MIDDLE SOUTH UTILITIES SYSTEM

LOUISIANA POWER & LIGHT COMPANY

DESIGN, PROCUREMENT AND CONSTRUCTION PHASE

2

QUALITY ASSURANCE MANUAL

LP&L W-3 RECORDS

UNCONTROLLED COPY

DO NOT USE IN ANY SAFETY-RELATED TESTING, MAINTENANCE, OR OPERATIONAL ACTIVITY

LOUISIANA POWER & LIGHT COMPANY

142 DELARONDE STREET

NEW ORLEANS, LOUISIANA 70174

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

RECEIPT ACKNOWLEDGEMENT

Date

File:

TO: Mr. A. E. Henderson, Jr.
Quality Assurance Manager
Louisiana Power & Light Company
142 Delaronde Street
New Orleans, Louisiana 70174

FROM: (Name - Copy No. - Address Label)

SUBJECT: LP&L Quality Assurance Manual

By this letter, I acknowledge receipt of the revised section(s) of the LP&L Quality Assurance Manual (Manual) transmitted by LPL _____ dated _____. Superseded and outdated pages were removed before the new Table of Contents and the revised sections were inserted into my controlled copy of the Manual.

2

_____
Signature of Manual Holder Date

MIDDLE SOUTH UTILITIES SYSTEM

Current

QUALITY ASSURANCE

QUALITY REQUIREMENT CHANGE NOTICE (QRCN)

No. Foreword

Rev. 0 QRCN# 1

Effective Date 4/5/82

Page 1 of 1

Page No.	Page Rev. No.	Section / Paragraph	Description of Change
1of3	0	Foreword	In first paragraph of Foreword in the Preoperational and Operations Phase section of QA Manual change Appendix A to Table 2-1 of QR 2.0. In fourth paragraph of same Foreword change Station Superintendent to Plant Manager - Nuclear.

Reason For Change: (1) To correct an error in location of summary of requirements.
(2) To update title of Plant Manager - Nuclear.

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
	Thomas F. Gerrits	G.D. McFarlane		
Date 1/4/82	QA Manager Date 1-11-82	Date 3/10/82	Date	Date

LOUISIANA POWER & LIGHT COMPANY POLICY STATEMENT

DESIGN, PROCUREMENT AND CONSTRUCTION PHASE

QUALITY ASSURANCE PROGRAM

It is the policy of Louisiana Power & Light Company (LP&L) that the LP&L Quality Assurance Program (Program) for the design, procurement, fabrication and construction of LP&L's nuclear generating station(s) shall comply with the requirements of Appendix B to 10CFR50 and shall follow the guidance of WASH 1283 (dated 5/24/74) and WASH 1309 (dated 5/10/74). 2

The LP&L Quality Assurance Manual (Manual) is the basis of the LP&L Quality Assurance Program. The Manual outlines the responsibilities of LP&L personnel and the responsibilities of LP&L's major contractors during the design, procurement, fabrication and construction phases of the nuclear project(s). 2

The position of Vice President-Power Production is the highest level of corporate management responsible for establishing Quality Assurance policies, goals and objectives. 2

The Nuclear Project Manager shall be responsible for nuclear project functions other than Quality Assurance Group functions, and for developing and implementing safety-related programs, Quality Procedures and Quality Instructions which shall be used by the Nuclear Project Group.

The Quality Assurance Manager shall have the authority and responsibility for developing, coordinating and implementing the LP&L Quality Assurance Program. Quality Assurance Engineers shall assist the Quality Assurance Manager by aiding other LP&L groups in their development of safety-related programs and Quality Procedures by presenting Quality Assurance training and indoctrination programs, and by performing audits and surveillance of individuals and organizations responsible for implementing requirements of the Program in order to verify compliance with requirements of the Program. 2

The Quality Assurance Committee (QAC) shall be responsible for resolving disputes, for reviewing LP&L Quality Assurance Program policies and activities and for following-up QAC recommended actions to assure compliance. The Quality Assurance Committee shall deliberate on Quality Assurance problems, shall be cognizant of the Quality Assurance programs and changes thereto, and shall make recommendations, act as an advisor to, and report through its chairman to, the Vice President-Power Production. The Quality Assurance Committee may communicate directly with the Vice President-Power Production. 2

Implementation of this corporate policy is imperative in order to achieve the safety and reliability which is required at our nuclear generating station(s). Individuals and organizations involved in safety-related activities shall be responsible for assuring the quality of their work and for complying with the requirements of the Program.

The requirements contained in quality policies, Quality Procedures and Quality Instructions and the LP&L Quality Assurance Manual are mandatory and must be implemented, enforced, and adhered to by LP&L individuals and organizations engaged in safety-related activities. 2

LP&L Quality Assurance Program

Approved By:

D L Aswell 10/10/78

D. L. ASWELL DATE

VICE PRESIDENT-POWER PRODUCTION 2

This LP&L Quality Assurance Manual (Manual) is assigned to the addressee, however, it remains the property of Louisiana Power & Light Company (LP&L) and shall be returned to LP&L upon request. 2

Revisions to the Manual shall be issued as required for effective implementation of quality assurance policies and requirements. Requests for revisions to the Manual shall be directed in writing to LP&L, attention of the Quality Assurance Manager.

The Quality Assurance Manager shall be responsible for controlling the issuance and maintenance of the Manual. He shall assure appropriate reviews and approvals of revisions to the Manual and shall maintain a listing of controlled Manual assignees.

