The Light company Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

March 30, 1981
ST-HL-AE-639
SFN: T-1800

Mr. Darrell G. Eisenhut
Division of Licensing
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Soutn Texas Project
Units 1&2
Docket Nos. STN 50-498, STN 50-499
Preliminary Draft Copy of the Quality
Assurance Program Description for
Operations (FSAR Section 17.2)

Attached is a preliminary copy of the revised description of the quality assurance program for operations. This preliminary copy is being provided to your staff to assist you in preparing your Safety Evaluation Report on this program. An amendment to the Final Safety Analysis Report which will revise Section 17.2 has been scheduled for submittal on or about April 3, 1981.

Should additional information be required, please contact Mr. L. R. Jacobi at (713) 676-3397.

Very truly yours,

G. W. Oprea, Jr.
Executive Vice President

LRJ/par
Attachment

8104020 254

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PRELIMINARY

17.2 QUALITY ASSURANCE DURING THE OPERATIONS PHASE

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 Electric Generating Station (STPEGS).

HL&P'S Nuclear Quality Assurance Program 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, as defined herein, with ANSI N45.2 and the applicable daughter standards, ANSI N18.7 and implementing Regulatory Guides as defined herein.

The HL&P quality assurance program is implemented in two phases. The design and construction phase is defined by the Project Quality Assurance Plan and the operational phase (including the initial test program and operations phase activities during the design and construction phase) will be defined by the Operations Quality Assurance Plan. 16

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

Insert A →

17.2.1 Organization

The organization charts shown in Figures 17.2-1 and 17.2-3 illustrate: (a) groups within HL&P having quality responsibilities (design engineering, procurement, manufacturing, construction, inspection, test, instrumentation and control, nuclear engineering, operations and maintenance) and (b) Quality Assurance interdepartmental relationships for the South Texas Project.

17.2.1.1 Authority and Responsibility.

2
Q 421.1
Q 421.3
Q 421.4

17.2.1.1.1 Quality Assurance (QA) Department: The organization primarily responsible for establishing and executing the HL&P QA Program, which includes QA for fire protection, is the HL&P QA Department. This department is headed by the Manager, QA whose authority in QA matters has been granted in writing by the President of HL&P in his endorsement of the Nuclear Quality Assurance Program Manual.

Manager, Quality Assurance

Responsibility 16

The Manager, Quality Assurance, has the authority to identify, initiate, recommend, or provide solutions to quality related problems and verify the implementation and effectiveness of the solutions. This position has the authority to "stop work" for cause in engineering, design, procurement,

Insert A

The Quality Assurance Department organization depicted in Figure 17.2-1 has been structured to accommodate the simultaneous implementation of design and construction phase and operational phase activities. After STPEGS Units 1 and 2 have completely entered the operational phase, the position of Project Quality Assurance Manager, STP, will be phased out and the Quality Assurance Department organization will be so revised to address only operational phase activities. An amendment will be made to the FSAR to incorporate this revision.

fabrication, construction, and operations phases of the nuclear plant. The minimum requirements established for this position are: 12

a. A college degree in a field of engineering or science or equivalent experience.

b. Eight years of responsible experience, of which a minimum of three years shall be in the field of quality asssurance.

c. Familiarity with nuclear power generation facilities and the related operations.

d. Knowledge of the industry's quality assurance standards and regulatory requirements.

e. Management experience and familiarity with HL&P corporate organizations.

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

a. Project QA Manager, STP

b. Houston QA Manager 16

c. Operations QA Manager

Reporting Function

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

Project Quality Assurance Manager, STP

Responsibility

The Project Quality Assurance Manager, STP, is responsible for quality assurance activities until Release for Test (RFT). He has the authority to "stop work" for cause in engineering, design, procurement, fabrication and construction phases of the nuclear plant. The Project Quality Assurance Manager, STP has a staff of Quality Assurance personnel assigned to procurement QA, quality engineering, and construction quality assurance/quality control.

Reporting Function

The Project Quality Assurance Manager, STP, reports to the Manager, Quality Assurance.

Houston Quality Assurance Manager

Responsibility

The Houston Quality Assurance Manager is responsible for auditing, vendor surveillance, and technical support activities. He has "stop work" authority for cause, resulting from audits, vendor surveillance, or technical support activities of the STP for which he is responsible.

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

a. Supervisor, Vendor Surveillance

b. Supervisor, Audits and Technical Services

Reporting Function

The Houston Quality Assurance Manager reports to the Manager, Quality Assurance. (Note that, temporarily, the Houston Quality Assurance Manager currently reports to the Executive Vice-President of HL&P.)

Operations Quality Assurance Manager

Responsibility

The Operations Quality Assurance Manager is responsible for the issuance of the Operations QA Plan and the QA program for operating nuclear plants, including: startup, modifications, operations NDE/ISI/PSI, maintenance, and nuclear fuel. His responsibility commences upon Release for Test (RFT). RFT commences upon Start-up and Plant QA review and acceptance of the RFT package. He has authority to "stop work" for cause.

Reporting Function

The Operations Quality Assurance Manager reports to the Manager, Quality Assurance.

Plant QA Supervisor

Responsibility

The Plant QA Supervisor is responsible for supervising the implementation of the Operations Quality Assurance Plan. He is responsible for the development of the plant QA program and is responsible for ensuring compliance with all quality-related manuals and procedures which are implemented at the STP Site. He has authority to "stop work" for cause.

Reporting Function

The Plant QA Supervisor reports to the Operations QA Manager.

NDE/ISI QA Supervisor

Responsibility

The NDE/ISI QA Supervisor is responsible for the development and implementation of NDE/ISI/PSI programs for operating power plants. He has authority to "stop work" for cause.

Reporting Function

The NDE/ISI QA Supervisor reports to the Operations QA Manager.

Quality Control Supervisor

Responsibility

The Quality Control Supervisor is responsible for coordinating inspection of selected fabrication, construction, modification, maintenance and tesing activities, ensuring proper nonconformance identification and assuring that the personnel performing inspections are properly certified. He has "stop work" authority for cause for those activities for which he is responsible.

Reporting Function

The Quality Control Supervisor reports to the Project Quality Assurance Manager, STP.

16

Supervisor, Vendor Surveillance

Responsibility

The Supervisor, Vendor Surveillance, is responsible for the performance of vendor surveillance including: planning, reporting, nonconformance identification and control, and final release. He has authority to "stop work" for cause for those activities for which he is responsible.

Reporting Function

The Supervisor, Vendor Surveillance, reports to the Houston QA Manager.

Supervisor, Audits and Techical Services

Responsibility

The Supervisor, Audits and Technical Services, is responsible for auditing to ensure proper implementation of the Nuclear QA Program, technical support of Plant QA activities of nuclear projects as required and training support. He has authority to "stop work" for cause for those activities for which he is responsible.

Reporting Function

The Supervisor, Audits and Technical Services, reports to the Houston QA Manager. 16

Figure 17.2-1 shows the intradepartmental and Figure 17.2-3 shows the interdepartmental QA relationships during the operational phase.

17.2.1.1.2 Other HL&P Departments Which Have Quality-Related Functions (See Figure 17.2-3):

Nuclear Services ~~and Licensing~~ Department

The Nuclear Services Department personnel assigned to the STP are responsible for the review of engineering and design of nuclear systems, safety analysis, nuclear licensing, and health physics for the nuclear power plant projects. 16

Power Plant Engineering Department

The Power Plant Engineering Department is responsible for the review of engineering and design of BOP systems control systems, and on-site electrical distribution systems. 16

Nuclear Fuel ~~Department~~

Nuclear Fuel is responsible for the nuclear fuel design, fuel management, and fuel acquisition. 16

System Engineering Department

The System Engineering Department is responsible for the review of the engineering, design, and development of the power plant main generator electrical characteristics and constants, major transformers, electrical protection system for the main generator(s) and major transformers, the design and development of the transmission interface system, substations, and overall communication system design and development including communication systems within the plant. 16

Environmental Protection Department

The Environmental Protection Department is responsible for performing environmental evaluations during planning, construction, and operation of nuclear power plants. In addition, the department is responsible for acquisition of local, state, and federal permits, exclusive of NRC safety licensing related to power plant licensing. 16

System Purchasing Department

The System Purchasing Department is responsible for the procurement of equipment, material and services necessary for operation of the plant. The procurement responsibility also includes a commercial review of terms and 16

conditions, specifications, inquiries, coordination of bidder list approvals, bid evaluations, contracts, and purchase order approvals. 16

Security Division

The Security Division is responsible for the development and coordination of security practices and procedures for the company, and advising and assisting heads of company facilities in the establishment and maintenance of physical security at the individual installations. 16

Stores Department

The Stores Department is responsible for the receiving, issuing, and storage of materials and equipment, excluding nuclear fuel, for the power plant during the operations phase. The Stores Department is responsible for receiving, storing and issuing the transmission facility interface system material and equipment. 16

Nuclear Operations Department 16 Q421.5 Q421.29 Q421.37

The Nuclear Operations Department is responsible for all aspects of the nuclear plant operation and maintenance including the on-site Radiation Protection and Fire Protection Programs.

Project Management Department

The Project Management Department is responsible for the Records Management System activity which includes all aspects of processing and storage of quality-related records. 16

17.2.1.1.3 Committees: Special committees have been formed to provide an overview and advisory mechanism to ensure that the HL&P Nuclear Quality Assurance Program is functioning properly. 16

QA Program Evaluation Committee

The QA Program Evaluation Committee has been formed to provide a means by which executive-level management becomes involved with the QA Program to review the status and adequacy of the overall programs. The permanent committee members are listed below. Additional members may be appointed by the Executive Vice-President. The committee meets semiannually and submits a written report of its findings to the Executive Vice-President. 16

Members:

Chairman - Executive Vice President

Members (Permanent) - Vice-President, Nuclear Engineering and Construction; Vice President, Purchasing and Services; Vice President, Fossil Plant Engineering and Construction; General Manager, Fossil Power Plant Construction; Manager, South Texas Project; Manager, Quality Assurance; Director, Nuclear Fuels; Manager, Nuclear Operations 16

Members (Temporary) - HL&P personnel assigned by the Chairman and consultants as required by HL&P

The QA Program Evaluation Committee has the following responsibilities:

a. Assesses the effectiveness of the HL&P Nuclear QA Program from the management viewpoint including:

   1. Review of NRC reports

   2. Review of trend analysis data

   3. Review of selected audit reports

   4. Review of management QA audits

b. Reviews major substantive changes to methods and systems being implemented as part of the Nuclear Quality Assurance Program.

Independent Safety Engineering Group (ISEG)

The ISEG will be established to advise management on the overall quality of operations. The functions of the ISEG are not intended to replace any of the responsibilities assigned to the PORC or the NSRB. ISEG will be an additional independent group located onsite providing for a continuing, systematic and independent assessment of plant operations. The composition and functions of the ISEG will be more fully described in Section 13.4 in a later amendment.

Nuclear Safety Review Board (NSRB)

The NSRB has been established to perform the independent review portion of HL&P's review and audit program. The review and audit program is more fully described in Section 13.4.

Meeting frequency, quorum requirements, provision for alternate members, and required review items for the NSRB are described in Section 13.4.

Plant Operations Review Committee (PORC)

The STP PORC has been established to perform the onsite review portion of HL&P's review and audit program.

The PORC is composed of the following members:

Plant Superintendent - chairman
Assistant Plant Superintendent
Operating General Supervisor
Lead Reactor Engineer
Technical General Supervisor
Plant QA Supervisor

Maintenance General Supervisor
Radiation Protection Supervisor
Site Engineering representative

Meeting frequency, quorum requirements, provision for alternate members, and required review items for the PORC are described in Section 13.4.

17.2.1.2 Policies and Goals. QA policies and goals for HL&P are developed by the Manager, QA, and are reviewed and approved by the Executive Vice-President.

The Executive Vice-President will review and approve the Nuclear QA Program Manual and will review and approve the Operations QA Plan and all revisions thereto. The requirements for direct reporting, briefing, and approval ensure that the Executive Vice-President maintains continuing involvement in QA matters.

The Manager, QA ensures departmental procedures and revisions are reviewed. He delegates this responsibility to the Operations QA Manager or the Plant QA Supervisor as applicable.

The Manager, QA, and the cognizant departments review and approve departmental procedures which control the quality-related work performed by HL&P departments listed in Subsection 17.2.1.1, as well as revisions.

