assurance data with respect to quality trends. The trend analysis and distribution of subsequent reports shall be made in accordance with Quality Assurance Procedure QA-D.3.


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5.2 Client's Trending

Copies of Nonconformance Reports (NCR's), Quality Finding Reports (QFR's), and Management Corrective Action Requests (MCAR's) shall be transmitted by the Site Quality Assurance organization to the Client's Quality Systems/Administration (QS/A). The Client's QS/A is responsible for the South Texas Project Trend Program activity in accordance with their procedure(s).

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84

1.0 SCOPE

This Section of the Quality Assurance Manual establishes the requirements for the control of special processes at the construction site. Included herein are provisions for the establishment of critical process parameters, qualification of the processes, and training and qualification of personnel who perform the functions covered by this Section.

2.0 RESPONSIBILITIES

2.1 The Quality Assurance organization shall be responsible for the following:


- 2.1.1 Developing and implementing Site Quality Control procedures and for qualifying personnel to perform inspection of special processes.
- 2.1.2 Providing technical assistance for procedure review and development as required.
- 2.1.3 Qualifying personnel performing nondestructive examination.
- 2.1.4 Performance of audits in accordance with Section QA-III-9 of this Manual to assure conformance to the requirements of this Section.

2.2 The Materials Applications organization shall be responsible for the following:

- a) Development and qualification of welding procedures.
- b) Providing technical assistance for procedure review and development as required by Site Quality Assurance and Site Quality Control.
- c) Qualification of welders and welding operators.
- d) Development of heat treating procedures.

2.3 The Construction organization shall be responsible for the following:

- 2.3.1 Implementing welding and heat treating procedures.

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2.3.2 Developing and implementing procedures for other activities classified as special processes (eg, cadwelding, chemical cleaning, flushing) and for qualifying personnel to perform those functions.

2.4 The Ebasco Site NDE Laboratory, an extension of the Materials Engineering Laboratory, is responsible for developing and implementing nondestructive examination procedures.

3.0 METHODS FOR CONTROL OF SPECIAL PROCESSES


3.1 Site Special Process Procedures

3.1.1 Nondestructive examination procedures used at the construction site shall be developed by the Site NDE Laboratory and shall be reviewed and accepted by the Quality Assurance Site Supervisor or his designee, to assure compliance to the requirements of all applicable codes and standards, as a minimum. Conformance to these procedures and qualification requirements shall be verified through audits and surveillances performed by Site Quality Assurance.

3.1.2 All welding procedures used at the construction site shall be prepared by the New York Materials Applications organization. The weld procedures test material shall be prepared either at the home office or the construction site according to instructions for qualification provided by the New York Materials Applications organization.

3.1.3 Construction procedures for site implementation of welding and heat treating requirements shall be developed by the Site Welding Superintendent or his designee.

3.1.4 All welders installing safety-related components shall be qualified according to appropriate codes and standards. Welder qualification shall be performed by the Site Welding Superintendent or his designee. Verification of conformance to procedure and operator qualification requirements shall be performed in accordance with site procedures by Site Welding Superintendent (or his designee) surveillance, Site Quality Control inspection, and/or Site Quality Assurance audit and surveillance functions.


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3.1.5 All Construction procedures for site implementation of requirements for welding, heat treating, and other special processes shall be reviewed and accepted by the Quality Assurance Site Supervisor or his designee. All comments resulting from such reviews shall be resolved prior to procedure implementation.

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4.0 RECORDS

Records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual.

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1.0 SCOPE

Quality-related activities at the construction site and Ebasco home office are independently audited by the Quality Assurance organization. This Section establishes the requirements and guidelines for the preparation, performance, reporting, and follow-up of quality assurance audits as performed by Site Quality Assurance, home office Quality Assurance Engineering, and the Ebasco Management Audit Committee.

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2.0 RESPONSIBILITIES

2.1 The Ebasco Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall assign qualified Site Quality Assurance personnel to perform audits of construction site activities.

2.2 The Quality Assurance Engineering Supervisor of Auditing shall assign qualified Quality Assurance personnel to perform home office audits of Ebasco site activities.

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2.3 A committee chaired by the Quality Assurance Consulting Engineer shall conduct audits of the Ebasco Materials Applications and Quality Assurance organizations at the home office.

3.0 GENERAL REQUIREMENTS FOR AUDITS PERFORMED BY THE QUALITY ASSURANCE ORGANIZATION

3.1 Audit Personnel

3.1.1 Audit personnel shall be independent of direct responsibility for performance of the activity being audited.


3.1.2 Audit personnel shall be qualified to perform quality assurance audits based on experience and training as described in Quality Assurance Procedure QA-G.3.

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3.2 Training and Orientation

3.2.1 Audit personnel shall have experience and training or orientation to assure their competence for performing audits. The competence of personnel to perform audits shall be developed by one or more of the following methods:

- a) Providing personnel with working knowledge of appropriate regulatory documents, practices, codes, and standards.

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- b) Training or orientation in general and specialized methods of planning and performing audits.
- c) On-the-job training under direct supervision of a Lead Auditor.

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3.2.2 The requirements for training and orientation of auditors shall be in accordance with Quality Assurance procedures.

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3.3 Proficiency of Auditors

3.3.1 Auditors performing audits shall maintain their proficiency through one or more of the following methods:

- a) Regular, active participation in the audit process.
- b) Review and study of codes, standards, and procedures related to Quality Assurance Programs and program auditing.
- c) Participation in orientation or training programs.

3.3.2 The Chief Quality Assurance Engineer or his designee shall evaluate auditors in accordance with Quality Assurance Procedure QA-G.3 to assure that the auditors are maintaining their proficiency.

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3.4 Scheduling of Audits


3.4.1 Audits shall be initiated as early in the life of the project or activity as practicable in order to assure timely implementation of the applicable Quality Assurance Program requirements, and to assure effective quality assurance during construction activities.