Individuals assigned controlled copies of the Manual shall be responsible for maintaining their copies of the Manual in accordance with the following procedure:

a) For each revision, holders of controlled copies of the Manual shall be sent copies of the new Table of Contents and the revised pages by transmittal letter.

   When a revision is received, superseded and outdated pages shall be removed before inserting the new Table of Contents and revised pages into the holder's manual. The superseded and outdated pages may be destroyed.

b) The transmittal letter shall have an attached "Receipt Acknowledgement" form which must be removed from the letter, signed and dated by the holder, and returned to LP&L to verify the holder's receipt of the revision. The transmittal letter shall be retained by the holder by inserting the letter behind the "Issuance and Maintenance Policy" statement in the holder's copy of the Manual.

Recommended forms for the transmittal letter and the "Receipt Acknowledgement" precede the "Record of Revisions" in the Manual.

c) Requests for copies of the LP&L Quality Assurance Manual or questions concerning the Manual shall be directed to the LP&L Quality Assurance Manager in writing.

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

NOTICE OF LP&L PREOPERATIONAL QUALITY ASSURANCE MANUAL REVISION

Date

TO: (Name-Copy No.-Address Label)

LPL:

FILE:

SUBJECT: LP&L Quality Assurance Manual

FROM: Mr. A. E. Henderson, Jr.
Quality Assurance Manager
Louisiana Power & Light Co.
142 Delaronde Street
New Orleans, La. 70174

Please insert the following attached Table of Contents and revised sections into your controlled copy of the LP&L Quality Assurance Manual (Manual) after removing superseded and outdated pages. You may destroy the superseded and outdated pages.

We request that you complete and return the attached "Receipt Acknowledgement" form to the addressee. Please insert and retain this transmittal letter behind the "Issuance and Maintenance Policy" in your copy of the Manual.

Title No.	Revision No.	Description

Revision of the LP&L Quality Assurance Manual
Approved By:

Quality Assurance Manager Date

Vice President-Power Production Date

RECORD OF REVISIONS

Rev. No.	Description	Effective Date
0	Initial Issue	1-1-75
1	This revision to the Manual reflects LP&L organizational changes and changes which were incorporated into the document prepared as the "Preoperational Topical Report, Amendment No. 1".	5-12-77
2	This revision reflects LP&L organizational changes, a title change and deletion of preoperational and testing requirements. (Preoperational testing is covered in the Operation Manual). Added 10CFR21 requirements.	10-10-78

The goal of Louisiana Power & Light Company (LP&L) is to implement a quality assurance program for LP&L's nuclear generating station(s) which assures that safety-related activities are performed in a controlled manner and are documented to provide objective evidence of compliance with the regulations and guidance of the Nuclear Regulatory Commission (NRC).

The LP&L Quality Assurance Program (Program) for the design, procurement, fabrication and construction of LP&L's nuclear generating station(s) shall comply with the requirements of Appendix B to 10CFR50, and shall follow the guidance of the documents which are listed in Table 2-1, except where alternate conditions are stated in the PSAR for a particular project. 2

For the nuclear generating station(s), LP&L shall assign responsibility for design, procurement, fabrication and construction of safety-related items to major contractors. LP&L's major contractors shall implement design, procurement, fabrication and construction requirements with written procedures. 2

Since LP&L assigns design, procurement, fabrication and construction responsibilities to external organizations, LP&L will be primarily concerned internally with implementing the requirements of the following criteria of Appendix B to 10CFR50: Criterion I - "Organization", Criterion II - "Quality 2

Assurance Program", Criterion V - "Instructions, Procedures, and Drawings", Criterion VI - "Document Control", Criterion XVI - "Corrective Action", Criterion XVII - "Quality Assurance Records", and Criterion XVIII - "Audits".

LP&L accepts full responsibility for LP&L's nuclear generating station(s) and will take the necessary actions to assure that the nuclear facilities are designed and constructed in accordance with sound engineering principles and practices. Structures, systems and components affecting the safety of LP&L's nuclear generating station(s) will be designed, specified fabricated, installed and tested in accordance with applicable codes, standards, specifications, drawings and procedures. LP&L and its major contractors shall implement the LP&L Quality Assurance Program in order to assure that safety-related activities are performed in a controlled manner and are documented to provide objective evidence of compliance with NRC regulations and gudiance.

LP&L's Quality Assurance Program is a three level system divided into the following broad categories:

a. Level I - Inspection and Test.

b. Level II - Surveillance.

c. Level III - Auditing.

Level I - Inspection and Test (Quality Control).

The quality assurance activities of Level I, Inspection and Test, shall be performed by vendors and construction contractors who are responsible for providing appropriate quality control procedures, systems, and inspection personnel. LP&L's vendors and construction contractors shall be required to verify that safety-related items released to LP&L are in compliance with the appropriate specifications, drawings, and/or other requirements to which they have committed.

Level II - Surveillance.

Responsibility for the quality assurance activities of Level II, Surveillance, shall be delegated to LP&L's major contractors who in turn may delegate applicable protions to their suppliers. Level II quality assurance activities are subdivided into two phases.

The first phase involves the design and procurement cycles of the major contractors wherein design calculations are checked and specifications, drawings and procurement documents are reviewed to assure proper incorporation of applicable codes, quality assurance requirements, and regulatory requirements. The checking and reviewing shall be performed by individuals or groups other than the individuals who are directly responsible for generating the documents.