Prior to implementation, the Operations QA Manager or the Plant QA Supervisor ensure that documents prescribing activities affecting quality, including revisions or changes, have been prepared, reviewed, and approved in accordance with established procedures.

17.2.1.3 Organizational Independence. The reporting arrangement utilized by the QA Department ensures that those personnel charged with responsibility for verifying compliance with QA Program requirements have the organizational freedom to:

1. Identify quality problems.

2. Initiate, recommend, or provide solutions.

3. Verify implementation of solutions.

The reporting arrangement, as illustrated on Figure 17.2-1, is such that personnel responsible for verifying compliance with quality requirements do not have direct responsibility for the performance of the work being verified and report directly to a supervisor who in turn reports directly to the ~~Manager STP QA~~, Project QA Manager, STP, the Houston QA Manager, or the Operations QA Manager.

The Manager, QA reports directly to the Executive Vice President. This ensures that personnel who verify compliance with QA Program requirements, including auditors and inspectors, have a direct line of communication to the Executive Vice President.

Those Houston QA Department personnel who provide procurement support (review of procurement documents, vendor audits, and in-process surveillance) receive technical guidance and administrative control from their respective supervisors. | 16

Plant QA personnel receive technical guidance and administrative control from the Plant QA Supervisor, who gets technical guidance and administrative control from the Operations QA Manager.

The Manager, QA, the Operations QA Manager and the Plant QA Supervisor have written authority to stop work or control further processing, delivery, installation, or use of nonconforming items until proper disposition of the deficiency or conditional release has been approved. | 16

As further described in Section 17.2.4, the QA Program provides for a QA review of procurement documents for structures, systems, components and services important to safety, including contracts and subcontracts. This review ensures that the procurement documents include a requirement that suppliers of materials or services important to safety submit a copy of their QA ~~manual~~ program description or program description for review and approval by HL&P. | 16 | 16

Each QA manual is reviewed for compliance with HL&P's QA program requirements; one of these requirements is that the contractor or subcontractor's QA group has sufficient organizational freedom to identify and follow up on problems.

17.2.1.4 Delegation of QA Functions. The entire HL&P QA Program for operations will be established by HL&P personnel. During normal operations the program will be executed by HL&P personnel who may be assisted by subcontractors. During startup, refueling, maintenance, and inservice inspection, first-level quality control inspection and nondestructive examination (NDE) activities may be subcontracted. However, HL&P will retain responsibility for the total QA Program, and plant QA personnel will perform second-level surveillance of subcontracted QA activities.

17.2.1.4.1 When first level quality control inspection and nondestructive examination is not subcontracted it will be performed by HL&P personnel who are certified and qualified in accordance with applicable codes, standards, procedures and other regulations. Monitoring and surveillance of the quality control and nondestructive examination activities will be performed by Plant Quality Assurance personnel. | 16

17.2.2 Quality Assurance Program

17.2.2.1 Regulatory Commitment. The HL&P QA Program is a total administrative control and quality assurance program developed to protect the health and safety of the public and to meet applicable regulatory requirements. The quality assurance program for operations conforms to the following Regulatory Guides and standards, with clarifications and exceptions as noted: | 2 Q421.2

- RG 1.8, Revision 1-R: Selection and training of QA Department personnel will conform to the requirements of this Regulatory Guide.
- RG 1.28, Revision 0: The quality assurance program for operations will conform to the requirements of this Regulatory Guide. | 16
- RG 1.30, Revision 0: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.33, Revision 2: The quality assurance program for operations will conform to the requirements of this Regulatory Guide. | 9 | n Q421.48
- RG 1.37, Revision 0: The quality assurance program for operations will conform to the requirements of this Regulatory Guide. | 16
- RG 1.38, Revision 2: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.39, Revision 2: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.58, Revision ~~0~~ 1: The quality assurance program for operations will conform to the requirements of this Regulatory Guide. | 2 Q421.2 | 16

Insert C

- RG 1.64, Revision 2: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.74, Revision 0: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.88, Revision 2: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.94, Revision 1: The quality assurance program for operations will conform to the requirements of this Regulatory Guide with the following clarification:

  1) The testing frequency of sleeves with filler metal (cadwelds) will comply with Sections 3.8.1.6.3 and 3.8.3.6.3. | 7

  2) ~~Concrete will be sampled in accordance with the requirements of Paragraph 4.8 of ANSI N45.2.5-1974 except that samples may be taken from the concrete truck discharge instead of the concrete pump discharge.~~ | 4 | 16

Insert D

- RG 1.116, Revision 0-R: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.123, Revision 1: The quality assurance program for operations will conform to the requirements of this Regulatory Guide.
- RG 1.146, Revision 0: The quality assurance program for operations will conform to the requirements of this Regulatory Guide. | 16

Insert C

... with the exception of regulatory position C.1. Personnel who (1) approve preoperational, startup, and operational test procedures and test results and (2) direct or supervise the conduct of individual preoperational, startup, and operational tests will be qualified under the guidelines of ANSI N45.2.6-1978, rather than R.G 1.8.

Insert D

ANSI N.45.2.5-1974, 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 f 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 tolerence, corrective action will be implemented to assure that subsequent loads awaiting discharge into the pump are within tolerances for the placement. This will be accomplished by adjusting the plastic property requirements of the concrete at the pump intake.

"Correlation Tests", "Delivery Point", and "Placement Point" are as defined in ANSI N.45.2.5-1978, Section 1.4.

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).

If a work activity and contract is for a two-month period or less, an audit is not necessary when a facility preaward audit has been conducted.

o ANSI N45.2.12, Draft 3, Revision 4: The quality assurance program for operations will conform to the requirements of this standard. | 2 Q421.2

The following is a brief description of how the HL&P QA Program meets 10CFR50, Appendix B, criteria during the preoperational test program and the operations phase: | 4 Q421.8

1. Organization - The HL&P organization meets the requirements of criterion I. The organizational structure is such that a high level of management establishes QA policies and goals and maintains a continuing involvement in QA matters. The Manager, QA, has overall responsibility for the QA Program and reports directly to the HL&P Executive Vice-President. This assures that the QA organization is sufficiently free of the influences of cost and schedule to effectively identify problems and participate in their correction. Refer to Section 17.2.1 for details of the organizational structure. | 16

2. Quality Assurance Program - The QA Program, which is described in Subsections 17.2.2.2, through 17.2.2.18, was developed to meet the requirements of 10CFR50, Appendix B, and to provide an effective management control system for HL&P. The QA Program ~~has been~~ will be extended to the operation phase of STP by the development of an Operations QA Plan, the development of implementing procedures, and the provision of of a plant QA staff. Refer to Section 17.2.1 through 17.2.18 for a complete description of the program.

3. Design Control - During the operations phase, design and design change are controlled by Power Plant Engineering Department, Nuclear Fuel, System Engineering Department, and Nuclear Services ~~and Licensing Department departmental~~ procedures and by plant administrative procedures. Plant administrative procedures will specify the mechanism for identifying the need for design changes and the method for transmitting design change requests to the appropriate engineering department. Power Plant Engineering, Nuclear Fuel, System Engineering and Nuclear Services ~~and Licensing~~ departmental procedures will control the engineering design process. Plant administrative procedures will control implementation of design changes and modifications. QA Department procedures will control the audits and surveillance to be performed during the design process. Refer to Section 17.2.3 for further discussion. | 16 | 16

4. Procurement Document Control - Procurement documents are controlled by System Purchasing Department procedures, QA Department procedures, plant QA procedures, and plant administrative procedures. Plant administrative procedures control the preparation and approval of plant-generated procurement documents, and plant QA procedures control the QA review of documentation for items procured for the plant. System Purchasing Department procedures govern the preparation of procurement documents for Houston purchases. QA Department and Plant QA procedures cover review of procurement documents prepared by the System Purchasing Department. For further discussion, refer to Section 17.2.4. | 16

5. Instructions, Procedures, and Drawings - The HL&P Nuclear QA Program consists of a group of documents beginning at the top with policies and goals and ending with a system of procedures that cover activities affecting quality. The system is discussed in Subsection 17.2.2.4 and Section 17.2.5. | 16

6. Document Control - Measures have been established to control documents, and changes thereto, which prescribe quality. The Nuclear QA Program Manual, the Operations QA Plan, departmental procedures manuals, and the STP Plant Procedures Manual contain sections which govern the issuance, review, approval, and revision of their respective procedures, instructions, and drawings. For further discussion, refer to Section 17.2.6. | 16

7. Control of Purchased Material, Equipment, and Services - System Purchasing Department procedures provide for evaluation of prospective vendors. QA departmental procedures provide for in-process vendor surveillance and plant QA procedures provide for procurement document review, receipt surveillance and witnessing of all receipt inspection checks. For further discussion, refer to Section 17.2.7. | 16 | 11 | 16 | Q421.41

8. Identification and Control of Material, Parts, and Components - Identification and control of material, parts, and components will be controlled by administrative procedures, which are required to be developed by the Operations QA Plan. Plant QA procedures will require verification of the implementation of the appropriate plant administrative procedures. For further discussion, refer to Subsection 17.2.2.4 and Section 17.2.8. | 2

9. Control of Special Processes - Special processes will be controlled by plant procedures and QA procedures. The applicable plant procedures will detail the techniques to be used and the qualification requirements for persons performing special processes. Plant QA procedures will provide for surveillance to ensure proper implementation of these procedures. For further details, refer to Subsection 17.2.2.4 and Section 17.2.9. | 9 | 16

10. Inspection - Plant maintenance procedures will identify hold points for the performance of required independent inspections for quality related plant maintenance activities. Plant QA personnel and other QA Department personnel will perform the required inspections in accordance with Plant QA procedures and other QA Department procedures. For further discussion, refer to Sections 17.2.4 and 17.2.10. | 9 | 11 | Q421.41

11. Test Control - Test control requirements will be prescribed in plant procedures and startup instuctions. Plant QA procedures will provide for surveillance of tests to ensure that test requirements are met. For further discussion, refer to Section 17.2.11. | 16

12. Control of Measuring and Test Equipment - The calibration of measuring and test equipment used by plant personnel will be controlled by plant procedures. The calibration of NDE equipment will be covered by | 16

Operations QA NDE/ISI/PSI procedures. Plant QA procedures will cover surveillance of the measuring and test equipment calibration program to ensure that the requirements of the plant administrative procedures are met. For further discussion, refer to Section 17.2.12.

13. Handling, Storage, and Shipping - Stores Department administrative procedures will control the handling, storage, and shipping of items, excluding nuclear fuels, subject to the QA Program. A plant QA procedure will cover surveillance of this area to ensure compliance with administrative procedures. For further discussion, refer to Section 17.2.13.

14. Inspection, Test and Operating Status - Plant procedures on equipment control will prescribe requirements for marking and tagging of nuclear plant items. This plant administrative procedure will comply with the requirements of Section 5.2.6 of ANSI N18.7-1976. Inspection, test, and operating status indication will be subject to periodic surveillance by plant QA personnel. This surveillance will be controlled by a plant QA procedure. For further discussion, refer to Section 17.2.14.

15. Nonconforming Materials, Parts, or Components - Procedures on material control will prescribe requirements for the control of nonconforming materials, parts, and components. This plant procedure will comply with Section 5.2.14 of ANSI N18.7-1976. Material control will be monitored by plant QA personnel in accordance with a plant QA procedure. For further discussion, refer to Section 17.2.15.

16. Corrective Action - Administrative procedures will be developed which provide for the identification, evaluation, reporting, and correction of failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances. Periodic surveillance by plant QA personnel will ensure that conditions adverse to quality are properly identified, reported, and corrected. For further discussion, refer to Section 17.2.16.

17. Quality Assurance Records - The Records Management System has been established and is currently implementing an automated records management program. This program is controlled by the Records Management System Manual and functions to identify, classify, and properly store QA records, including those generated during the operations phase. Those portions of the records management system that are implemented at the plant will be audited by the plant QA staff. Those portions that are implemented at the Houston office will be audited by Houston QA personnel. For further discussion, refer to Section 17.2.17.

18. Audits - The QA Program provides for a comprehensive program of planned, periodic audits to verify compliance with QA requirements. Houston QA personnel conduct audits of the plant QA staff, other HL&P departments, and vendors and contractors in accordance with QA Department procedures. Plant QA personnel audit plant activities. Audits are preplanned and scheduled according to a master audit plan.