3.4.2 Audits shall be regularly scheduled on the basis of the status and safety importance of the activities to assure conformance to the Ebasco Nuclear Quality Assurance Program. Applicable elements of the Quality Assurance Program shall be audited at least annually or once within the life of the activity, whichever is shorter.

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3.4.3 Supplemental audits shall be conducted when:

- a) Significant changes in the Quality Assurance Program are made.

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- b) There is evidence of significant noncompliance to the Quality Assurance Program.
- c) An assessment of the effectiveness of the Quality Assurance Program is requested.
- d) It is necessary to verify implementation of corrective action.
- e) It is considered necessary by the Quality Program Site Manager.

3.5 Planning of Audits

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Preparation for audits shall include the development of a written audit plan of standard format which shall include or identify the following:

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- a) Audit scope.
- b) Requirements and applicable documents.
- c) Activities to be audited.
- d) Organization to be audited.
- e) Tentative audit schedule.
- f) Approved written procedures and/or checklists which assure that the organization will be audited to the extent necessary. These procedures and/or checklists shall provide for verifying corrective action of deficiencies identified in previous audits. Audit procedures and/or checklists may be developed as part of a general audit program and need not be unique for each audit.

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3.6 The Audit Team

3.6.1 The audit shall be performed by one or more individuals. A qualified Lead Auditor shall be established as the Team Leader for audits when teams are comprised of two or more auditors. The Team Leader shall be responsible for:

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- a) Orientation of the team.

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- b) Assuring communication between the team and the organization being audited.
- c) Coordinating the preparation and issuance of audit reports.
- d) Establishing the pace of the audit.

3.6.2 The Team Leader shall assure that the team is prepared prior to performing the audit. Information such as appropriate procedures, manuals and prior audit reports shall be made available to the team members. Each auditor shall be provided with any appropriate audit plans, procedures, or checklists necessary to performing the audit.

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3.7 Audit Notification

The organization to be audited shall be notified of a scheduled audit and the scope of the audit. Such notification shall be given a reasonable time before the audit is to be performed.

3.8 Audit Performance

3.8.1 Checklists and/or written procedures prepared during audit planning shall be used to conduct the audit.

3.8.2 An informal pre-audit conference shall be arranged at the audit site in order to confirm audit scope and discuss the audit plan.

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3.8.3 A post-audit conference shall be conducted to:


- a) Inform those audited of the audit results.
- b) Assure understanding of audit results.

3.9 Reporting of Audit Results

3.9.1 An audit report shall be compiled and shall be signed by the audit Team Leader. The audit report shall provide:

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- a) Description of the audit scope.
- b) Identification of the auditors.

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- c) Persons contacted.
- d) A summary of the audit results, including an evaluation statement regarding the effectiveness of the Quality Assurance Program elements which were audited.
- e) Detailed description of Quality Assurance Program deficiencies and causes thereof where possible. | R6
- f) Recommendations for correcting program deficiencies or improving the Quality Assurance Program, if possible. |

3.9.2 The audit report shall be issued in a timely manner as defined in the applicable Quality Assurance procedure. | R6

3.10 Audit Follow-Up


3.10.1 A response to the audit report shall be prepared by the responsible individual and submitted within the required time period as established in the audit report. The response shall state the corrective action taken or to be taken, and the date of completion. The audit Team Leader or another qualified Lead Auditor shall review the response for acceptance. As necessary, subsequent responses may be required to verify completion of corrective action. | R6

3.10.2 Follow-up action shall be performed by a qualified Lead Auditor to: | R6

- a) Assure that the written reply to the audit report is received.
- b) Assure that corrective action is identified and scheduled for each program deficiency. | R6
- c) Confirm that deficiencies are resolved and corrective action, when necessary, is accomplished. |

3.10.3 Follow-up action may be accomplished through written communication, re-audit, or other appropriate means.

3.10.4 Follow-up action taken shall be documented on the audit report. | R6

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3.11 Trend Analysis of Audit Reports

3.11.1 The Quality Assurance Engineering Supervisor of Auditing shall make an analysis of the available quality data (such as the audit reports mentioned above) with respect to quality trends, and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Procedure QA-D.3.


4.0 SPECIFIC AUDIT REQUIREMENTS

4.1 Management Audits

4.1.1 A committee chaired by the Quality Assurance Consulting Engineer is responsible for conducting audits of Ebasco Materials Applications and Quality Assurance functions to determine compliance with the Ebasco Quality Assurance Program requirements. This committee is made up of personnel not in the Quality Assurance organization and who are qualified in accordance with criteria denoted in Ebasco Nuclear Procedure N-24. These audits will also include evaluating quality assurance policy effectiveness and assuring that appropriate implementing procedures are available and are being complied with.

4.1.2 This auditing shall be accomplished on an annual basis in accordance with the requirements of Ebasco Nuclear Procedure N-24. The management audit committee shall be comprised of at least two qualified representatives from either the Construction or Engineering Departments, and the QA Consulting Engineer. Each committee representative shall be appointed by the respective Vice President; however, no committee member can be directly engaged in any policy-making or administrative phase of the Ebasco Quality Assurance Program, but shall be knowledgeable in the general area of quality assurance. The committee shall be directly responsible to the Vice President Materials Engineering and Quality Assurance.

4.1.3 The committee shall prepare an audit report for each audit performed. This report shall be submitted directly to the Vice President Materials Engineering and Quality Assurance, with copies to other appropriate parties.

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84

4.1.4 The Vice President Materials Engineering and Quality Assurance shall be responsible for informing the concerned Ebasco management of the results of the audits performed by the committee. He shall also be responsible for initiating the implementation of any changes or corrective action deemed necessary to improve the effectiveness of the Ebasco Nuclear Quality Assurance Program.