In the second phase, the quality assurance programs, procedures and activities of vendors and construction contractors shall be reviewed, observed or inspected by the purchaser or his designated representative for the purpose of verifying that an activity has been accomplished in accordance with the appropriate design document, specification, drawing, or contractual agreement.

During the construction phase, LP&L shall perform surveillance of the safety-related activities of the site contractors and/or consultants.

Level III - Auditing.

The quality assurance activities of Level III, Auditing, shall consist of systematic, pre-planned, and documented evaluations of the individual elements of the LP&L Quality Assurance Program to assure that the overall Program is functioning and achieving the desired results. Level III quality assurance activities shall be performed by LP&L or its authorized representative(s). 2

Each major contractor shall be required to comply with the requirements of Appendix B to 10CFR50 and to follow the guidance provided by the documents which are listed in Table 2-1 applicable to their scope of work, except where alternate conditions are stated in the PSAR. Their quality assurance programs shall be reviewed and concurred with by the LP&L Quality Assurance Manager, and shall be considered as part of the LP&L Quality Assurance Program. 2

The foregoing represents the general philosophy of LP&L's Quality Assurance Program. Succeeding sections of the LP&L Quality Assurance Manual describe in further detail how LP&L plans to organize, integrate, measure and control the implementation of the LP&L Quality Assurance Program requirements. 2

LP&L Quality Assurance Program
Approved By: 2

A. E. Henderson Jr. by [illegible] 10/10/78

QUALITY ASSURANCE MANAGER DATE

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

REQUIREMENT CHANGE NOTICE (RCN)

Title: Organization

No. QR 1.0

Rev. 2 RCN# 3

Effective Date 12/08/83

Page 1 of 1

Page No.	Current Page Rev. No.	Section / Paragraph	Description of Change
All	2	Entire Requirement	Replace QR 1.0, Rev. 2 with QR 1.0, Rev. 3

Reason For Change: Adjusted to reflect the current QA Organization, responsibilities and requirements.

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
C. D. Jones	Thomas J. Gresk	L. S. Leddick		
Date: 11/21/83	QA Manager Date: 12-6-83	R. S. Leddick Date: 8 DEC 83	Date:	Date:

1.1 General

In accordance with the requirements of 10CFR50, Appendix B, Criterion I, this Quality Requirement (QR) describes the LP&L organization and key positions responsible for implementing the LP&L Quality Assurance Program for Waterford-3 SES during the construction phase. This QR further delineates the authority and responsibilities of individuals and organizations performing quality-related activities.

1.2 LP&L Quality Assurance Organization

Figure 1-1, the LP&L Corporate Quality Assurance Organization chart illustrates the line of authority and areas of responsibility for the major organizations which are involved in the assurance of quality and/or safety-related activities.

Organizational responsibilities for implementation of the LP&L Quality Assurance Program are described in the following sections.

1.2.1 LP&L Management

1.2.2 LP&L Nuclear Services Group

1.2.3 LP&L Project Manager

1.2.4 LP&L Quality Assurance Group

1.2.5 LP&L Quality Assurance Committee

1.2.6 Major Contractors

* This requirement revised in its entirety.

1.2.1 LP&L Management

The LP&L President and Chief Executive Officer is the official Licensee for operation of the Waterford-3 SES.

The LP&L CEO establishes overall Corporate policy for nuclear plant operation consistent with the health and safety of LP&L employees and the general public.

The Senior Vice President - Nuclear Operations establishes Corporate Quality Assurance and Nuclear Safety policies and performs the following QA functions:

a. Approves and endorses this Nuclear Operations Quality Assurance Manual and revisions thereto.

b. Appoints Safety Review Committee members and establishes the guidelines for their activities.

c. Commissions annual audits of the Quality Assurance Program by a Management Audit Group, and acts upon their recommendations.

d. Regularly reviews summaries of Quality Assurance Program status submitted by the Corporate Quality Assurance Manager.

e. Evaluates the effectiveness of the Quality Assurance Program through review of the Quality Assurance Program status and management audit reports.

f. Takes management action to improve effectiveness of the Quality Assurance Program.

g. Directs resolution of quality related disputes between the Quality Assurance Manager and line organizations.

h. Provides overall direction for construction, modification, operation, and administration of Waterford 3.

i. Participates as a member of the Safety Review Committee (SRC).

1.2.2 LP&L Nuclear Services Group

The Nuclear Services Group provides administrative and technical support to the plant staff and interfaces with consultants and other outside organizations. Areas supported include Licensing, Design, Construction and Nuclear Engineering.

The Nuclear Services Manager reports to the Senior Vice President - Nuclear Operations and:

a. Determines when consultants shall be utilized to deal with complex problems and projects beyond the scope of normally available staff members.

b. Manages the offsite technical support of the design change process, including initiation, implementation and documentation of selected design changes, and coordinates this activity with the plant staff and contractors.

c. Coordinates and reviews responses to federal, state, and local regulatory agencies.

d. Manages the preparation of FSAR updates and responses to IE bulletins, circulars and information notices.

e. Establishes a corporate level licensing commitment tracking system.

f. Administers environmental licensing activities.

g. Coordinates the activities of Middle South Services relative to all nuclear fuel material, conversion, enrichment, fabrication processes and in-core fuel management.

h. Recommends corrective actions to be taken in regard to safety issues.

i. Reviews and assesses the safety significance of NRC orders, bulletins, circulars, and generic letters; IE inspection reports; and operating experience information from all sources.