Audits are conducted using written checklists. The Manager, QA, forwards audit reports to the Executive Vice-President, with copies to the manager of the department audited (or equivalent level of management if the audited organization is not within HL&P), and to members of the QA Program Evaluation Committee. Written responses to audit deficiencies are required, and the status of unresolved audit deficiencies is periodically reviewed. For further discussion, refer to Sections 13.4 and 17.2.18. | 16

17.2.2.2 Applicability. The purpose of the QA Program is to establish the principles which, when implemented, will provide that level of quality assurance which is appropriate to each item or activity important to safety. It is recognized that the degree of management control or quality assurance to be applied varies with different systems and activities, and the degree of applicability of any specific item in this program will differ from item to item and activity to activity.

The degree to which the requirements of this Program and its implementing procedures are applied will be based upon the following:

a. The importance of a malfunction or failure of the item to safety;

b. The design and fabrication complexity or uniqueness of the item; | 16

c. The need for special controls and surveillance or monitoring of processes, equipment and operational activities;

d. The degree to which functional compliance can be demonstrated by inspection or test;

e. The quality history and degree of standardization of the item or activity.

The quality requirements for items important to safety will be established using approved procedures. Quality requirements will be determined by the responsible Engineering Department and concurred with by the Quality Assurance Department for those items which are important to safety.

Those safety-related structures, systems, and components controlled by the QA program are listed in Section 3.2, along with their associated fire protection systems. | 2 Q421.3 Q421.4

17.2.2.3 Timely Development of the QA Program. The Operations QA Plan will require that a schedule of procedure development be generated to ensure that those portions of the QA Program required to control various activities are developed and implemented prior to the time the activity begins. This schedule will be based on input from the construction schedule and the plant startup schedule. The Operations QA Program will be fully implemented 90 days prior to fuel loading. | 16

17.2.2.4 QA Program Documents. The HL&P Nuclear QA Program Manual, Operations QA Plan, STP Plant Procedures Manual, STP plant QA procedures and | 16

the STP Startup Manual are the primary documents by which HL&P assures effective control of all quality activities.

The STP Operations QA Plan is the document which conforms to the charter established in the Nuclear QA Program Manual by defining procedures, guidelines, checklists, etc., to be used by personnel associated with the plant during the operations phase. The Operations QA Plan is subdivided into eighteen areas, each corresponding to one of the criteria contained in 10CFR50, Appendix B.

The relationship of the various manuals is shown on Figure 17.2-2.

The Operations Nuclear QA Program will be implemented by the following types of procedures:

- Plant operating procedures
- Plant administrative procedures
- Plant surveillance procedures
- Plant radiological procedures
- Plant training procedures
- Plant maintenance procedures
- Plant technical procedures
- Plant emergency plan implementing procedures
- Plant QA procedures
- HL&P departmental procedures
- Plant startup instructions
- HL&P Security procedures

Details regarding plant operating, administrative, maintenance, technical, surveillance, radiological, training and emergency procedures are given in Chapter 13. The Plant Superintendent is responsible for implementation of these procedures, except for the plant QA procedures, which will be implemented by the Plant QA Supervisor. It should be noted that many of the 10CFR50, Appendix B, criteria will be covered by plant procedures. Following is a list of the types of procedures that will be developed and the respective 10CFR50, Appendix B, criteria that they cover:

Administrative Procedures	Appendix B Criteria
Personnel conduct and control	None
Document control procedures	VI
Procurement and material control	VII, VIII, XII, XV, XIV, XIII, IV
Corrective actions	XVI
Plant records	XVII
Control of plant modification	III, VI

Operating Maintenance and Test Procedures	Appendix B Criteria
Equipment control procedures	XIV
System operating procedures	V
General operating procedures	V
Maintenance procedures	IX, X, XI

Operating Maintenance and Test Procedures	Appendix B Criteria	
Preoperational test procedures	XI	
Plant technical procedures	XI	
Startup test procedures	XI	16
Surveillance test procedures	XI	

Departmental Procedures	Appendix B Criteria	
Nuclear Services ~~and Licencing~~ procedures	III, IV, VII	
System Engineering Department procedures	III, IV, VII	16
System Purchasing Department procedures	IV, VII	
Stores Department procedures	XIII	
QA Department procedures	II, III, IV, V, VI, VII, IX, X, XV, XVI, XVII, XVIII	16
Plant QA procedures	III, IV, VIII, IX, X, XV, XVI, XVIII	
Records Management System procedures	VI, XVII	
Nuclear Fuel procedures	III, IV, VII	16
Power Plant Engineering Department Procedures	III, IV, VII	
Security Division procedures	II, IV, VII	

17.2.2.5 Policies and Goals. The HL&P QA Program requirements are invoked by the President of HL&P in his policy statement endorsing the Nuclear QA Program Manual. Adherence to the requirements of the Quality Assurance Program and to those procedures and instructions which implement the QA Program is mandatory for all HL&P organizations and for all contractors or vendors providing items or services covered under the scope of this document. 16

A complete statement of the policies and goals of the HL&P QA Program is contained in the HL&P Nuclear QA Program Manual. The primary goal of the program is the protection of the health and safety of the public, and the fundamental policy is to insist upon, and verify compliance with, written procedures that control quality related activities. 16

All procedures and instruction shall be approved and established, ~~with training in the activities covered by the procedures accomplished~~ prior to the start of the activity being controlled. The distribution of procedures and revisions shall be controlled to preclude the use of obsolete documents. 16

Disputes involving quality are resolved at the working level if possible. When necessary, disputes are referred to higher levels of management, ultimately to the Executive Vice-President.

QA programs and implementing procedures for suppliers or contractors providing materials and services for HL&P which are covered under the scope of the Operations QA Plan shall be subject to review and acceptance by the Operations QA Manager, prior to the commencement of any activity covered under the scope of the HL&P QA Program. 16

17.2.2.6 Indoctrination and Training. The HL&P QA Department ~~has~~ will develop a detailed indoctrination, training, and continuing education program to ensure that QA Department personnel are qualified to a level commensurate with their responsibility. The training programs ~~include~~ will include the following elements:

1. Indoctrination of new or transferred employees

2. On-the-job training such as assisting in audits, vendor surveillance, or other QA Department functions

3. Interdepartmental and intradepartmental training courses and sessions

4. Industry seminars

5. Continuing education funded by HL&P

Proficiency tests are given to those QA personnel performing and verifying activities affecting quality, and acceptance criteria are developed to determine if an individual is properly trained and qualified.

Certificates of qualifications clearly delineate the specific inspections personnel are qualified to perform including the criteria used to determine qualification.

The Manager, QA, is responsible for ensuring that personnel in the QA Department are participating in the program and increasing their proficiency.

It is the responsibility of the Manager, QA, to ensure an indoctrination and training program is conducted for new or transferred employees coming into groups where the employee's function within the group will fall under the purview of the Nuclear QA Program Manual. Employees whose duties and responsibilities are directly related to QA of nuclear power plants shall participate in the indoctrination or training program.

The purpose of the QA indoctrination program is to familiarize the new or transferred employee with the Nuclear QA Program, stressing the importance and meaning of QA as it applies to the employee's new position.

The QA indoctrination will be conducted by the Manager, QA, or his designated representative. The indoctrination can be accomplished either as a group lecture or personal interview. During the lecture or interview, the following items will be covered:

1. Discussion of the philosophy and objectives of the QA Program

2. Explanation of the QA Program and how it affects the duties and responsibilities of the new or transferred employee

3. Purpose, scope and implementation of quality-related manuals, instructions, procedures, regulatory guides, standards and codes, with

specific emphasis placed on those sections which most directly affect the employee's new position.

4. Emphasis on the fact that the HL&P QA Program has been endorsed by the President of HL&P and that quality policies and the various plans and procedures that make up the QA Program are mandatory requirements which must be implemented and enforced.

4 Q421.6 Q421.7

In addition to the QA Department training and indoctrination described above, each set of departmental procedures and the Plant Procedures provide for training of personnel who perform quality-related work. These procedures provide for training in the principles and techniques of the activity involved and for maintenance of proficiency of personnel by retraining, re-examining, and/or recertifying to an extent commensurate with the safety significance of the activity. The procedures address documentation of:

9 Q421.31

1. Scope, objective, and method of implementing the training program

2. Date and content of the training sessions, who attended, and the results when appropriate

17.2.2.7 Personnel Qualifications. The Manager, QA, must have the qualifications delineated in Subsection 17.2.1.1.1.

4

17.2.2.8 Conditions for Activities Affecting Quality. To ensure that activities affecting quality are carried out with appropriate equipment under suitable environmental conditions, the following features have been incorporated into Nuclear QA Program implementing procedures:

16

1. Procedures governing activities which require equipment (i.e., procedures for maintenance, testing, modification, and nondestructive testing) specify what types of equipment are suitable.

2. Procedures governing activities with special environmental requirements include these requirements as prerequisities by listing the environmental conditions required.

16

3. QA surveillance of quality-related activities shall be conducted in accordance with approved checklists which incorporate acceptance criteria and appropriate references as defined in plant QA procedures.

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17.2.2.9 Management Review. The Executive Vice President shall regularly assess the scope, status, adequacy and compliance of the QA Program relative to the requirements of 10CFR50, Appendix B. This assessment shall be the combined result of:

a. Frequent contact with QA Program status through attendance at meetings, and review of reports.

16

b. Performance, at least once a year, of a preplanned, and documented assessment of the effectiveness of the HL&P QA Program to assure that the program meets regulatory requirements and the policies and

directives of HL&P. This assessment is performed utilizing an independent consultant. Any corrective action which may be deemed necessary, as a result of these assessments, shall be formally identified and tracked to resolution. 16

The provision for QA review of procurement documents, as discussed in Section 17.2.4, ensures that purchase orders and contracts include the provision for HL&P QA audits of contractors. The HL&P QA audit program, as discussed in Section 17.2.18, ensures that audits of principal contractors are scheduled and performed.

17.2.2.10 Planning for System Turnover. HL&P has assigned to Brown & Root, Inc. the responsibility for developing a procedure for the control of release for test and system turnover. This procedure and the HL&P Startup Manual will provide sufficient guidance to ensure that the phaseout of design and construction, release for test, testing, and the turnover of plant systems are accomplished in a controlled manner. 16 16

17.2.2.11 Maintaining the QA Program Description Current. The Manager, QA, has delegated the responsibility for keeping QA Program documents current. The Houston QA Manager is responsible for keeping the Nuclear QA Program Manual current; the Operations QA Manager is responsible for keeping the Operations QA Plan current. The Houston QA Manager and the Operations QA Manager fulfill this responsibility by issuing proposed revisions to the Nuclear QA Program Manual and Operations QA Plan as required. These proposed revisions require review and approval by the Manager, QA and the Executive Vice-President, prior to issuance. The Houston QA Manager has the responsibility for issuing, approving, and updating implementing procedures which control activities of Houston QA personnel. The Operations QA Manager has the responsibility for issuing, approving, and updating implementing procedures which control activities of the Operations QA Division personnel. The NRC will be notified for review and acceptance of substantive changes in the Nuclear Quality Assurance Program prior to implementation, and of changes in organizational elements within 30 days after announcement. (The NRC need not be notified of personnel reassignments or editorial changes.) 16 11 16 16

17.2.2.12 Computer Code Programs. Computer code programs which affect items important to safety are subject to the controls of the QA program. QA Department procedures will control the audits and surveillances to be performed during the qualification and use of ~~those~~ those programs affecting activities considered important to safety. 16

17.2.3 Design Control

17.2.3.1 Design Bases, Quality Standards, and Deviations. During the operations phase, design work for STP including items important to safety will be performed by either: System Engineering Department, Nuclear Services, ~~Licensing~~ Department, Power Plant Engineering Department, and Nuclear Fuel or a contractor. The System Engineering Department, Nuclear Services, ~~Licensing~~, Power Plant Engineering Department and Nuclear Fuel will have departmental procedures which have been reviewed and approved by the Operations QA Manager or the Plant QA Supervisor. These departmental 16

procedures will include procedures which control the preparation and review of design documents. These procedures require that applicable regulatory requirements, design bases, and codes and standards be included in design documents for structures, systems, and components important to safety. Such references given in the FSAR may be updated as necessary to reflect revised design criteria. The procedures also provide for a documented review, coordinated by the cognizant engineer for the design work, of design documents. Design work done by contractors is controlled by written engineering procedures that are developed by the contractor and reviewed by HL&P. The HL&P review ensures that the procedures used by the contractor meet the requirements of the HL&P Nuclear QA Program. 16 16 16

Deviations from quality standards specified in HL&P departmental procedures, design documents and contractor's procedures require the approval of the HL&P QA Department. 4 Q422.10

17.2.3.2 Application Suitability Review. During the operations phase, the review for application suitability of materials, parts, equipment, and processes that are essential to the ~~safety-related~~ functions of structures, systems, and components (important to safety) is done as part of the design document preparation and review process mentioned in Subsection 17.2.3.1. The procedures which govern the preparation and review of design documents require the use of valid industry standards and specifications in the application suitability review. Review of standard "off the shelf" commercial materials, parts and equipment for suitability of application with structures, systems, and components important to safety ~~shall~~ will be conducted prior to selection. 16 4 Q422.12 16 2

17.2.3.3 Reactor Physics, Analyses, Materials Compatibility, Access, Inservice Inspection, and Repair. The design control procedures mentioned in Subsection 17.2.3.2 require that design analyses be performed where appropriate. The procedures provide guidelines for determining when reactor physics, stress, thermal, hydraulic, and accident analyses must be performed and also provide guidance on the performance of the analyses. These analyses establish design criteria. The procedures for preparation and review of design documents require that consideration be given to materials compatibility, accessibility for maintenance, inservice inspection, and acceptance criteria for inspection and tests. The plant QA procedures and QA Department procedures that deal with review of design documents require that the QA review include verification of adequate acceptance criteria for inspection and tests.