4.2 Audits by the Quality Assurance Organization

4.2.1 Site Quality Assurance shall audit the various quality-related activities performed by Ebasco organizations on the construction site in accordance with the requirements of this Section and applicable Site Quality Assurance procedures and instructions.

4.2.2 Training and qualification records for Site Quality Control personnel shall be audited in accordance with Section QA-I-3, Paragraph 8.0, of this Manual.


4.2.3 Quality Assurance auditors shall have the authority to reject items, services, or work for nonconformance to the specification, drawing, or quality control requirements.

4.2.4 Home office Quality Assurance Engineering will conduct periodic audits and evaluations of the construction site in accordance with this Manual and Quality Assurance Procedure QA-D.5.2.

5.0 AUDIT RECORDS

5.1 Records generated during audit preparation, performance, or follow-up shall be retained for all audits in accordance with the applicable requirements of Section QA-I-6 of this Manual and/or approved Quality Assurance procedures. Such records shall include:

- a) Audit plans and checklists.
- b) Audit reports.
- c) Written replies to audit reports.
- d) Status of required corrective action.
- e) Other documents which support audit findings and corrective action as appropriate.

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5.2 Records of training and experience of auditors shall be maintained for all personnel who are performing audits or who have previously performed audits. These shall be retained for the same period of time as required for the audit reports with which the auditors are associated. Maintenance and retention shall be in accordance with Quality Assurance Procedure QA-G.3.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2	SECTION QA-III-10
APPROVAL <i>[Signature]</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION 2
		IDENTIFICATION AND CONTROL OF ITEMS	DATE 3/26/84

1.0 SCOPE

1.1 This Section establishes the requirements for the identification and control of safety-related items at the construction site.

1.2 The activities described herein shall be performed in accordance with written instructions, procedures, and/or drawings that have been developed and accepted in accordance with the requirements of Section QA-III-1 of this Manual.

2.0 RESPONSIBILITIES

2.1 Site Quality Control shall be responsible to perform the following functions in accordance with written procedures:


- a) Assure that items received from the Client or his designee at the construction site are properly identified and are accompanied by appropriate documentation traceable to the items. | R6
- b) Assure that all items shall be physically identified in accordance with Paragraph 3.0 below and appropriate written procedures.
- c) Assure that identification of items shall be transferred to inspection and test records and as-built documents in a manner sufficient to provide the required traceability.
- d) Assure that items are handled and stored in accordance with the requirements of Section QA-III-14 of this Manual so as to maintain identification.

2.2 The Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall be responsible for the performance of reviews and audits in accordance with Section QA-III-9 of this Manual to assure compliance to the requirements of this Section. | R6

3.0 GENERAL

3.1 Documented Quality Control procedures require that items shall be physically identified by any of the following means:

- a) Stenciled or etched markings
- b) Strip markings

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 2 DATE 3/26/84

- c) Imprinted tape
- d) Tagging
- e) Stamping
- f) Color-coding
- g) Records traceable to the items
- h) Procedural control
- i) Other appropriate means in accordance with approved Site Quality Control procedures

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3.2 When it is impractical to physically identify individual small items, these may be identified as to heat numbers, batch, lot, or specification by applying markings to bags, bins, tanks, or other suitable containers.

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3.3 Identification of items shall provide the required degree of traceability to pertinent documents.

3.4 All markings shall be clear, unambiguous, and indelible and shall not affect the function of the item when applied.

3.5 When an item is subdivided, markings shall be transferred to each part of the item.

3.6 Markings shall not be obliterated or hidden by surface treatment or coatings unless other means of identification is substituted.

4.0 RECORDS

Records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual.

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APPROVAL <i>R. Arago</i> CHIEF QUALITY ASSURANCE ENGINEER	INSPECTION		REVISION 4
			DATE 3/26/84

1.0 SCOPE

This Section establishes the requirements for the inspection of safety-related items and services at the construction site as necessary to assure compliance with documented instructions, procedures, specifications, drawings, codes, and regulatory requirements.

2.0 RESPONSIBILITIES

2.1 Site Quality Control shall be responsible for the following:

- a) Development of written procedures for the inspection of safety-related items and services which list the required inspection activities when existing inspection documents such as standard specifications and drawings do not provide an adequate basis for inspection.
- b) Submittal of inspection procedures to Ebasco Site Quality Assurance for review and acceptance in accordance with Section QA-III-1 of this Manual.
- c) Preparation of reports for all inspections made.
- d) Approval processing of inspection procedures and revisions thereto.

2.2 Site Quality Control shall be responsible for performing inspection activities in accordance with appropriate inspection documents.

2.3 Qualification of inspection personnel shall be in accordance with applicable Quality Assurance procedures and Paragraph 4.0 herein.

2.4 The Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall be responsible for the performance of reviews and audits in accordance with Section QA-III-9 of this Manual to the extent necessary to assure compliance with the requirements of this Section.

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3.0 GENERAL

3.1 Inspection documents shall be prepared based upon the quality requirements contained in specifications, quality control documents and procedures, and applicable codes and standards.

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APPROVAL <i>B. J. Gray</i> CHIEF QUALITY ASSURANCE ENGINEER	INSPECTION		REVISION 4 DATE 3/26/84

3.2 If mandatory inspection hold points are required, the specific hold points shall be indicated on the inspection documents.

3.3 Inspection documents shall specify or reference as a minimum the activities to be performed, acceptance criteria, by whom activities are performed, and the sequence in which the activities are to be performed.

3.4 Where mandatory inspection hold points are indicated on inspection documents or procedures, work may continue beyond a hold point only with the written approval of the Quality Control Site Supervisor or his qualified designee.

3.5 Inspection reports shall indicate the acceptability status of the items or services inspected with respect to meeting the applicable quality requirements.