1.2.3 LP&L Project Manager - Nuclear

The Project Manager - Nuclear reports to the Senior Vice President - Nuclear Operations and is responsible for direction and administration of the Project Management Group during construction completion. This includes managing and controlling the activities of the Engineering and Nuclear Safety, Construction, Contracts, and Cost/Scheduling Departments. He is also responsible for overseeing contracted construction organizations, integrating schedules, and managing cost control measures and capital expenditures.

1.2.4 LP&L Quality Assurance Group

The LP&L Corporate Quality Assurance Manager reports to the Senior Vice President - Nuclear Operations and is responsible for the direction and administration of the LP&L Quality Assurance Group (Figure 1-2).

The Corporate Quality Assurance Manager and his staff are independent of cost and scheduling responsibilities. They shall not have direct responsibility in the areas which they review and audit for Program compliance. They shall have sufficient authority and organizational freedom to:

a. Identify quality problems.

b. Initiate, recommend, and/or provide solutions to quality problems.

c. Verify implementation of solutions.

The LP&L Quality Assurance Group has the authority to stop unsatisfactory work or control further processing, delivery, or installation of nonconforming material. They have the authority to direct work stoppage when work is not being performed in accordance with approved drawings, specifications, procedures, or regulatory requirements and/or when conditions exist which could be significantly adverse to quality if the work were to continue.

The Corporate Quality Assurance Manager and his staff are responsible for:

a. Developing the Quality Assurance Program and coordinating its implementation and changes thereto.

b. Through audits and reviews, assuring effective implementation and compliance with the Quality Assurance Program.

c. Evaluating LP&L supplier Quality Assurance Programs and maintaining an approved supplier list.

d. Performing trend analysis of conditions determined to be adverse to quality.

1.2.4.1 Engineering/System Development Quality Assurance Group (Offsite)

The Engineering/System Development Quality Assurance Group is directed by the Engineering/Systems Development QA Manager who reports to the Corporate Quality Assurance Manager.

The Engineering/Systems Development QA Manager is responsible for:

a. Development and maintenance of QA policies for the LP&L QA Program and QA Section Procedures.

b. Conduct of audits and surveys of off-site suppliers, contractors, and vendors to verify compliance with applicable requirements.

c. Development and maintenance of the training and indoctrination programs for LP&L QA staff members.

d. Audits of those offsite groups within LP&L and Middle South Services who perform Waterford-3 quality related activities.

e. Maintenance of documentation of quality assurance activities.

f. Performance of Quality Assurance Department administrative and special project tasks as directed by the LP&L Corporate Quality Assurance Manager.

1.2.4.2 Nuclear Operations Quality Assurance Group (Onsite)

The Nuclear Operations Quality Assurance Group is directed by the Nuclear Operations Quality Assurance Manager who reports to the Corporate Quality Assurance Manager. The Nuclear Operations QA Manager's responsibilities include:

a. Review of LP&L procurement documents to ensure inclusion of applicable QA requirements.

b. Review of quality affecting program descriptions and administrative procedures to ensure that requirements of the Quality Assurance Manual are implemented.

c. Review of internally generated design drawings and specifications to ensure that the documents are prepared, reviewed, and approved in accordance with applicable procedures and contain the necessary QA requirements.

1.2.4.3 Nuclear Construction Quality Assurance (Onsite)

The LP&L Nuclear Construction Quality Assurance Manager reports to the Corporate Quality Assurance Manager. The Nuclear Construction Quality Assurance Manager shall coordinate the LP&L and contractor quality assurance efforts at the site. In this capacity, he interfaces directly with the various quality assurance and quality control organizations at the site. He and his staff are responsible for:

a. Establishing and implementing an audit and surveillance program of site construction activities to verify compliance with applicable requirements.

b. Developing Quality Procedures and Quality Instructions for performing audits and surveillances of construction site quality control and quality assurance activities.

c. Identifying quality assurance problems affecting site construction.

d. Initiating, recommending, and verifying implementation of solutions to site quality assurance problems.

1.2.4.4 Specialists and Consultants

Engineering specialists and consultants shall be used as necessary by the Corporate Quality Assurance Manager to supplement his staff.

1.2.5 LP&L Quality Assurance Committee

The Quality Assurance Committee (QAC), is chaired by the LP&L Corporate Quality Assurance Manager and is composed of the LP&L Nuclear Services Manager, engineers from the LP&L Power Production Department and the Engineering Department, and a Quality Assurance Engineer from Middle South Services. The QAC has engineering specialists within LP&L and nuclear specialists from Middle South Services available for consultation.

The Quality Assurance Committee shall be responsible for:

a. Resolving disputes arising from differences of opinion between QA/QC personnel and other organizations.

b. Reviewing the LP&L Quality Assurance Program, policies and activities.

c. Following-up committee recommended action to assure compliance.

d. Annual reviews of the LP&L Quality Assurance Program, policies and activities pertaining to construction.

The Quality Assurance Committee advises the Senior Vice President - Nuclear Operation on matters relating to quality problems.

The responsibilities of the Quality Assurance Committee shall end when Waterford-3 SES begins commercial operation.