17.2.3.4 Design Verification. Each organization which performs design work will perform its own design verification. Design verification ~~may~~ will be performed by qualified personnel who were not directly responsible for the adequacy of the design. The Operations QA Plan will require that the organizations listed in Subsection 17.2.3.1 have departmental procedures to cover design verification. Design verification procedures will assure the following: 16 16

a. Verification shall be complete prior to relying on the component, system, or structure to perform its intended safety function.

b. The responsibilities of the verifier, the areas and features to be verified, the pertinent considerations to be verified and the extent of documentation shall be identified in procedures.

c. The types of design documents requiring design verification shall be identified in procedures.

These procedures will reference and conform to the requirements of RG 1.64, Revision 2, and will provide for the documentation, correction, and measures taken to prevent recurrence of design errors found during the verification process which could have adversely affected structures, systems and components important to safety.

Contractors who do design work will be required to have a design verification program which meets the requirements of ANSI N45.2.11. This requirement will be included in the procurement documents for the design service, and its inclusion will be verified during the QA review of the procurement document.

Design verification methods (design review, alternate calculations or qualification testing) shall be established; and guidelines shall be established for determining the appropriate methods.

Qualification testing shall be performed under conditions that simulate the most adverse design conditions as determined by analysis. Prototype, component, or feature testing shall be performed as early as possible prior to installation of plant equipment, ~~or prior to~~ no later than the point when the installation would become irreversible. Design verification, if other than by qualification testing, is completed prior to release for procurement, manufacturing, construction or to another organization for use in other design activities. In all cases the design verification ~~should~~ shall be complete prior to relying on the component, system, or structure to perform its function.

Procedures shall be established to assure that computer codes are verified prior to use and their use is specified ~~for those activities considered important to safety~~ for those activities considered important to safety.

17.2.3.5 Design Interfaces. The principal organizational interfaces for the design process are those between:

1. STP plant staff and the Power Plant Engineering Department
2. STP plant staff and Nuclear Fuel
3. Nuclear Fuel and Westinghouse Nuclear Energy Division (WNES)
4. STP plant staff and WNES
5. STP plant staff and the Nuclear Services Department
6. STP plant staff and the System Engineering Department

The STP plant staff's interface with the Power Plant Engineering Department, the Nuclear Services Department, Nuclear Fuel, the System Engineering Department, and WNES will be controlled by plant administrative procedures. These procedures will contain requirements for correspondence control and document transmittal to the Records Management System to ensure adequate documentation. The various engineering departments will each have written procedures to control interface with the STP plant staff and WNES. These procedures will contain requirements for correspondence control and document submittal to the Records Management System to ensure adequate documentation. Adherence to these procedures will ensure that design documents are controlled and will prevent the issue of superseded design documents. The plant administrative procedures for interface control will be reviewed by the Plant QA Supervisor, and the departmental procedures will be reviewed and approved by the Operations QA Manager or the Plant QA Supervisor as applicable. | 16

17.2.3.6 Design Changes. Design changes during the operational phase of STP will be controlled by the Power Plant Engineering Department, Nuclear Fuel, System Engineering Department, and Nuclear Services ~~and Licensing Department~~ procedures. These procedures will require that engineered design changes be reviewed and approved by the organization that performed the original design or by an organization designated by the engineering group in HL&P that approved the original design. The Power Plant Engineering, Nuclear Fuel, System Engineering ~~Department~~, and Nuclear Services ~~and Licensing~~ departmental procedures on design change control will require that engineered changes in design be given the same level of review as that given the original design. | 16

Measures shall be provided to assure that responsible plant personnel are made aware of design changes and/or modifications which may affect the performance of their duties. | 16

17.2.4 Procurement Document Control

17.2.4.1 Procurement Document Content. The system for ensuring that procurement documents contain required information is based primarily on procedures that furnish guidance for procurement document preparation and subsequent changes ~~and on procedures that furnish guidance for procurement document preparation and subsequent changes.~~ and on procedures that govern procurement document review, approval, and issuance. | 16

The procurement process may be initiated at either the plant or the Houston office. However, as discussed in Subsection 17.2.4.2, generally, purchase orders are prepared and issued by System Purchasing Department personnel. | 16

Plant and departmental administrative procedures prescribe the methods for completing the required requisition forms and require that the following information be included or referenced, as appropriate, in requisitions of parts, components, material, structures or services important to safety: | 16

1. Applicable regulatory, code, and design requirements, including applicable material and component identification requirements, drawings, specifications, standards, inspection and test requirements, special | 4 Q421.14

process instructions and handling, preservatio., cleaning, storage, packaging and shipping requirements. | 16

2. Extent that supplier QA program ~~should~~ shall comply with ANSI N45.2 and applicable N45.2 daughter standards. | 16

3. Requirements for supplier documents, such as instructions, procedures, drawings, specifications, inspection and test records, and supplier QA records to be prepared, submitted, or made available for purchaser review or approval

4. Requirements for the retention, control, and maintenance of supplier QA records

5. Provisions for purchaser's right of access to supplier's facilities and work documents for inspection and audit

6. Provisions for supplier reporting and disposition of nonconformances from procurement requirements

7. Requirement for the vendor to submit a copy of its QA program description

8. Requirements for the performance of maintenance receipt inspection checks where appropriate. | 9 Q421.34 | 11 Q421.4

9. Provisions for extending applicable requirements to lower-tier subcontractors and suppliers, including purchaser's access to facilities and records. | 16

Requisitions for equipment, components, or services deemed important to safety prepared at the plant are reviewed by the plant QA staff. Requisitions prepared by the Power Plant Engineering Department, Nuclear Fuel, System Engineering Department, and Nuclear Services ~~and Licensing~~ Department are also reviewed by the plant QA staff. The System Purchasing Department takes the information from the requisition and incorporates it into a purchase order. The System Purchasing Department coordinates a review of the purchase according to System Purchasing Department procedures. | 4 | 9 Q421.34 | 16

17.2.4.2 Procurement Document Preparation and Review of Procurement Documents. The sequence of preparation, review, approval, and issuance of procurement documents for equipment, components and services deemed important to safety is generally as follows: | 9 | 16

1. For items not requiring a specification, a member of the STP plant staff initiates a requisition form in accordance with the applicable plant procedure. | 4 | 16

2. For items requiring a specification, the appropriate engineering group in the Power Plant Engineering Department, Nuclear Fuel, System Engineering Department or Nuclear Services ~~and Licensing~~ Department develops the required specification and completes the requisition form in accordance with a departmental procedure. The specification | 4 | 16

receives the same level of review as the subsequently generated purchase order. | 16

3. The requisition is then routed to the Plant QA Supervisor for QA review. The QA review performed by the Plant QA staff is controlled by a Plant QA Procedure. This procedure provides for documentation of the review process and requires that the requisition include quality requirements that are correctly stated, inspectable, and controllable and that it contain adequate acceptance and rejection criteria. | 4 | Q421.13 | 16

4. After QA review, the requisition is returned to the Plant Superintendent or the manager of the originating department (or their respective designees) for final approval. | 2 | 4 | 9 | 16

5. The approved requisition is routed to the System Purchasing Department. System Purchasing will coordinate bidders list development, issuance of an inquiry or inquiries, and evaluation of bids with the applicable departments. During the evaluation of bids, the System Purchasing Department will review all departmental comments and ensure that they are incorporated in the purchase order, if necessary. | 16

6. After selection and approval of a vendor by all involved departments, a purchase order will be developed and distributed according to RMS procedures. The purchase order will be distributed to all involved departments for their files and to ensure that all necessary quality and technical requirements are incorporated in the order. | 16

The QA Department shall review all procurement documents to ensure that they are prepared, reviewed, and approved in accordance with QA program requirements. | 16

The System Purchasing Department procedure governing procurement documents requires that changes to procurement documents get the same review and approval as the original documents. | 16

17.2.4.3 Approval of Vendors. The procedures discussed in Subsection 17.2.4.1 ensure that procurement documents for ~~safety-related~~ items or services important to safety impose upon vendors the requirements to submit copies of their QA ~~manuals~~ program description with their bids. Suppliers of ~~safety-related~~ important to safety parts, material, components, or services are evaluated prior to award of a purchase order to ensure that they can meet procurement requirements. The supplier evaluation review is conducted according to a System Purchasing Department procedure. Part of the supplier evaluation review is a review of the supplier's QA ~~manual~~ program description by the HL&P QA Department. 16

The procurement procedures discussed in this section also control the procurement of spare and replacement items. The procedures require that procurement documents for replacement or spare items incorporate quality and technical requirements at least as stringent as those used in procuring the original equipment except where a documented engineering evaluation determines less stringent requirements to be acceptable within the limits of QA concurrence as described in Section 17.2.4.2. | 16

17.2.5 Instructions, Procedures, and Drawings

17.2.5.1 Provision of Procedures. Appropriate requirements have been established in the HL&P Nuclear QA Program Manual and Operations QA Plan to ensure that quality-related activities are controlled by documented instructions, procedures, and drawings. Specifically, the HL&P Nuclear QA Program establishes these requirements in the following manner.

1. The HL&P Nuclear QA Program Manual and Operations QA Plan require that each department within HL&P which performs quality-related work have a set of procedures which describes how quality-related work will be performed. Each set of procedures, including the Plant Procedures Manual and the Startup Manual, clearly delineates the sequence of actions to be accomplished in the preparation, review, and control of instructions, procedures, and, where applicable, drawings. Departmental procedures cover the following areas: design, procurement, warehousing, construction, installation, inspection, and auditing. The Plant Procedures Manual and the Startup Manual cover the following areas: procurement, warehousing, maintenance, modification, testing, inspection, and operation. The applicable procedures described above provide requirements that instructions and drawings comply with 10CFR50, Appendix B, criteria.

2. The Operations QA Manager or Plant QA Supervisor, as appropriate, reviews and approves departmental procedures and revisions thereto based on their compliance with the HL&P QA program, 10CFR50 Appendix B, and applicable federal regulations. This review and approval is documented and available for verification. Plant procedures are reviewed by the PORC and approved by the Plant Superintendent.

3. The Plant QA Staff and Houston QA perform periodic, scheduled audits of departments performing work deemed important to safety in order to verify proper implementation of departmental procedures. The Plant QA staff performs periodic audits and surveillance of plant activities to verify compliance with STP plant procedures. These audits are conducted by auditors whose qualifications are documented, using an audit procedure approved by the Operations QA Manager.

17.2.5.2 Provision of Acceptance Criteria. The procedures discussed in Subsection 17.2.5.1 receive a QA review. Department procedures are reviewed by the Operations QA Manager or Plant QA Supervisor, as appropriate. The Operations QA Plan will require that the plant QA staff review inspection plans, test, calibration, special process, maintenance, modification and repair procedures, drawings, and changes thereto. These QA reviews, performed by personnel whose training and qualification in the field of QA is documented, ensure, at a minimum, that the reviewed documents contain adequate quantitative and qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished.