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3.6 When inspections are to be performed by use of a sampling program (ie, to determine the acceptability of a group of like-items based upon the results of an inspection of a representative number of items from the group), the sample size shall be identified on the inspection documents. Justification for this sampling shall be based upon recognized standard construction practices and successful past experience, as well as the complexity and function of the activity, item, or service to be inspected.

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4.0 TRAINING AND QUALIFICATION OF INSPECTION PERSONNEL

4.1 Inspection personnel shall have experience and training to assure their competence for performing inspection. The competence of personnel to perform inspections shall be developed by one or more of the following methods:

- a) Providing personnel with working knowledge of appropriate regulatory documents, practices, codes, and standards.
- b) Training or orientation in general and specialized methods of planning and performing inspections.
- c) On-the-job training under direct supervision of an experienced, qualified inspector.

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4.2 The requirements for training and qualification of inspectors shall be in accordance with applicable Quality Assurance procedures, and qualification of inspectors shall be based upon consideration of the following:

- a) Records of education and experience.
- b) Test results, where applicable.
- c) Results of capability determination.

4.3 Site Quality Control shall be responsible for scheduling and coordinating training for quality control personnel in advance of implementation of the applicable inspection documents. This training shall be conducted in sufficient detail and with sufficient frequency to assure that the personnel responsible for the inspection fully understand the requirements contained in the applicable inspection documents.

4.4 Inspectors performing inspections shall maintain their proficiency through one or more of the following methods:

- a) Regular, active participation in the inspection process.
- b) Review and study of codes, standards, and procedures related to Quality Assurance Programs and program inspection.

4.5 The Chief Quality Assurance Engineer or his designee shall periodically evaluate inspectors in accordance with applicable Quality Assurance procedures to assure that the inspectors are maintaining their proficiency.


5.0 RECORDS

5.1 All inspection documents shall be maintained in accordance with Section QA-I-6 of this Manual.

5.2 Records of training, experience, and certification of inspectors shall be maintained for all personnel who are performing inspection or who have previously performed inspections. These records shall be retained for the same period of time as required for the inspection reports with which the inspectors are associated.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2	SECTION QA-III-12
APPROVAL  CHIEF QUALITY ASSURANCE ENGINEER	TEST CONTROL		REVISION 3
			DATE 3/26/84

1.0 SCOPE

1.1 This Section describes the system employed at the construction site which assures that tests required to demonstrate that items will perform satisfactorily in service are identified and documented. The requirements of this Section apply to all phases of the testing program at the construction site including but not limited to: functional testing, proof testing, acceptance testing, and operational testing.

1.2 These tests shall be performed in accordance with written test procedures which include or reference the requirements and acceptance limits contained in applicable design documents.

2.0 RESPONSIBILITIES

2.1 Site Quality Control procedures shall provide for the following:

- a) Assuring that all prerequisites for the given test have been met.
- b) Use of trained personnel to witness tests.
- c) Identification of test equipment and the item to be tested.
- d) Checking the condition of test equipment and the item to be tested.
- e) Use of devices calibrated in accordance with Section QA-III-13 of this Manual for the performance of tests.
- f) Performance of tests under proper environmental conditions; eg, cleanliness.
- g) Documentation of test results.
- h) Acceptance criteria for test requirements.

2.2 Site Quality Assurance shall review and comment on the written procedures for tests covered by this Section. All comments shall be resolved prior to implementation of the procedures. These test procedures shall be reviewed in accordance with Site Quality Assurance procedures and/or instructions for the inclusion of:

- a) Provisions for assuring that all test prerequisites have been met.
- b) Identification of items to be tested.

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EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2	SECTION QA-III-12
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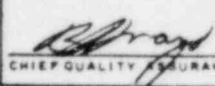
- c) Identification of calibrated devices or equipment to be used during testing.
- d) Provisions for checking condition of test equipment and item to be tested. | R6
- e) Proper environmental conditions under which test is to be performed.
- f) Test methods.
- g) Operations to be performed.
- h) Inclusion of, or reference to, acceptance criteria. | R6
- i) Data to be recorded.
- j) Requirements for qualified and/or certified personnel.

2.3 Test reports shall be reviewed and signed-off by Ebasco Quality Control in accordance with procedure requirements to assure that test requirements have been satisfied. | R6

2.4 The Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall be responsible for the performance of reviews and audits in accordance with Section QA-III-9 of this Manual to the extent necessary to assure compliance to the requirements of this Section. | R6

3.0 RECORDS

All records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual.

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 CONTROL OF MEASURING AND TESTING EQUIPMENT	SECTION QA-III-13
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 3 DATE 3/26/84

1.0 SCOPE

1.1 This Section describes the requirements for control, calibration, adjustment, and maintenance of measuring and testing devices used at the construction site for performing tests and inspections of safety-related items. These devices shall be calibrated and adjusted at specified, predetermined intervals using equipment having known valid relationships to nationally recognized standards.

1.2 The activities described herein shall be performed in accordance with written instructions, procedures, and/or drawings that have been developed and accepted in accordance with the requirements of Section QA-III-1 of this Manual.

2.0 RESPONSIBILITIES

Site Quality Control shall be responsible for performance of the following:


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2.1 Establish a list which includes the measuring and testing devices to be calibrated and the frequency of calibration of these devices. The method and interval of calibration shall be based on the type of device, stability characteristics, required accuracy, and other conditions affecting measurement control.

2.2 Assure that the measuring and testing devices used are of the proper range, type, and accuracy to verify conformance to established requirements.

2.3 Maintain a master calibration file for each measuring and testing device which includes at least the following information:

- a) Name of device.
- b) Device serial and/or identification number.
- c) Frequency of calibration.
- d) Date of last calibration.
- e) Name of party performing last calibration.
- f) Due date for next calibration.

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g) Condition of device at time of calibration and results of calibration. | R6

h) Standard used for calibration.

i) Applicable calibration procedure.