1.2.6 Major Contractors

The major contractors involved in implementing the LP&L Quality Assurance Program are:

a. The Architect-Engineer (A-E).

b. The Nuclear Steam Supply System (NSSS) Vendor.

c. The Construction Manager and/or Constructor.

The A-E shall be responsible for designing the Balance-of-Plant structures, systems, and components, for procuring equipment for delivery to the site and for coordinating the COP and NSSS. Level II quality assurance responsibilities associated with this scope of work shall be delegated to the A-E.

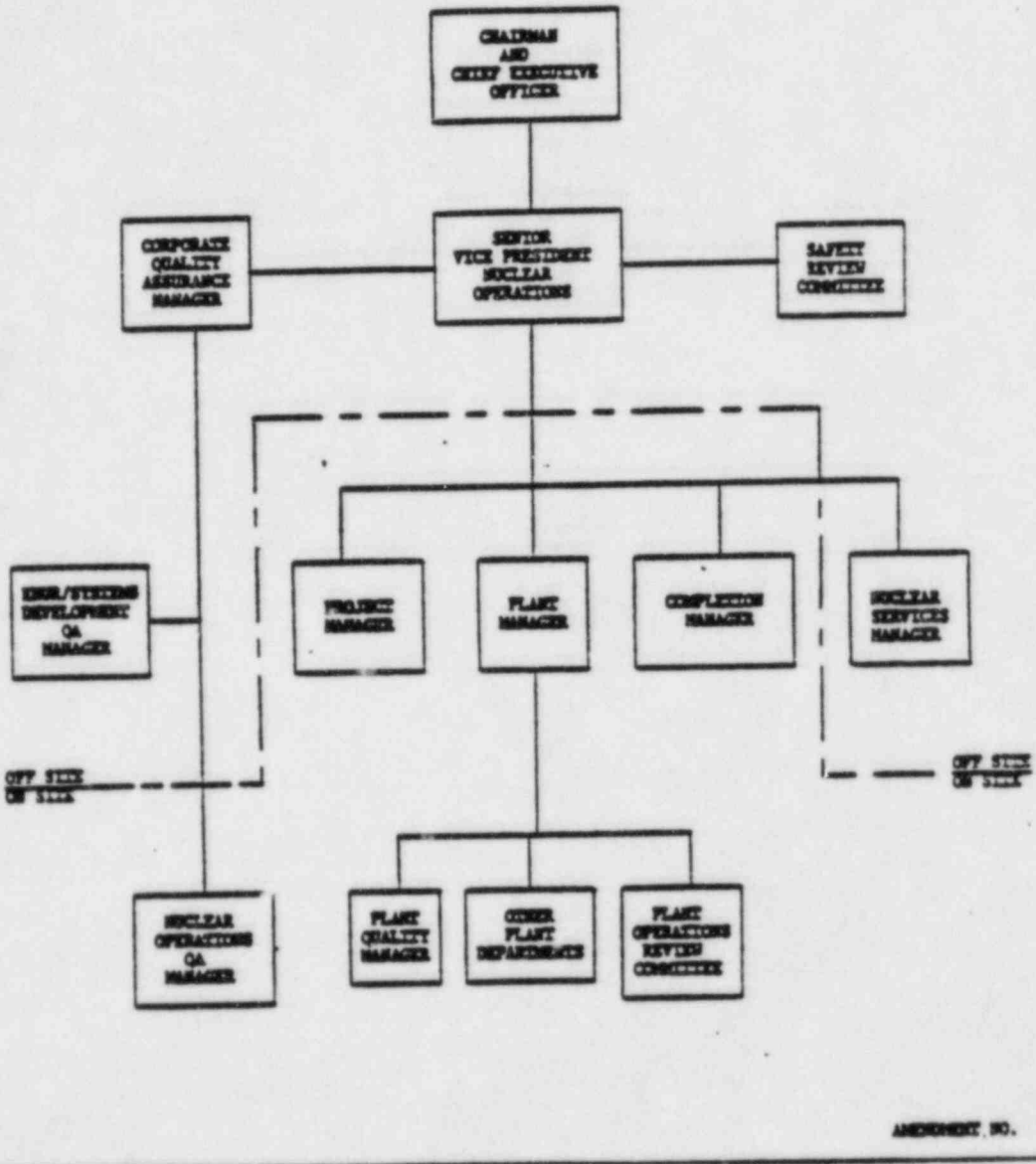
The NSSS Vendor's scope of responsibility shall include the design, procurement, fabrication and construction (if applicable) of the NSSS and the initial fuel supply. The Level I and Level II quality assurance activities associated with this scope of work shall be delegated to the NSSS Vendor. The NSSS Vendor shall supply sufficient interface information to the A-E so that the A-E can effectively coordinate the Balance of Plant (BOP) and NSSS. The scope of responsibility for the Construction Manager and/or Constructor shall include the receipt, storage, handling, construction and erection of the total plant exclusive of the construction, if applicable, within the NSSS Vendor's scope of responsibility. Level I and Level II quality assurance activities associated with this scope of work shall be provided by the Construction Manager and/or Constructor.

The major contractors are named in Section 1.4 of the LP&L FSAR.