17.2.6 Document Control

17.2.6.1 Control of Issuance and Revision. The Nuclear QA Program Manual, Operations QA Plan, and departmental procedures manuals contain a section or procedure on procedure preparation, review, approval, and issuance, and on manual accountability. These sections or procedures require that: | 16

1. Departmental procedures be reviewed and approved by the department manager and Operations QA Manager or Plant QA Supervisor as appropriate The Nuclear QA Program Manual and Operations QA Plan and revisions thereto require approval by the Executive Vice-President. | 4 Q421.27 | 4 | 2 | 16

2. Plant procedures important to safety ~~will~~ be reviewed by the PORC and approved by the Plant Superintendent.

3. Copies of revisions be sent to persons on the list of controlled copy holders.

4. Departmental procedure manual holders acknowledge, in writing, receipt and insertion of procedures and revisions thereto. | 9

Plant administrative procedures will be developed to cover the following areas: | 4

1. Preparation, review, approval, ~~issuance~~ and revision of plant procedures | 4 Q421.16

Insert B → 3/. Distribution of procedures, instructions, and drawings to assure that these documents are available for use at the location where the activity will be performed prior to commencing the work | 16

4/. Temporary changes to procedures

5/. Updating of procedure manuals

6/. Retention of plant records

Whenever a new revision to a document or drawing is issued, it is routed to holders of the previous revision. Document holders (or personnel updating manuals for document holders) are required to acknowledge receipt of the new revision in writing. | 16

The system also provides for master lists of the various types of documents which indicate the latest revisions of procedures, instructions, and drawings.

Documents which are subject to the administrative controls outlined in this section include: | 4

Insert B

2. Issuance of procedures, instructions, and drawings to assure that approved changes are included prior to implementing the change.

1. Departmental procedures
2. Nuclear QA Program Manual, Operations QA Plan, and plant QA procedures | 16
3. Plant procedures (operating, maintenance, technical, radiological control, training, testing, refueling, startup)
4. Plant drawings
5. Design documents - calculations, analyses, documents related to computer codes and specifications | 16
6. Procurement documents
7. Modification procedures

4 Q421.17

8. Manufacturing, inspection, and testing instructions
9. Test procedures
10. Design change requests
11. Nonconformance reports ~~and deviation notices~~ | 16

The requirement for controlled copy numbers is limited to:

1. Departmental procedures manuals
2. Nuclear QA Program Manual, Operations QA Plan, and Plant QA Procedures Manual
3. Plant Procedures Manual (operating, maintenance, technical, radiological control, training, testing, refueling, startup procedures) 4 | 16
4. Startup manual
5. Plant drawings

The FSAR is a licensing document that accurately reflects the design of the plant. Procedures control the development of revisions to the FSAR necessitated by design, construction or procedural changes. Proper issuance of FSAR revisions is assured by the development and maintenance of an FSAR Controlled Copy Holders List. | 16

17.2.6.2 Groups Responsible for Review and Approval. The managers of the various departments performing quality-related work (see Subsection 17.2.1.1.2) are responsible for reviewing and approving their departmental procedures and revisions thereto. | 4 Departmental procedures and revisions thereto are also reviewed and approved by the Operations QA Manager or the Plant QA Supervisor as appropriate, prior to issuance for use. | 16 Departmental procedures and revisions thereto are issued and controlled by the individual departments.

The Manager, QA, reviews the Nuclear QA Program Manual and reviews and approves the Operations QA Plan, and revisions thereto. The Executive Vice President reviews and approves the Nuclear QA Program Manual and approves the Operations QA Plan, and revisions thereto. The Manager, QA issues and controls the Nuclear QA Program Manual. The Operations QA Manager reviews and approves plant QA procedures, and revisions thereto. The Operations QA Manager issues and controls the Operations QA Plan and plant QA procedures. | 16

The Plant Superintendent is responsible for the approval, issuance and control of plant procedures, instructions, drawings, and revisions thereto. ~~Safety-related~~ important to safety Plant procedures are reviewed by the Plant Operations Review Committee prior to issuance for use. | 2 | 9

Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable. This review shall be performed by a member of a designated review group as an independent activity that is at least as rigorous as the initial procedure review. A revision to a procedure constitutes a review.

In order to ensure that procedures in current use provide the best possible instructions for performance of the work involved, systematic review and feedback of information based on use will be performed. Applicable procedures shall be reviewed following an unusual incident, such as an accident, an unexpected transient, significant operator error, or equipment malfunction. Applicable procedures shall be reviewed following any modification to a system. The above reviews are the responsibility of the cognizant supervisor controlling issue and revision of the procedure. | 16

Maintenance, modification and inspection procedures shall be reviewed by the responsible QA organization to determine:

a. The need for inspection, the identification of inspection personnel and the documentation of inspection results.

b. That necessary inspection requirements, methods, and acceptance criteria have been identified.

17.2.7 Control of Purchased Materials, Equipment, and Services

17.2.7.1 Assuring Conformance with Procurement Documents. The HL&P QA Program assures that material, equipment, and services deemed important to safety purchased by HL&P or contractors will conform to procurement requirements in the following manner: | 16

1. A list of approved suppliers is developed according to a System Purchasing Department procedure, and purchase orders are awarded only to approved suppliers. The evaluation of prospective suppliers is documented and based on one or more of the following: | 4 Q421.18 | 16

   a. The supplier's capability to comply with the applicable elements of 10CFR50, Appendix B

b. A review of previous records and performance of suppliers who have provided similar articles of the type being procured

c. A survey of the supplier's facilities and QA program to determine his capability to supply a product which meets the design, manufacturing, and quality requirements

2. For each applicable purchase order, a vendor surveillance plan is developed in accordance with a QA Department procedure. The vendor surveillance plan lists what surveillance, if any, is required in the vendor's facilities. The plan also specifies the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance; and the documentation required. The QA Department procedure on vendor surveillance requires that surveillance be performed where verification of procurement requirements cannot be determined upon receipt. | 16

3. For each purchase order, suppliers are required to furnish:

a. Documentation that identifies the purchased material or equipment and the specific procurement requirements met by the item | 4

b. Documentation that identifies any procurement requirements which have not been met together with a description of those non-conformances dispositioned as "accept as is" or "repair" | Q421.18

4. Receipt inspection of items important to safety (excluding nuclear fuel) is performed by Plant QA, Plant Maintenance, and the Stores Department (receiving warehouse) in accordance with their respective procedures. The Stores Department will be responsible for inspecting the shipment for damage prior to unloading. Plant QA will inspect for physical damage, documentation, cleanliness. Plant Maintenance will perform maintenance receipt inspection checks (dimensional checks, electrical checks, etc. if any, that are specified as receipt inspection checks in procurement documents for the affected item(s)). Plant QA shall witness all receipt inspection checks performed by Plant Maintenance and will verify completion of inspection activities performed by the Stores Department. Receipt inspection of nuclear fuel will be performed by plant personnel in accordance with plant procedures and will be subject to surveillance by Plant QA. | 9 Q421.34 | 11 Q421.41

These procedures provide inspection instructions and require:

a. Proper identification of the material, component, or equipment and verification that it corresponds with the receiving documentation.

b. Receipt of inspection records or certificates of conformance attesting to the acceptance of material, components, or equipment prior to release for use and forwarding of such records to the Records Management System.

c. Indication of inspection status on accepted items prior to release or storage in an accepted materials storage area.

d. Segregation, control, and identification of nonconforming items.

e. Periodic verification of supplier's certificates of conformance to assure that they are meaningful.

f. Timely processing of receipt inspections required by the procurement documents to be accomplished upon receipt. | 11 Q421.42

g. Verification that the manufacturer or supplier has complied with applicable handling, preservation, storage, cleaning, packaging or shipping requirements. | 16

5. Physical inspection/examination specified as receipt inspection checks in the procurement documents (dimensional checks, electrical insulation and resistance checks) are referred to in the HL&P QA Program as "maintenance receipt inspection checks." Maintenance receipt inspection check requirements, if any, are contained in the procurement documents for the affected item. | 11 Q421.41 Q421.1

6. The validity of supplier's certificate of conformance will be periodically evaluated by audits, independent inspections, or tests. | 16

The procedures discussed in this section comply with RG 1.123, Revision 1. | 2 Q421.2

17.2.7.2 Audits of Contractors. The HL&P QA audit program, discussed in Section 17.2.18, provides for scheduled audits of contractors performing important to safety ~~safety-related~~ work. These audits are scheduled on the HL&P audit plan, which is prepared by the Audits and Technical Services Group of the QA Department. Frequency of these audits is based on the safety, complexity, and quality of the item or service being furnished. | 16 | 16

requirements

17.2.8 Identification and Control of Materials, Parts, and Components

The design control documents discussed in Section 17.2.3 require that specifications and drawings include appropriate identification requirements for materials, parts, and components deemed important to safety. The receipt inspection procedure discussed in Subsection 17.2.7.1 requires that material, part, and component identification be checked against specification or drawing requirements during receipt inspection. This verification will ensure that material and item identification can be traced to the appropriate documentation, i.e., drawings, specifications, purchase orders, manufacturing and inspection documents, ~~deviation~~ nonconformance reports, and physical and chemical mill test reports. The receipt inspection procedure also requires verification that the method and location of the identification ~~do~~ does not affect the function or quality of the item being identified. | 16 | 16

Once materials, parts, and components important to safety are receipt inspected, except for nuclear fuels, they are turned over to the Stores Department for control and storage. The control, storage, and issuance of material, parts, and components important to safety is governed by Stores Department Procedure. These procedures require that proper identification be maintained during storage and that correct identification be verified and | 16 | 16

documented prior to release for fabrication, assembling, shipping, or installation. Plant procedures require that correct identification be verified and documented prior to installation. | 16

17.2.9 Control of Special Processes

Special processes are those that require interim in process controls in addition to final inspection to ensure quality. ~~including such special processes~~ include welding, heat treating, chemical cleaning and nondestructive examination. Welding, heat treating, and chemical cleaning performed onsite are controlled by plant procedures. Nondestructive examination is controlled by Operations QA NDE/ISI/PSI procedures. These procedures reference the applicable codes and standards, or the necessary requirements when they exceed those of existing codes and standards, and specify the following prerequisites for starting any work requiring special processes: | 16

1. There must be present, at the work ~~site~~ location, a copy of a process procedure qualified in accordance with applicable requirements. | 16

2. Qualification of the personnel and equipment involved must be in accordance with the appropriate code or standard, or specifically defined requirements exceeding the code or standard, and must be documented. | 16

3. The procedure shall provide for recording evidence of acceptable accomplishment of the special process. | 16

Periodic surveillance of work activities is performed by plant QA personnel using a checklist which references these prerequisites.

Onsite NDE that is required for in-process or final acceptance of maintenance or modification activities is performed by QA personnel, maintenance personnel and in some cases by contract personnel. The performance of such NDE is governed by an Operations QA NDE/ISI/PSI procedure which requires that: (1) all personnel, HL&P or contract, performing NDE be certified in accordance with RG 1.58, Revision 1~~A~~, and (2) all NDE procedures be qualified according to the appropriate code or standard. Qualification records of personnel, equipment, and procedures associated with special processes shall be established, maintained and kept current. | 12 | 16

Chemical cleaning of fluid systems is governed by plant procedures and conforms to the requirements of RG 1.37, Revision 0. | 12 | 16

Performance of special processes in vendors' facilities is controlled by requirements imposed by the procurement documents (see Section 17.2.4) and surveillance of these activities by HL&P or contract personnel (see Section 17.2.7).

17.2.10 Inspection

17.2.10.1 Inspection Program. The HL&P QA Program provides for an inspection program that meets the requirements of RG 1.30, Revision 0, RG 1.58, Revision 1~~A~~ and RG 1.116, Revision 0-R. This program is governed by Plant QA and QA Department procedures and inspections are performed by plant | 12 | 9 | 11 | 0424.41

(with the exception given in Section 17.2.2.1)

QA and QA Department personnel. These inspection procedures require that inspections be performed using applicable inspection instructions, drawings and specifications, and provide for the following: | 2 | 9

1. Identification of characteristics and activities to be inspected

2. Qualification requirements for the individuals performing the inspection

3. Acceptance and rejection criteria

4. A description of the method of inspection

5. Verification of completion and certification of the inspection, and a record of the results of the inspection operation

6. Identification of required procedures, drawings, specifications, and revisions.

7. Specifying the necessary measuring and test equipment including accuracy requirements and calibration due dates if applicable. | 16

Modifications, repairs, and replacements are inspected in accordance with the original design and inspection requirements.