2.4 Assure that all measuring and testing devices are marked with the identification number and when possible with calibration due dates. When this marking is not possible, alternative methods of tracing the device to its calibration due date (such as color-coding) shall be employed. | R6

2.5 Assure that all measuring and testing devices are calibrated in accordance with the requirements of this Section and that the required documentation is provided.

2.6 Develop and maintain a system for issuance, collection, and return of all measuring and testing devices. This system shall provide for the identification of personnel withdrawing devices, methods for issuing devices, and methods for the collection and/or return of devices at prescribed calibration times or as otherwise required.


3.0 GENERAL

3.1 The standard of calibration shall be traceable to national standards. If no national standards exist, the basis for calibration shall be documented and traceable to the equipment manufacturer's recommended standards. | R6

3.2 Measuring and test equipment (M&TE) shall be calibrated against working standards having tolerances not greater than one fourth (1/4) the tolerance of the M&TE. Tolerances greater than one fourth (1/4) shall be acceptable when limited by the state of the art. Reference standards shall be calibrated against higher-level standards of closer tolerance.

For projects with Preliminary Safety Analysis Reports docketed on or before October 19, 1977, M&TE shall be calibrated against working standards having tolerances not greater than the tolerance of the M&TE. Reference standards shall be calibrated against higher-level standards of closer tolerance.

3.3 Methods shall be employed to assure proper handling, storage, and care of the M&TE in order to maintain its required accuracy.

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3.4 Any M&TE found to be out of calibration shall be recalibrated. When M&TE is found to be out of calibration, damaged, lost, or stolen, an evaluation shall be made to ascertain the validity of previous inspection or test results and the acceptability of components inspected and/or tested since the last calibration check. When it is necessary to assure the acceptability of suspect items, the original required inspections and/or tests shall be repeated using properly calibrated equipment. Suspect items on which a questionable device was used shall be listed on the Nonconformance Report (NCR) or Deficiency Notice (DN), as applicable. |R6


3.5 If any of the M&TE is consistently found to be out of calibration, it shall be repaired or replaced.

3.6 Inspection and test reports shall include identification of M&TE used to perform the inspections and/or tests.

3.7 The Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall be responsible for the performance of reviews and audits in accordance with Section QA-III-9 of this Manual to the extent necessary to assure compliance with the requirements of this Section. |R6

4.0 RECORDS

Records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual.

EBASCO SERVICES INCORPORATED		NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL HOUSTON LIGHTING AND POWER COMPANY SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNITS 1 & 2 CONTROL OF RECEIVING, HANDLING, AND STORAGE	SECTION QA-III-14
APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 4 DATE 3/26/84

1.0 SCOPE

1.1 This Section describes the methods employed during receiving, handling, storage, and installation to assure that all safety-related items received by Ebasco at the construction site will be usable when needed. These requirements apply to both items received by Ebasco from the Client or his designee and Ebasco site-fabricated subassemblies which require temporary storage before assembly or installation. They also apply to both on-site and off-site facilities which are used for the storage of items under control of the construction forces.


1.2 The activities described herein shall be performed in accordance with written instructions, procedures, and/or drawings that have been developed and accepted in accordance with the requirements of Section QA-III-1 of this Manual.

1.3 The storage of safety-related items maintained in facilities under the direct control of the Client or his designee is excluded from the scope of this Manual.

2.0 RESPONSIBILITIES

2.1 The Ebasco Construction organization shall be responsible for the following:

- a) Performance of receiving, handling, storage, maintenance, and cleaning activities in accordance with specifications provided by the Client or his designee and/or code requirements.
- b) Development of methods for special handling (off-loading) in accordance with manufacturer's recommendations and/or specifications provided by the Client or his designee.
- c) Establishing storage areas to meet levels as briefly described below:
 - 1) Level A - Indoor, controlled environment.
 - 2) Level B - Indoor, heated and ventilation controlled.
 - 3) Level C - Indoor or equivalent, ventilation controlled.
 - 4) Level D - Outdoor.

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- d) Development of general storage plans which list types of items and their intended storage locations and levels. Such plans shall be prepared prior to receipt of items from the Client or his designee.

2.2 Ebasco Site Quality Control shall be responsible for the following:

- a) Qualification of personnel performing inspection functions applicable to receiving, handling, and storage.
- b) Assigning qualified quality control personnel for performance of inspection and/or surveillance of receiving, handling, storage, maintenance, and cleaning activities.
- c) Performing and documenting inspection and/or surveillance activities in accordance with approved checklists to verify that receiving, handling, storage, maintenance, and cleaning activities, as described in Paragraph 2.1 above, are performed in accordance with project requirements.
- d) Establishing and implementing methods for rejection of nonconforming items which provide adequate means of identifying the item as nonconforming and physically segregating the item where practical. When segregation is not practical, a status type indicator shall be used. Application and removal of status type indicators shall be by Quality Control personnel only.

2.3 Ebasco Site Quality Assurance shall be responsible for the performance of audits in accordance with Section QA-III-9 of this Manual to the extent necessary to assure compliance to the requirements of this Section.

2.4 The Client or his designee is responsible for procurement and initial receiving inspection of all safety-related items. However, if requested in writing by the Client or his designee to perform initial receiving inspection of safety-related items upon their arrival at the job site, Ebasco will conduct a complete program that covers the full parameters of this Section. Otherwise, Ebasco shall conduct a receiving inspection program as is applicable and in accordance with approved site procedures.

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3.0 RECEIVING INSPECTION

3.1 Safety-related items utilized for fabrication, erection, installation, or modification shall be subjected to receiving inspection to assure conformance to the requirements of the applicable drawings, specifications, and other documents as required. Where source inspection is not performed, receiving inspection at site for acceptability will be performed.