In accordance with QR 18.0 and applicable Quality Assurance Section

Procedures, the LP&L Nuclear Quality Assurance Group shall audit the QA activities of the major contractors to determine whether or not individuals and organizational units performing QA functions within the major contractors' organizations have sufficient authority and organizational freedom to effectively implement QA programs within their organizations. By contractural agreement, LP&L shall require that the major contractors evaluate, approve and audit their suppliers and subcontractors to assure that their suppliers and subcontractors have implemented QA programs which meet applicable requirements of Appendix B to 10CFR50.

The Major Contractors' QA programs, and changes thereto, shall be reviewed and concurred with by the LP&L Corporate Quality Assurance Manager. The LP&L Nuclear Quality Assurance Group shall perform periodic audits of the Major Contractors to assure that they maintain QA programs which meet the requirements of Appendix B to 10CFR50. Audits shall be performed as described in QR 18.0 and applicable procedures.



AMENDMENT NO.

LOUISIANA POWER & LIGHT CO. WATERFORD STEAM ELECTRIC STATION	CONSTRUCTION PHASE ORGANIZATION FOR NUCLEAR QUALITY ASSURANCE	FIGURE 1-1

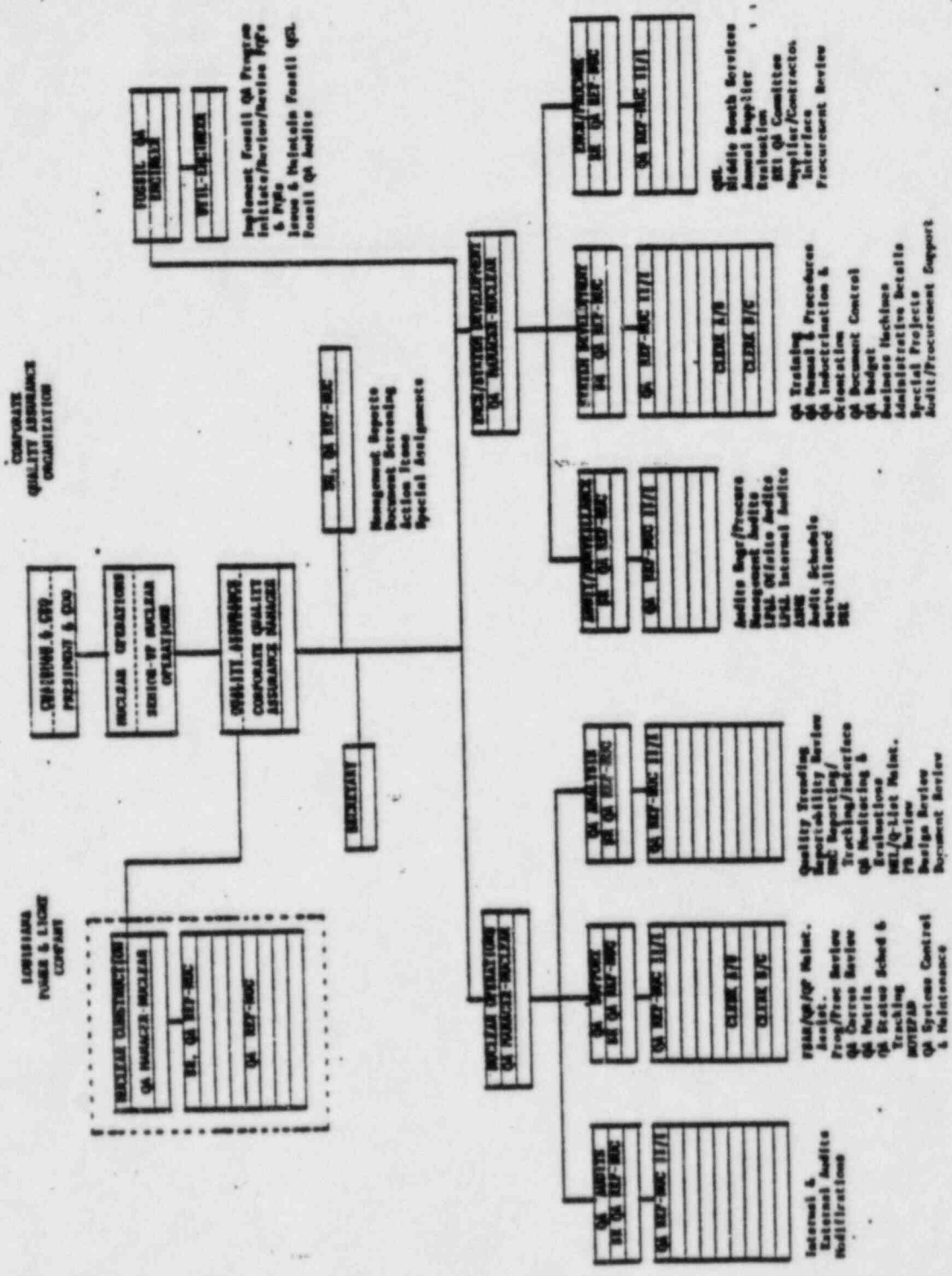


Figure 1-2

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

QUALITY REQUIREMENT CHANGE NOTICE(QRCN)

No. QR 2.0

Rev. 2 QRCN #1

QRCN Date: 4/29/80

Page No.	Current Page Rev. No.	Section / Paragraph	Description of Change
7of11	2	2.10	Change first paragraph to read as follows: As part of his continuing involvement in the program, and in accordance with the management audit procedure(s), the Vice President-Power Production requests that a management audit of LP&L's Quality Assurance Program be conducted at least once a year by a qualified auditing organization appointed by him that is independent of LP&L's QA Program. The information from the management audits shall permit the Vice Presdient-Power Production to assess the scope, status, implementation and effectiveness of the program and to assure that the program is adequate and effectively complies with Appendix B to 10CFR50.
7of11 & 8of11	2	2.10	Delete second, third and fourth paragraphs from this section.