Plant QA and other QA Department personnel performing inspections will be qualified in accordance with RG 1.58, Revision 2 (with the exception given in Section 17.2.2.1). The inspection procedures, check lists and personnel qualifications will be reviewed and approved by the plant QA Supervisor prior to implementation of the inspection program. | 2 | 9 | 11 Q421.41 | 16

When inspection of an item or activity is impossible or impractical, indirect control through monitoring of process methods, equipment, and personnel is used.

17.2.10.2 Mandatory Inspections. Onsite work of the type that would require mandatory hold points (maintenance, repair, replacement, etc.) is governed by plant procedures. These procedures are reviewed by plant QA personnel, and mandatory hold and witness points are inserted, where applicable. | 2 | 11 Q421.41

Hold points for work performed in vendors' facilities are listed on vendor surveillance plans (refer to Section 17.2.7).

17.2.10.3 Maintenance Programs. A maintenance program shall be developed to maintain structures, systems and components important to safety at the quality level required for them to perform their intended functions.

Maintenance shall be scheduled and planned so as not to compromise the safety of the plant. Planning shall consider the possible safety consequences of concurrent or sequential maintenance, testing or operating activities. Maintenance shall be performed in a manner which provides for required equipment to be available for the prevailing operating mode and shall include evaluation of the following: | 16

a. special processes to be used,

b. equipment and materials used in performance of the task,

c. potential hazards to personnel and equipment

General rules for development of maintenance procedures shall be specified by written procedure. This procedure is the basis for developing repair and replacement procedures at the time of failure. Approved procedures shall be available for repair of equipment important to safety prior to performance of such repairs.

A preventive maintenance program, including procedures as appropriate for structures, systems and components important to safety, shall be established and maintained which prescribes the frequency and type of maintenance to be performed. The program will be revised and updated, as necessary, as experience is gained with the equipment.

17.2.10.4 Control of Surveillance Testing and Inspection. A surveillance testing and inspection program shall be established to insure that structures systems and components important to safety will continue to operate, keeping parameters within normal bounds, or will act to put the plant in a safe condition if parameters exceed normal bounds.

Provisions shall be made for performing required surveillance testing and inspection, including inservice inspections. Such provisions shall include the establishment of a master surveillance schedule reflecting the status of all planned inplant surveillance tests and inspections. Frequency of surveillance tests and inspections may be related to the results of reliability analysis, the frequency and type of service, or age of the item or system, as appropriate. 16

Additional control procedures shall be instituted, as necessary, to assure timely conduct of surveillance tests and inspections and appropriate documentation, reporting, and evaluation of the results. Following the completion of testing, procedures shall be established to assure the return of systems to an operable status. These procedures shall include provisions for the documentation of authority, conduct, responsibility, and verification involved in returning the system to an operable status. Such provisions shall include the use of procedures, checklists, and independent verification as appropriate, considering the degree that the system status was altered during the performance of the test.

17.2.10.5 Radiation Control. Procedures shall be provided for the implementation of a radiation control program. The radiation control program involves the acquisition of data and provision of equipment to perform necessary radiation surveys, measurements and evaluations for the assessment and control of radiation hazards. Procedures shall be developed and implemented for quality assurance review of records and programs to insure the adequacy of measures taken to control radiation exposure to employees and others. Additionally, quality measures for ~~radwaste management~~ packaging and shipping radioactive materials shall be implemented in accordance with 10CFR71, Appendix E.

(with the exception given in Section 17.2.2.1)

17.2.11 Test Control

17.2.11.1 Test Program. A test program has been developed to control testing performed during the preoperational phase and operational phase to assure that structures, systems and components will perform satisfactorily in service. The preoperation test program is described in Chapter 14. The test control program meets the requirements of RG 1.30, Revision 0, RG 1.58, Revision 1, and RG 1.116, Revision 0-R. It includes Phase I, Phase II and Phase III Startup Tests; Technical Specification Surveillance Tests; tests during the design, fabrication and construction activities associated with plant modification; and the demonstration of satisfactory performance following plant maintenance and modification. Phase III startup testing is controlled by Phase III Startup Test Procedures; Technical Specification surveillance testing is controlled by Plant Surveillance Procedures; testing during the design, fabrication and construction activities associated with plant modification is controlled by engineering, vendor, constructor and/or plant maintenance procedures as appropriate; and testing related to the demonstration of satisfactory performance of structures, systems and components following repair, replacement and modification activities is specified in the procedures which govern these activities and controlled by post maintenance or modification test procedures or Plant Surveillance Procedures.

Testing of structures, systems and components during the operational phase shall be accomplished in accordance with written approved procedures. These procedures shall be based on original design and test requirements and acceptance criteria or properly approved acceptable alternatives. The Operations QA Plan will require startup and plant procedures that govern testing provide the following as necessary:

1. The requirements and acceptance limits contained in applicable design and procurement documents.
2. Instructions for performing the test, including prerequisites and caution or safety notes.
3. Sufficient detail that test operator interpretation is not required.
4. Provisions for data collection and storage.
5. Acceptance and rejection criteria.
6. Mandatory inspection hold points for witness by QA inspector (as required).
7. Provisions for assuring that test prerequisites have been met.
8. Provisions for control of jumpers, lifted leads, or safety tags.
9. Provisions for returning a system to normal configuration upon completion of the test.

10. Checklists, or other means, shall be used to verify and document that affected plant systems are arranged in their correct equipment and switch lineups, upon completion of the test. 16

Test procedures that assure that structures, systems and components important to safety perform satisfactorily in service will be reviewed by the PORC. The inspection program discussed in Section 17.2.10 provides for periodic inspection of testing activities.

17.2.11.2 Test Prerequisites. Plant procedures governing test procedure preparation require that test procedures list specific prerequisites where applicable for each test. 11 16

17.2.11.3 Data Recording, Evaluation, and Retention. Plant procedures governing test procedure preparation and conduct require that test procedures include requirements for data recording and provide for review and evaluation of test data by qualified, responsible supervisor personnel within the performing group and/or Technical Section engineering personnel. The plant procedures also require transmittal of test results to the Records Management System for storage. 11 16 Q421.37

(see subsection 13.1.2.2.3 and Figure 13.1-2)

17.2.11.4 Equipment Control. Permission to release plant systems or equipment for maintenance or surveillance tests shall be granted by the on-duty watch supervisor and controlled by plant maintenance or surveillance procedures. Procedures shall be provided for control of equipment, as necessary, to maintain personnel and reactor safety, to avoid unauthorized operation of equipment, and to ensure that operational equipment is in a ready status. These procedures shall require:

a. Control measures such as locking or tagging to secure and identify equipment in a controlled status and verification by a second qualified person of correct implementation of such measures.

b. Control measures to temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings. Included shall be a requirement for independent verification. (A log shall be maintained of the current status of temporary modifications.) 16

c. Control of inspection and test status on individual items by the use of markings such as stamps, tags, labels, routing cards or other suitable means.

d. When equipment is ready to be returned to service, operating personnel shall test the equipment as appropriate, and verify and document its functional acceptability after obtaining permission from the on-duty watch supervisor.

Equipment restoration will be verified by a second qualified person unless the functional testing will prove proper alignment of all devices without adverse affect on plant safety.

e. When traceability is required as determined by Engineering, the components/equipment shall be identified in such a manner that they can be traced to its associated documentation. | 16

17.2.12 Control of Measuring and Test Equipment

The plant procedure on measuring and test equipment control and the Operations QA procedure on calibration of NDE equipment establish a system for the control and calibration of measuring and test equipment issued for use in activities affecting quality at the plant. The procedures provide for the following: | 16

1. Identifying measuring and test equipment that require calibration, the required calibration frequency, the applicable specific calibration procedure, the group responsible for calibration, the set points and accuracy requirements for the item, the date of last calibration, the due date for the next calibration, and the current calibration status for each item (acceptable or rejected). | 16

2. Identification of each piece of measuring and test equipment with a unique serial number. This serial number is shown on calibration documentation for that particular piece of measuring or test equipment. Equipment shall be suitably marked to indicate calibration status. | 16 | 16

3. Calibration frequency, based on the required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement. | 4 Q421.22

4. Documented investigations to determine the validity of previous inspections and tests performed when measuring and test equipment is found to be out of calibration. | 16

5. A requirement for calibrating standards to have an uncertainty error of no more than one-fourth of the tolerance of the equipment being calibrated, unless the minimum uncertainty is limited by the state of the art. In these cases, standards shall have an accuracy that assures the equipment being calibrated will be within the required tolerance and that the basis of acceptance is documented and authorized by the responsible management. | 9 | 16

6. Traceability of reference and transfer standards to nationally recognized standards, and provisions for documenting the basis for calibration where national standards do not exist.

7. Repair or replacement of calibration, measuring, and test equipment consistently found to be out of calibration.

The method and interval of calibration for each installed instrument and control device shall be defined and shall be based on the type of equipment, stability and reliability characteristics, required accuracies and other conditions affecting calibration. | 16

17.2.13 Handling, Storage, and Shipping

Special handling, preservation, storage, cleaning, packaging, and shipping requirements are specified in procurement documents for ~~safety-related~~ important to safety parts, material, and equipment to preclude damage, loss, or deterioration by environmental conditions such as humidity.

A Stores Department procedure on equipment storage and control governs the storage and issuance of parts, material, and equipment important to safety. This procedure requires periodic surveillance of stored items by the plant maintenance group or user group to verify any specific protective environmental requirements for particular equipment that may be in effect. This procedure also requires that suitably trained individuals (relative to handling, storage and shipping) be responsible for handling, storage, and shipping of these items.

Provisions for the storage of chemicals, reagents, lubricants and other consumable materials which will be used in conjunction with ~~safety-related~~ important to safety systems will be governed by administrative procedures.

Specific written procedures for handling, storage, packaging, shipping, and preservation of critical, sensitive, perishable or high value articles are provided. Special handling tools and equipment are inspected and tested periodically to verify adequate maintenance.

The QA surveillance program also provides for routine surveillance of stored items to verify compliance with storage requirements.

The overall program for control of handling, storage, and shipping complies with RG 1.38, Revision 2.

17.2.14 Inspection, Test, and Operating Status

The indication of inspection, test, and operating status of structures, systems, and components will be governed by plant procedures, plant QA procedures and Operations QA NDE/ISI/PSI procedures. These procedures will be reviewed by the PORC. These procedures will provide the following:

1. Identification of the inspection, test, and operating status of structures, systems, and components.

2. Control of the application and removal of inspection and welding stamps and status indicators, such as tags, markings, labels, and stamps.

3. Identification of the status of nonconforming, inoperative, or malfunctioning structures, systems, or components to prevent inadvertent use.

4. Methods to control altering the sequence of required tests, inspections, and other operations important to safety are subject to the same controls as the original review and approval.

5. Administrative control of nondestructive examination reports and/or status indicators.

6. Verification of the application of welding stamps. | 9 Q421.36

7. Administrative control of reject and hold tags used in the plant.

The program established at the plant by the plant procedures, plant QA procedures and QA Department procedures will function according to the following general description. | 9

Inspection and Test Status

Each cognizant plant supervisor will be responsible for assuring that necessary inspections or tests are conducted in his area of responsibility and that the status of these inspections or tests is complete or current. This also applies to NDE/ISI status and marking control by the QA Department. | 9

The cognizant watch supervisor will be responsible for maintaining sufficient knowledge of tests or inspections in progress to control the overall plant operation. Personnel performing tests or inspections will keep the watch supervisor or control room operator advised of the current status of tests or inspections in progress which may affect plant operations. | 9

Records of inspections and tests are ultimately maintained in the permanent records storage facility.

Operating Status

The operating status of systems, structures, and components that are in the process of maintenance, modification, or refueling is controlled by a tagging system. These systems, structures, and components are tagged by the plant operators under the direction of the watch supervisor to prevent inadvertent operation. | 9 | 1

Receipt Inspection Status

Upon satisfactory completion of receipt inspection at the plant, the QA receipt inspector affixes an identification tag to acceptable material, equipment, and parts. The placement of the identification tag on quality-related items indicates conformance to purchase order/contract requirements. | 16

Nonconforming material, equipment, and parts are identified with a plant QA hold tag in accordance with the requirements specified in Section 17.2.15. | 9 | 11 Q421.43

Nonconformance in the Plant

Nonconforming installed equipment is identified with a quality control hold tag in accordance with the requirements of Section 17.2.15. | 9

Offsite Inspection Test and Operating Status

The program for control of inspection, test, and operating status indication of offsite activities will function generally as follows. | 11 Q421.51

Each supplier of quality-related items denotes that the status of required inspections or tests, as defined in the procurement documents, is complete or current throughout the manfacturing process.