3.2 Inspection Requirements

Receiving inspection procedures shall be prepared by the Quality Control Site Supervisor or his designee in accordance with the requirements of this Manual. These procedures shall provide instructions and checklists for performing receiving inspection and shall include at least the following activities:

- a) Documentation review to assure that the documentation package has been received and that a signed "Release for Shipment" form accompanies the items received, when applicable.
- b) Visual examination.
- c) Marking and tagging for traceability.
- d) Testing when specified.
- e) Preparation for storage.

4.0 HANDLING

4.1 Handling practices applied to safety-related items shall assure minimum possibility for damage or loss of environmental protection.

4.2 Inspection Requirements

Site Quality Control Procedures shall provide for at least the following:

- a) Review of handling requirements for safety-related items.
- b) Performance of appropriate inspections to assure that handling operations have not jeopardized item integrity.

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APPROVAL <i>[Signature]</i> CHIEF QUALITY ASSURANCE ENGINEER			REVISION 4
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5.0 STORAGE AND IN-PLACE PROTECTION

5.1 All safety-related items shall be stored in locations and storage levels as outlined below except for those items released from storage and placed in their permanent locations which shall be cared for, maintained, and inspected in accordance with design specifications and the applicable approved procedures. In-place protection in permanent location is permitted for large items such as equipment, provided that the permanent location is ready for the item installation. If the permanent location does not afford the required level of protection, additional protection shall be provided to prevent degradation of the item. For in-place protection purposes, a permanent location shall be considered to be within the room and/or immediate vicinity in which the item is to be permanently installed.

5.2 Inspection Requirements

Site Quality Control procedures shall provide for at least the following:

a) Monitoring of the storage levels listed below:

- 1) Level A - Indoor, controlled environment.
- 2) Level B - Indoor, heated and ventilation controlled.
- 3) Level C - Indoor or equivalent, ventilation controlled.
- 4) Level D - Outdoor.

b) Monitoring maintenance of storage areas to control such items as the following:

- 1) Physical condition of storage area.
- 2) Access to storage area.
- 3) Fire protection.
- 4) Prohibited materials.


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- c) Inspection of stored items and items protected in-place to assure their integrity. |R6
- d) Verification of general storage plans which list types of items and their intended storage locations and levels. |R6
- e) Monitoring of storage areas to maintain proper segregation of materials. Items shall retain an appropriate identification for retrievability and inventory control, as applicable to the nature and use of the material. |R6
- f) Monitoring of provisions for preservation of items, as required by special conditions. |R6
- g) Verification that the withdrawal of any component, assembly, system, or materials from the Client's or his designee's warehouse or storage areas shall be by the Requisition for Stored Items completed by the responsible supervisor or his designated representative. The request shall identify the material and applicable references to a drawing or specification. |R6

5.3 The Client or his designee shall be responsible for the establishment of storage levels, maintenance, and any other applicable handling and storage requirements. The Ebasco Construction organization is responsible for developing and implementing procedures addressing these requirements. |R6

6.0 RECORDS

Records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual. |R6

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APPROVAL	 CHIEF QUALITY ASSURANCE ENGINEER		REVISION 2 DATE 3/26/84
		INSPECTION, TEST, AND OPERATING STATUS	

1.0 SCOPE

1.1 This Section establishes requirements for identifying and documenting the status of inspections and tests performed on safety-related items at the construction site and the status of the readiness of these items for initial operation.

1.2 The activities described herein shall be performed in accordance with written instructions, procedures, and/or drawings that have been developed and accepted in accordance with the requirements of Section QA-III-1 of this Manual. Procedures and instructions shall include identification and authority of the individuals or groups responsible for application and removal of status indicators.

2.0 RESPONSIBILITIES

Site Quality Control shall be responsible for the following:

2.1 Develop and implement a system for maintaining the status of safety-related items through the use of status indicators such as physical location and tags, markings, work travelers, stamps, or inspection records. This system shall provide for the identification and maintenance of the status of inspections and tests performed on these items throughout fabrication, installation, and erection. This system shall provide methods which assure that only items that have passed the required inspections and tests are used, installed, or operated. Where physical tagging is either impractical or insufficient, procedural control or other appropriate means for maintaining item status shall be employed.

2.2 Control and maintain a log of the issuance and removal of status indicators such as tags.

2.3 Develop and implement plans for the witnessing and documenting the results of inspections and tests.


2.4 Provide methods for assuring that all required inspections and tests are performed (checklists, travelers, etc).

2.5 Develop and implement a system for marking and tagging to indicate the initial operating status of safety-related items which are in test, rework, or other initial operating status, so as to prevent inadvertent operation.

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2.6 Develop and implement a system for marking and tagging of all safety-related items during preoperational testing. This system shall provide for maintaining records of status indicators placed on boundaries or within systems turned over to the Client or his designee.

2.7 Maintain a log containing entries of all systems turned over from construction forces for preoperational testing. This log shall be maintained for quality status reference.

3.0 GENERAL

3.1 Quality Control procedures shall require that inspection and test status be maintained by the use of status indicators such as tags, markings, travelers, stamps, inspection records, work sequence plans, or other appropriate means.

3.2 The progress of fabrication, installation, erection, inspection, and test shall be entered on appropriate documents. Provisions shall be made for updating these documents to reflect current conditions.

3.3 Nonconforming safety-related items shall be clearly identified and marked and shall be processed in accordance with Section QA-III-6 of this Manual.

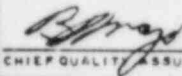
3.4 Records of tests and inspection results shall be prepared and maintained in an orderly and systematic manner.

3.5 The Quality Assurance Site Supervisor or his designee from the Site Quality Assurance organization shall be responsible for the performance of reviews and audits in accordance with Section QA-III-9 of this Manual to the extent necessary to assure compliance to the requirements of this Section.

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4.0 RECORDS

Records pertaining to this Section shall be maintained in accordance with Section QA-I-6 of this Manual.