Reason For Change: To make the Management Audit program for Design, Procurement and Construction Phase and the Operational Phase consistent with each other. This change also allows the management audits to be conducted by any qualified auditing organization rather than limiting the auditing to one organization such as the LP&L Internal Audit Group.

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
Date 4/28/80	QA Manager Date:	Date: 4-29-80	Date:	Date:

2.1 General

Louisiana Power & Light Company's objective is to design, construct and operate its nuclear generating station(s) with the highest degree of functional integrity and reliability that is necessary to avoid undue risk to the health and safety of employees and the general public.

In order to accomplish this objective, LP&L has developed the LP&L Quality Assurance Program (Program) which is described in this LP&L Quality Assurance Manual (Manual). The Manual describes what LP&L, together with its major contractors, plan to implement as a quality assurance program in order to assure that all safety-related activities are performed in a controlled manner and are documented to provide objective evidence of compliance with NRC regulations and guidance. The Manual is approved by the Quality Assurance Manager and the Vice President-Power Production. 2

The LP&L Quality Assurance Manual is written in the format of Appendix B to 10CFR50. Individual Quality Requirements contained in the Manual are numbered consistent with and reflect the requirements of the Criteria of Appendix B to 10CFR50. 2

2.2 Development of Program

LP&L's Quality Assurance Program shall comply with the requirements of Appendix B to 10CFR50 and shall follow the guidance provided by the documents which are identified in Table 2.1, except where alternate conditions are stated in the PSAR for the nuclear project. 2

The Program shall take into account the need for special controls, processes, test equipment, tools, skills to attain the required quality; and the need for verification of quality by inspection and test.

The requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, - "Nuclear Power Plant Components", are mandatory for the manufacturers, fabricators, and constructors of Waterford SES Unit No. 3, as applicable.

The Quality Assurance Manager shall be responsible for controlling the issuance and maintenance of the LP&L Quality Assurance Manual. The Quality Assurance Manager shall assure that both he and the Vice President-Power Production approve revisions to the Manual. He shall also maintain a listing of the Manual assignees. Revisions to the Manual shall be issued as necessary to assure effective implementation of regulatory requirements. Each person assigned a controlled copy of the Manual shall be responsible for filing revisions after removing superseded and outdated pages from his copy of the Manual.

The LP&L Quality Assurance Program defines the responsibilities and duties of individuals and organizations participating in safety-related activities. The requirements contained in the Program are mandatory for individuals and organizations participating in safety-related activities. The responsibilities and duties which are assigned by management to a specific individual may be assigned to other qualified persons by management if the specific individual is not available.

Corporate policies, goals and objectives are transmitted down through the levels of management with instruments such as policy statements. The FOREWORD to this Manual is the LP&L corporate policy statement on quality assurance.

2.3 Identification of Safety-Related Structures, Systems, and Components

A description of the safety-related structures, systems, and components within the scope of the LP&L Quality Assurance Program shall be presented in a table contained in the PSAR for the LP&L nuclear project. The program shall provide control over activities affecting the quality of safety-related structures, systems, and components to an extent commenserate with their importance to safety. 2

2.4 Establishment of Initial Program

In order to initiate quality assurance activities such as design, procurement, safety-related site preparation and preparation of the PSAR prior to submittal of a PSAR, LP&L and its major contractors (A-E and NSSS Vendor) shall implement the portions of their QA programs which control pre-submittal quality assurance activities. These portions of the LP&L Quality Assurance Program shall comply with applicable requirements of Appendix B to 10CFR50 and shall follow the guidance of applicable documents listed in Table 2.1. 2

During the construction phase of the nuclear project, LP&L or its designated representative(s) shall audit the A-E, NSSS Vendor, and LP&L consultants to assure that: 2

a. The contractors' QA programs comply with applicable requirements of Appendix B to 10CFR50 and follows the guidance of applicable documents listed in Table 2.1.

b. Appropriate implementing procedures are written, issued, and in use.

c. Licensing activities, site studies, and related data are documented and controlled.

2.5 Documentation of Program

Quality Procedures and Quality Instructions are the implementing documents for the Quality Requirements. Quality Procedures or Quality Instructions shall be written to assure that safety-related activities are performed in a controlled manner and are documented to provide objective evidence of compliance with applicable requirements.

Quality Procedures and/or Quality Instructions shall be prepared by the group performing the task. The Quality Procedures shall be reviewed and approved by the supervisor of the responsible organizational unit and by the Quality Assurance Manager. Quality Procedures and Quality Instructions shall be given the same principle number as the Quality Requirement (QR) which they implement. Approved and issued Quality Procedures and Quality Instructions shall be treated as controlled documents as described in QR 6.0. 2

2.6 Resolution of Disputes

Disputes arising from a difference of opinion between QA/QC personnel and other organizations shall be resolved in accordance with QR 1.0 and applicable procedures.