Houston QA vendor surveillance personnel or their consultants perform selective surveillance/inspections as required by the procurement documents to verify adherence to inspection and test status requirements during the manufacturing cycle at the supplier's shop. | 16

17.2.15 Nonconforming Materials, Parts, and Components

17.2.15.1 General. A system for control of nonconforming materials, parts, and components is established by Stores Department and plant procedures on nonconformance control and by plant QA procedures on nonconformance control. | 2 | 16

Plant QA procedures provide measures for the control of nonconforming material or nonconforming activities and serve as a basis for notification to responsible organizations or suppliers, as applicable. Material, parts, and components that deviate from approved specifications, codes, drawings, or other applicable documents are considered as nonconforming. They are clearly identified with appropriate quality control hold tags to indicate their unacceptable status, and if possible they are segregated until the nonconformance is properly dispositioned. These actions are taken to prevent the inadvertent use or installation of nonconforming material, parts, or components.

QA procedures also provide measures to control further processing or delivery of nonconforming or defective items found at a supplier facility pending a decision on ~~final~~ disposition. When a contractor, supplier or service organization identifies a nonconforming item and recommends a "use as is" or "repair" disposition, HL&P concurrence with the disposition is required. Measures shall be established to ensure that the acceptability of the nonconforming item is properly documented. | 16

Nonconforming material, parts, and components may be installed after the effect of their installation has been evaluated and the evaluation has been approved by the Plant Superintendent. Nonconforming items which may not be installed are those which because of their makeup and intended use cannot be returned to their original state after being installed (i.e., chemicals, weld rod, concrete) and those which if installed in and subsequently removed from a system, structure, or component would cause a degradation of that system, structure, or component. Except for proof testing, installed nonconforming items are not energized, used, or placed in service until the action required by the disposition has been completed and, when appropriate, reinspected. | 9 | 16

Rework or repair of material, parts, components, systems, or structures, whether onsite or offsite, is reinspected to inspection criteria at least as stringent as those applied to the original work. Results of the inspection, together with the rework or repair instructions, are documented.

Nonconforming activities are identified and systematically reported through inspection, surveillance, or audit activities by plant personnel including the plant QA staff. Each member of the plant staff has the authority and responsibility to report conditions adverse to quality to his supervisor or personnel of the plant QA staff.

The Plant QA Supervisor and QA staff may suspend any work on important to safety ~~safety-related~~ items, with the exception of a reactor startup or power generation, when the situation is, or is suspected to be, adverse to quality. Nonconformances which appear to warrant suspending a reactor startup or power generation are reported to the Plant QA Supervisor or Plant Superintendent, as appropriate. | 16

17.2.15.2 Nonconformance Report (NCR). An NCR is required for quality-related items and activities which do not conform to the specified requirements under the following circumstances: | 16

1. When deficiencies, including document deficiencies, are detected.
2. When defects are found during installation
3. When the identification of an item is lost or illegible
4. Procedures do not conform to prescribed requirements.
5. Approved controlled documents, specifications, drawings, procedures, etc. are violated.

| 16

An NCR is originated by the plant staff or by the plant QA staff to document nonconforming material, equipment, or parts detected during inspection, surveillance, or review activities.

The NCR identifies the nonconforming item, describes the nonconformance, the disposition of the nonconformance as applicable, the inspection requirements, and the recommended corrective action, and includes signature approval of the disposition. | 2

The disposition (i.e., rework, repair, use as is, scrap) of an NCR is recommended by the cognizant plant supervisor. Those nonconformances which are classified as "use as is" or "repair" are referred to the cognizant engineering group for engineering evaluation. The disposition and recommended action are then reviewed by the Plant QA Supervisor and approved by the Plant Superintendent prior to initiating the disposition. | 4 Q421.24 Q421.25 | 9 Q423.3 | 16

If the disposition requires that the item be returned for correction of the nonconformity, the System Purchasing Department shall be notified. The System Purchasing Department will in turn notify the appropriate vendor of such action and advise the using department as to the details required for preparing a Material Return Authorization (MRA). | 16

The Plant QA Supervisor maintains an NCR status log to aid in expediting disposition, approval, and corrective action followup.

The quality control hold tags are removed only when authorized by the Plant QA Supervisor or designated inspector.

Periodically , the Plant QA Supervisor analyzes nonconformances ~~and deviations~~ to detect trends which may not be apparent through day to day observation and forwards the results to the Plant Superintendent and the Operations QA Manager. | 16

17.2.16 Corrective Action

17.2.16.1 Identification and Correction. The HL&P Nuclear QA Program provides for identification and correction of conditions adverse to quality. The NCR discussed in Section 17.2.15 is the primary method of identifying and documenting conditions adverse to quality. | 16 | 16

NCR's identify conditions adverse to quality in systems, components, and equipment. The action required for the disposition of an NCR is documented on the NCR form. The plant QA staff tracks the status of all NCR's by means of an NCR status log. | 1

NCR's identify conditions adverse to quality in plant activities. Corrective action for problems identified by NCR's are determined by the cognizant plant supervisor on the NCR form and are reviewed by the Plant QA Staff. The Plant QA staff verifies satisfactory completion of the corrective action by reinspection or audit. Unacceptable completion of corrective action, as determined by the Plant QA staff, requires further action by the responsible supervisor and may result in suspension of the ~~nonconforming & corrective~~ activity. Disputes over corrective action should be resolved by the Plant QA Supervisor. | 16 | 9 | 16

Corrective action documentation shall include at least documentation of the cause, and the action taken to correct and to preclude the recurrence of similar conditions adverse to quality. | 2 | 16

17.2.16.2 Significant Conditions Adverse to Quality. The plant QA procedures which govern NCR's require that the Plant QA Supervisor review each NCR to determine if the condition is significant enough to warrant notification of offsite management and the Operations QA Manager. If the Plant QA Supervisor determines that a condition requires reporting to offsite management, he immediately contacts the Plant Superintendent to obtain concurrence. In the event of a dispute between the Plant Superintendent and the Plant QA Supervisor regarding the significance of a condition, the Plant QA Supervisor will notify the Operations QA Manager, who will settle the dispute at an appropriate level of management. The Manager, QA, evaluates significant conditions to determine if they are possibly reportable under 10CFR21. Those conditions that are evaluated as possibly reportable are processed in accordance with a Nuclear Operations Department procedure. | 16 | 16 | 9 | 16

Conditions that are evaluated as significant by the Plant QA Supervisor are indicated as such by a check mark in the appropriate space on the NCR. Significant conditions adverse to quality will be reviewed by the PORC. The Plant QA Supervisor will issue a "stop work" on the activity if he deems it necessary. | 9 | 16 | 9

17.2.17 Quality Assurance Records

17.2.17.1 Sufficiency of Records. The HL&P QA Program provides measures to assure that sufficient records are maintained to furnish evidence of activities affecting quality. This program of QA records control meets the requirements of RG 1.88, Revision 2. | 2

To assure that the proper documents are identified as QA records and properly stored, the Operations QA Plan will include a list of those documents which are defined to be QA records. This list gives the retention time for each document, with retention time being consistent with applicable codes, standards, and procurement documents. The list includes, but is not limited to: plant history; operating logs; records of principal maintenance and modification activities; abnormal occurrences; results of reviews, inspections, tests, audits, and material analysis; monitoring of work performance; qualification of personnel, procedures and equipment; drawings, specifications, procurement documents, warehousing documents, calibration procedures, and reports; and nonconformance reports. Plant administrative procedures identify those QA records that are required to be transmitted to the Records Management System for input into the automated records management system. | 16

The forms used to document tests and inspections are prescribed by plant administrative procedures and QA Department procedures. These procedures are reviewed and approved as discussed in Section 17.2.5. to ensure that they provide for the listing of: | 2 | 9

1. Type of operation

2. Inspector or data recorder

3. Results

4. Acceptability

5. Action taken in connection with any deficiencies noted

6. Sufficient information to permit identification of the record with the item or activity to which it applies

17.2.17.2 Record Identification and Retrievability. To ensure that QA records are identifiable and retrievable, the Records Management System has developed a computerized records management system. This system provides for a unique alphanumeric identification code affixed to each document. Registers are provided which list all QA records and their identification codes. The system provides the ability to cross-reference the identification code with other possible identifiers of the document (i.e., specification number, purchase order number, class-bin number, equipment name). QA records are stored on photographic media; the file location of any document is available from the computer. | 16 | 16

The activities of the Records Management System are governed by Department procedures approved by the ~~Manager, Project Management~~ Project Services Manager. | 16

17.2.17.3 Protection of Records. QA records will be stored in a permanent records storage facility which meets the requirements of RG 1.88, Revision 2. | 2

17.2.18 Audits

The HL&P QA Program provides for a system of comprehensive, planned, and periodic audits to verify compliance with the aspects of the QA Program. The audit program is formally established by the Nuclear QA Program Manual and Operations QA Plan and is controlled by QA Department procedures and plant QA procedures. | 16

The procedures require that the audit program include objective evaluation of:

1. Work areas, activities, processes, and items
2. Documents | 16
3. Quality-related practices, procedures and instructions
4. Implementation of quality-related practices, procedures, and instructions

The following areas are included in the scope of the audit program: | 4 Q421.25

1. Operation, maintenance, and modification
2. Preparation, review, approval, and control of designs, specifications, procurement documents, instructions, procedures, and drawings
3. Receiving and plant instructions
4. Indoctrination and training programs
5. Implementation of operating and test procedures
6. Calibration of measuring and test equipment
7. Corrective action and nonconformance control.
8. Performance of the plant staff, including training records and supervisory evaluations. | 16
9. Startup testing and administrative controls.

The QA Department and Plant QA Procedures that control the conduct of audits require periodic review of audit data by either the Supervisor, Audits and Technical Services or the Plant QA Supervisor. Quality trends identified during these reviews are reported to Management. Audit reports include a statement of the effectiveness of that portion of the QA Program that was audited. | 4 | 16 Q421.25

The implementation of a comprehensive system of planned and periodic audit functions is the responsibility of the Manager, QA. This comprehensive system provides for audits of operational phase activities with a frequency commensurate with their safety significance and in such a manner as to assure that all functions important to safety are audited within a period of two years. As a minimum, the audit program shall provide for audit of the following elements at the frequencies given below:

a. The results of actions taken to correct deficiencies that affect nuclear safety and occur in facility equipment, structures, systems, or method of operation - at least once per six months.

b. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions - at least once per twelve months. 16

c. The performance, training, and qualifications of the facility staff including training records and supervisory evaluations - at least once per twelve months.

Periodic review of the audit program shall be performed by the independent review body or by a management representative at least semi-annually to verify that audits are being accomplished in accordance with the requirements of the QA Program.

The Supervisor, Audits and Technical Services is responsible for HL&P external audits of contractors, suppliers, and service organizations and for HL&P internal audits of the plant staff, HL&P support organizations and plant QA activities. 16

The Plant QA Supervisor is responsible for plant audits to determine compliance with plant procedures and the Security Plan. The Audits and Technical Services Group performs HL&P internal audits to determine the adequacy and effectiveness of the activities performed under the Operations QA Plan. 16

Audit personnel are provided appropriate training to assure competence for perfoming the required audits. Proficiency of audit personnel is maintained by one or more of the following methods:

1. Regular, active participation in the audit process

2. Review and study of codes, standards, procedures, and instructions

3. Participation in training or orientation programs

Audit personnel are qualified in accordance with a written procedure.

17.2.18.1 Plant QA Audit Program 16

The Plant QA Supervisor is responsible for the audit program, as conducted by the plant QA staff, to verify and evaluate that plant activities are complying with all aspects of the QA Program onsite.

The activities audited include those described in the Plant Procedures Manual, including administrative procedures, maintenance procedures, operating procedures, and test procedures, as may be applicable to those structures, systems, or components that prevent or mitigate the consequences of postulated accidents.

Plant QA audits are conducted using a prepared checklist which details the various parameters to be evaluated. | 16

Prior to the performance of the audit, the auditors notify the responsible supervisor as to the detail and the scope of the audit and the support required from the organization being audited.