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This Appendix contains certain terms and their definitions used in this Manual that are important to the uniform understanding of the Manual and its application. Where a term is used to convey a different intent than that related herein, clarification must be provided at the point of application:

ACTIVITIES AFFECTING QUALITY (Quality-related activities) - Activities affecting the quality of safety-related items, including designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, and testing.

AUDIT - A planned and documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of a quality assurance program have been developed, documented, and effectively implemented in accordance with applicable regulatory documents, guidelines, or requirements. An audit does not include surveillance or inspection for the purpose of process control or product acceptance.

AUDITS (INTERNAL) - Audits performed by Ebasco personnel on those Ebasco organizations that are governed by the Ebasco Quality Assurance Program.

CLIENT OR HIS DESIGNEE - "Client" is defined as Houston Lighting and Power Company and "his designee" as Bechtel Energy Corporation.

CONSTRUCTION OPERATION - Activities related to construction of a nuclear power station.

EBASCO HOME OFFICE - Office where project support and related functions are performed at Ebasco, New York.

INSPECTION - A phase of quality control which by means of examination, observation, or measurement determines the conformance of items or services to predetermined quality requirements.


INSTRUCTIONS - Written descriptions of activities to be performed, including job specifications, work instructions, shop construction drawings, job tickets, planning sheets, operating or procedure manuals, test procedures, or other written forms, to assure that the activity is adequately described.

ITEM - Any level of unit assembly, including structure, system, subsystem, component, part, or material.

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NONCONFORMANCE - A deficiency in characteristic, documentation, or procedure which renders the quality of an item or service unacceptable. Items discovered to be out-of-tolerance of specification at routine checkpoints of an inspection process shall not be considered as a nonconformance, provided:

- a) The conditions are corrected prior to acceptance of the work.
- b) The work does not proceed beyond the checkpoint until the correction is made.
- c) The condition does not affect work previously accepted.
- d) No violation of procedure or Code is evident.

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QUALITY ASSURANCE (QA) RECORDS - are those records which furnish documentary evidence of the quality of items and of activities affecting quality. A document is considered a quality assurance record when the document has been completed. QA records may be either the original or a reproduced copy.

QA RECORDS (LIFETIME) - are those records which meet one or more of the following criteria:

- a) Those which would be a significant value in demonstrating capability for proper functioning of safety-related items.
- b) Those which would be of significant value in maintaining, reworking, repairing, replacing, or modifying the item.
- c) Those which would be of significant value in determining the cause of an accident or malfunction of an item.
- d) Those which provide required baseline data for in-service inspection.

QA RECORDS (NONPERMANENT) - are those records which meet all of the following criteria:

- a) Those of no significant value in demonstrating capability for safe operation.
- b) Those of no significant value in maintaining, reworking, repairing, replacing, or modifying the item.

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- c) Those of no significant value in determining the cause of malfunction of an item.
- d) Those which do not provide baseline data for in-service inspection.

QUALITY TREND - A consistent reporting of conformance or nonconformance with applicable criteria attributed to a specific organizational unit.

SAFETY-RELATED ITEM - Any item designated by the Client or his designee, in accordance with the guidelines established by the Licensing Department of the Client or his designee, to be Safety Class 1, 2, 3, Seismic Category I, or electrical Class IE and any other items as designated by the Licensing Department and indicated as safety-related in the PSAR or FSAR.

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SERVICE - Performance of nuclear safety-related activities such as fabrication, inspection, nondestructive examination, installation, and test.

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SPECIAL PROCESS - A special process is a fabrication, testing, or inspection operation whose correct performance is governed by parameters established during qualification testing for the operation, eg, welding and nondestructive testing.

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EXCEPTIONS TO ANSI N45.2.5-1974:

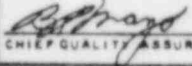
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1. ANSI N45.2.5-1974, Section 4.8, states "Pumped concrete must be sampled from the pump line discharge." In lieu of this statement, in-process strength samples of pumped concrete are taken at the delivery point. Correlation tests of air content, slump, and temperature are performed to verify these plastic properties of the concrete at the placement point in accordance with the following frequency requirements:
 - A. A minimum of two correlation tests are performed for each pumped placement exceeding 200 cu. yds.
 - B. Otherwise, a minimum of two correlation tests per week are performed when any individual pumped placement during a week requires delivery of more than one truckload of concrete.
 - C. During a week when a pumped placement exceeding 200 cu. yds. is made, the correlation tests performed on that placement will satisfy the weekly requirement for performing two correlation tests as specified in Item B above.

When any of the specified limits and tolerances on loss of air content, slump, or temperature are exceeded at the placement point, correlation tests between the delivery point and placement point will be accomplished for each 100 cu. yds. of concrete placed as long as limits and tolerances are exceeded. If two consecutive tests are out of tolerance, corrective action will be implemented to adjust the limits for the concrete entering the pump intake so that no concrete from the subsequent trucks will enter the pump intake as long as the tolerances are exceeded.

"Correlation Testing," "Delivery Point," and "Placement Point" are as defined in ANSI N45.2.5-1978, Section 1.4.

2. Samples and frequency for cadweld testing is in accordance with ACI-359-ASME Section III, Division 2, issued for trial use and comment in 1973, including Addenda 1 through 6 (see Sections 3.8.1.6.3 and 3.8.3.6.3 of the South Texas Project Final Safety Analysis Report).