Upon completion of the audit, a postaudit conference is conducted with the responsible supervisor, during which time details of the audit are discussed, including items requiring corrective action.

In the event a deficiency and/or nonconformance is discovered that could affect the safe operation of the plant, it will be immediately brought to the attention of the Plant Superintendent.

Distribution of the audit reports includes the Executive Vice-President, the Plant Superintendent, the Manager Nuclear Operations, the Manager, QA, and the direct management of each group or activity audited. | 16

Appropriate followup by the plant QA staff, including reaudits, is made to determine that deficiencies and/or nonconformances are effectively corrected and that corrective action precludes repetitive occurrences.

The dates for nuclear plant audits by the plant QA staff are scheduled by the Plant QA Supervisor, based on the status and safety importance of the activity, to assure conformance with the Operations QA Plan. The actual date of the audit must comply with the specified minimum frequency requirements, and the following criteria are considered for modifying the frequency and determining the date of the audit:

1. When it is suspected that the safety, performance, or reliability of an item is in jeopardy due to deficiencies and nonconformances with respect to the QA Program.

2. When it is considered necessary to verify implementation of required corrective actions.

17.2.18.2 Houston QA Audit Program

HL&P internal audits of offsite and onsite activities are conducted by Houston QA to determine, through independent evaluation, the adequacy of and compliance with the QA Program. | 16

Each internal audit is conducted using a prepared checklist which details the various parameters to be evaluated.

Prior to the performance of the audit, the auditors conduct a preaudit conference with responsible management to detail the scope of the audit and the support required from the organization being audited.

Upon completion of the audit, a postaudit conference is conducted with the responsible management, during which time details of the audit are discussed, including items requiring corrective action.

Distribution of the audit report includes the Executive Vice-President; Vice-President, Nuclear Engineering and Construction; Manager, Nuclear Operations; Manager, QA; STP Plant Superintendent; Operations QA Manager; Plant QA Supervisor and the direct management of each group or activity audited. Appropriate followup by Houston QA is made to determine that deficiencies or noncompliances have been effectively corrected.

The Audits and Technical Services Group of QA performs periodic audits of contractors, suppliers, and service organizations to verify and evaluate their QA programs, procedures, and activities to assure that they are meaningful and are effectively complying with the QA Program and procurement requirements. In addition, Houston QA verifies that contractors, suppliers, and service organizations review and audit the QA programs of their suppliers.

The audit personnel normally are members of the Audits and Technical Services Group. The Manager, QA, may utilize members of the various HL&P engineering disciplines, operations personnel, or an outside consultant to supplement the Audits and Technical Services Group personnel in the performance of audits and to provide expertise in the particular activity that is being audited. 16

The findings of audits are reported to the Manager, QA, to the contractor, supplier, or service organization QA manager, and to the HL&P Executive Vice-President.

Appropriate followup, including reaudits, is made to determine that nonconformances have been effectively corrected and that the corrective action precludes repetitive occurrences.

The minimum frequency for the performance of an audit of a particular activity is established based on the status and safety importance of the activity to assure conformance with the QA program.

The dates for audits are scheduled by the Supervisor, Audits and Technical Services Group, to meet the requirements of the audit plan. The actual date of the audit must comply with the specified minimum frequency requirements, and modifying the frequency and determining the date of the audit is considered:

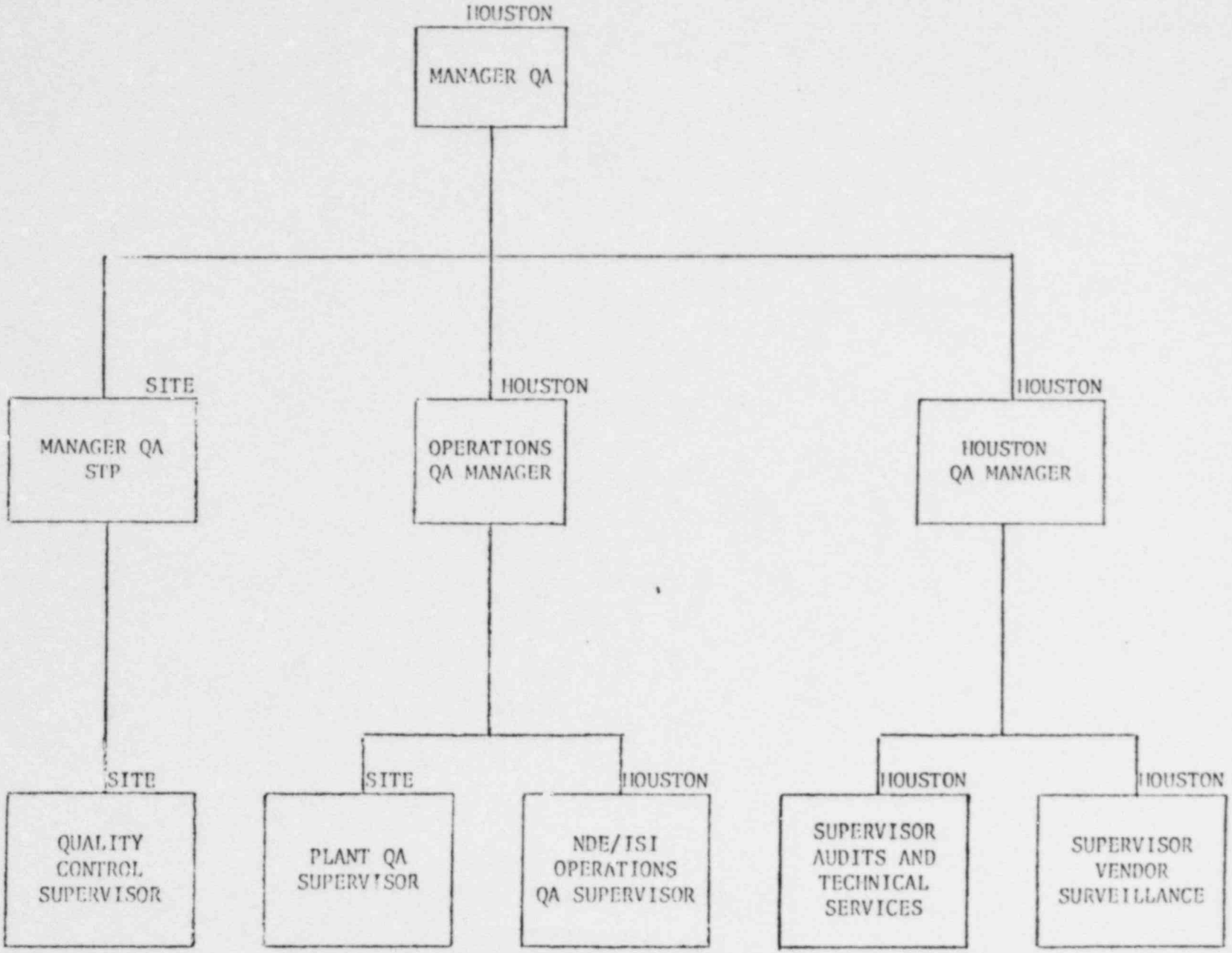
1. When it is necessary to determine the capability of the QA program of the contractor or supplier prior to awarding of a contract.

2. When significant changes are made in the QA programs of contractors or suppliers.

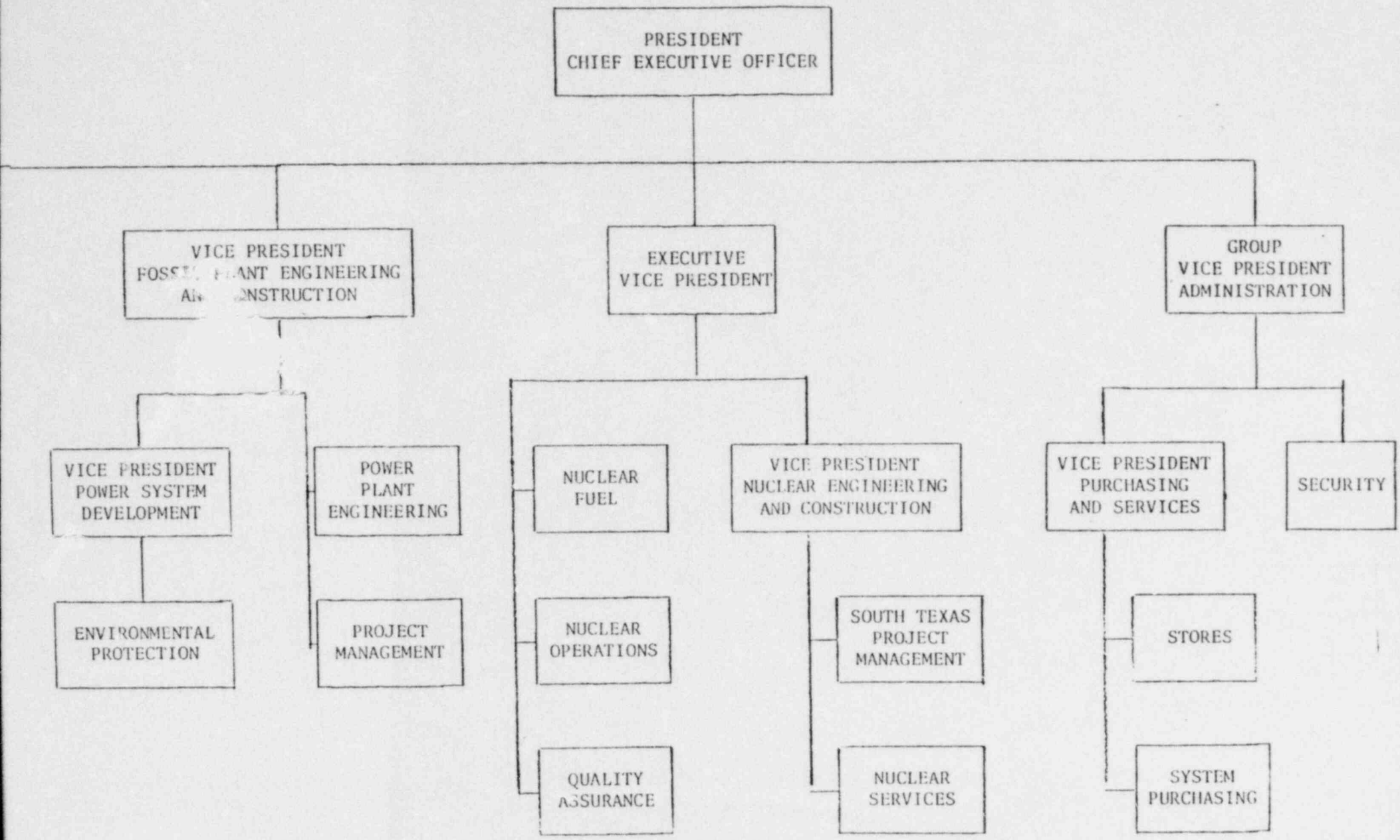
3. When it is suspected that the safety, performance, or reliability of an item is in jeopardy due to deficiencies and nonconformances with respect to the cognizant organization's QA program.

4. When it is considered necessary to verify implementation of required corrective actions. 16

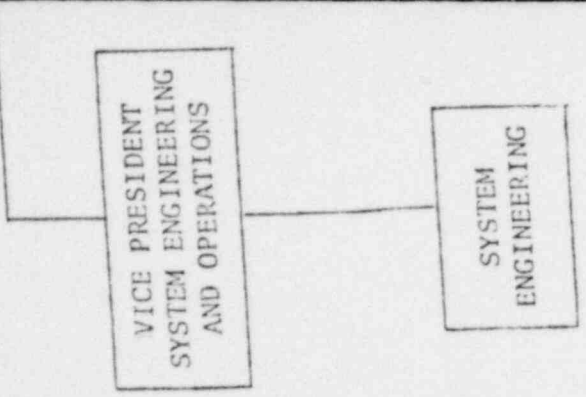
The audit schedule indicates the activity to be audited and the minimum frequency, and assigns the primary responsibility for the performance of the audit. Periodically, the audit plan is reviewed and revised as necessary to assure that coverage and schedule reflect the current activities.



SOUTH TEXAS PROJECT
UNITS 1 AND 2
HL&P QA ORGANIZATION
FIGURE 17.2-1



See Figure 17.2-1



HL&P CORPORATE
ORGANIZATION CHART
FIGURE 17.2-3