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EXCEPTIONS TO ANSI N45.2.1-1973:

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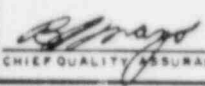
3. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality. This is consistent with Section 2, Paragraphs 2 and 3, of ANSI N45.2-1971 which provides for examination, measurement, or testing to assure quality or indirect control by monitoring of processing methods. However, final cleaning or flushing activities will be performed in accordance with procedures specific to the system.
4. Section 4, Pre-Installation Cleanness. This section states, "Items should not be delivered to the point of installation site sooner than necessary unless the installation location is considered a better storage area." As an alternate to this requirement items may be delivered to the installation site sooner than absolutely necessary when determined to be advantageous for other considerations, for example, reduced handling or easier access, thereby reducing susceptibility to handling damage. In all such cases, equipment stored in place will be protected in accordance with Section 5 of ANSI N45.2.1-1973.
5. Section 3.1.2, Cleanness Classifications - Class B. Ebasco interprets the lighting level of 100 footcandles to be guidance. It is Ebasco's normal practice that the lighting level for determining "metal clean" of accessible surfaces of piping and components is determined by the inspector. Typically he uses a standard two-cell flashlight supplemented by other lighting as he deems necessary.

EXCEPTIONS TO ANSI N45.2.2-1972:

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6. Section 2.7, Classification of Items. The four-level classification system may not be used explicitly. However, the specific requirements for each classification as specified in the standard will be applied to the items suggested in each classification and for similar items.

Classification differing from Section 2.7 will be considered acceptable provided no degradation is assured; for example, electric motors designed for outside service may be stored in Level C area rather than a Level B.

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7. Section 6.2, Storage Areas. Paragraph 6.2.1 requires control and limited access to storage areas. In lieu of and to amplify this paragraph, the following will be applied:

"Access to storage areas for Levels A, B, and C will be controlled by the individual(s) responsible for material storage. While the above areas will be posted to limit access, other positive controls (other than that for the overall site area) or guards may not be provided. Level D areas will be posted with the storage level designation only."

8. Section 5.5, Correction of Nonconformances. This section provides for "rework" and "use-as-is" dispositions for nonconforming items. As an alternate, the "repair" disposition (as defined in ANSI N45.2.10-1973) will also be used.
9. Section 6.2.4, Storage of Food and Associated Items. Controlled areas, within storage areas, will be established for the storage of food, drink, and salt tablets. These areas will be controlled through normal supervision and inspection.
10. In Section 8, the control of documentation and records shall be in accordance with Section QA-I-6 of the Ebasco QA Program Manual for the South Texas Project.
11. Appendix A3.4.2, Inert Gas Blankets. There may be cases involving large or complex shapes for which an inert or dry air purge flow is provided rather than a static gas blanket in order to provide adequate protection due to difficulty of providing a leakproof barrier. In these cases a positive pressure purge flow may be utilized as an alternative to the leakproof barrier.

EXCEPTIONS TO ANSI N45.2.3-1973:

12. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.

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13. Alternative equivalent zone designations and requirements may be utilized to cover those situations not included in the subject standard; for example, situations in which shoe covers and/or coveralls are required but material accountability is not. In addition, zones might be combined into the next more restrictive category in order to reduce total number of zones.

EXCEPTIONS TO ANSI N45.2.4-1972:

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14. Section 1.2, Applicability. The standard is applied to the items and systems identified in Paragraph 1.1.1 and to additional systems depending on the nature and scope of the work to be performed and the importance of the item or service involved.
15. Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspections and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.

EXCEPTIONS TO ANSI N45.2.8-1975:

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16. Section 1.1, Scope. The term "important items" will be interpreted to apply to those activities or quality attributes of an item or service that could affect a nuclear safety-related characteristic. For example, if a barrier is required for leakage control, but serves no structural function, the leaktight characteristic would be considered "important," but appearance, dimensional requirements, and structural features would not necessarily be considered important; or if a pump casing is required for coolant boundary integrity, but the pump does not have to operate to provide for nuclear safety, those attributes which affect its operation would not be considered important from the standpoint of nuclear safety.

Section 2.1, Planning. The required planning is frequently performed on a generic basis for application to many installations on one or more projects. This results in standard procedures or plans for installation and inspection and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique. However, standard procedures or plans will be reviewed for applicability in each case. Installation plans or procedures are also limited in scope to those actions or activities which are essential to maintain or achieve required quality.

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17. Section 3.3, Processes and Procedures. The terms "installation site," "installation area," and "site" used in this standard shall be interpreted as follows:
- "Installation site" or "site" will be interpreted the same as "construction site." When applied to documents, these may be at the central office or work area document control station.
 - Installation area - Immediate proximity of location where work is to be performed.
18. Section 3.5(e), Site Conditions. This requirement will be applied only if subsequent correction of adjacent nonconformances could damage the item being installed.


Section 4.6, Care of Items. HL&P retains the authority and is the "Responsible Organization" for temporary usage of equipment or facilities unless specific (ie, on a case-by-case basis) or general authority is granted in writing to the Construction Manager's organization.

EXCEPTIONS TO ANSI N45.2.9-1974:

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19. Section 1.4, Definitions. Quality Assurance Records - A document is considered complete when it has finished full processing and has been issued for use in design, procurement, construction, or manufacturing.
20. Section 1.4, Definitions. Authenticated Records - Those records which are clearly identified as a statement by the individual or organization holding responsibility. Handwritten signatures are not required if the document or printout is clearly identified as a statement by the reporting individual or organization.
21. For Appendix A, an installation shall be considered to be in an "as constructed" condition if it is installed within the tolerances established by Project Engineering indicated in the design output documents.

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EXCEPTIONS TO ANSI N45.2.12-1977:

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22. ANSI N45.2.12-1977, Section 4.5.1, states, "The audited organization shall provide a follow-up report stating the corrective action taken and the date corrective action was completed." This implies that the audited organization must provide the auditing organization with written notification detailing what corrective action was taken and when the corrective action was completed.

In actual practice, the audited organization will provide the auditing organization with documented corrective action including the date when the corrective action will be completed. The auditing organization will evaluate the corrective action response to determine if corrective action verification is necessary. If verification is necessary, the corrective action verification will be performed after the scheduled completion date and the result of the verification will be documented.