2.7 Indoctrination and Training of LP&L Personnel

Prior to beginning a particular audit or safety-related activity, the LP&L Quality Assurance Program requires that personnel who are to be engaged in that activity shall be appropriately trained and qualified in the principles and techniques to the activity to be performed. QA training procedures are issued and in use. 2

The LP&L QA training and indoctrination program is under the direction of the LP&L Quality Assurance Manager. The QA training and indoctrination program provides LP&L personnel who perform safety-related activities with instruction and guidance to assure that they have adequate knowledge of the LP&L Quality Assurance Manual and to enable them to become proficient in implementing the requirements addressed therein. The LP&L Quality Assurance Group shall provide new QA personnel and the personnel from other LP&L organizational units who perform activities affecting quality with training sessions that describe the purpose, scope and implementation of the LP&L Quality Assurance Program. 2 2

In appropriate training sessions, LP&L Quality Procedures that interface with other LP&L organizational units shall be discussed in detail. For Quality Instructions, if applicable, the organizational unit that prepared the instructions shall provide the users with indoctrination and training.

The LP&L Quality Assurance Group shall audit the other LP&L organizational units engaged in safety-related activities to assure that personnel are being adequately trained and indoctrinated.

2.8 Qualification Requirements for the Quality Assurance Manager

The qualifications for LP&L Quality Assurance Manager are:

a. Graduate of a college or university with a Bachelor's degree in an engineering, a science, a related field, or equivalent capabilities.
b. A minimum of four years experience in quality assurance or a quality assurance related activity with at least two of those years in the nuclear power industry as a manager or supervisor.
c. Experience in development and implementation of Quality Assurance programs, plans and procedures.
d. Familiarity with Appendix B to 10CFR50 and applicable codes, standards, and Regulatory Guides.
e. Knowledge of inspection and nondestructive testing techiques.
f. Ability to plan, to organize and to administer an engineering activity.
g. Ability to provide effective written and oral communication.
h. Ability to maintain a good working relationship with employees, contractors, suppliers, government agencies, and the public.

2.9 Controlled Conditions for Safety-Related Activities

Safety-related activities shall be accomplished under controlled conditions. Activities such as inspection and testing shall be performed with qualified equipment, under suitable environmental conditions for accomplishing the activities, and with the assurance that all prerequisites for given activities have been satisfied.

During construction, LP&L shall perform audits and/or surveillances of the safety related activities performed by major contractors, site contractors and/or consultants.

2.10 Management Review of the QA Program

As part of his continuing involvement in the Program, and in accordance with the management audit procedure(s), the Vice President-Power Production shall request that a management audit of the LP&L Quality Assurance Program be conducted at least twice a year by auditors from the Internal Auditing Group. The information from the management audits shall permit the Vice President-Power Production to assess the scope, status, implementation, and effectiveness of the Program and to assure that the Program is meaningful and effectively complies with Appendix B to 10CFR50. 2

Auditors from the Internal Auditing Group are independent from both the Quality Assurance Group and the Nuclear Project Group. The Internal Auditors report to the Internal Auditing Manager who reports to the

Secretary and Controller. The Secretary and Controller reports to the President of LP&L. Managers of the Quality Assurance Group and the Nuclear Project Group report to the Vice President-Power Production who, in turn, reports to the Senior Vice President of LP&L. 2

In accordance with applicable Quality Procedures, the Internal Auditors who are assigned by the Internal Auditing Manager to audit the LP&L Quality Assurance Program attend sessions of the Quality Assurance indoctrination and training program in order to become familiar with the Program and revisions thereto. 2

The major contractors' QA programs, and changes thereto, shall be reviewed and concurred with by the LP&L Quality Assurance Manager. The LP&L Quality Assurance Group shall perform periodic audits of the major contractors to assure that they maintain QA programs which meet the requirements of Appendix B to 10CFR50. Audits shall be performed as described in QR 18.0 and applicable procedures.

2.11 Planning for Preoperational Testing and Systems Turnover

Advanced planning is required for the control of management and technical interfaces between LP&L and the major contractors during the phaseout of design and construction and during preoperational testing and plant turnover. This planning shall be achieved through periodic meetings of concerned organizations and the development of written procedures which define responsibilities and interfaces, and control the testing and turnover of plant systems to LP&L.

2.12 Maintenance of Program

Amendments to the SAR and revisions to the LP&L Quality Assurance Manual shall be issued as necessary to assure effective implementation of regulatory requirements. 2

TABLE 2 - 1
(Sheet 1 of 2)

LP&L Commitment to Guidance Documents

Document No.	Title
NRC Regulatory Guide 1.28	Quality Assurance Program Requirements for Design and Construction (endorses ANSI N45.2.2)
NRC Regulatory Guide 1.30	Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment (endorses ANSI N45.2.4)
NRC Regulatory Guide 1.31	Control of Stainless Steel Welding
NRC Regulatory Guide 1.37	Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (endorses ANSI N45.2.1)
NRC Regulatory Guide 1.38	Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants (endorses ANSI N45.2.2)
ANSI N45.2-1971	Quality Assurance Program Requirements for Nuclear Power Plants - including Regulatory staff comments in Section D of the "Grey Book" (Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants)
ANSI N45.2.9 Draft 11, Rev. 0 (January 17, 1973)	Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants - including Regulatory staff comments in Section D of the "Grey Book"

TABLE 2 - 1
(Sheet 2 of 2)

LP&L Commitment to Guidance Documents

Document No.	Title
ANSI N45.2.11 Draft 2, Rev. 2 (May, 1973)	Quality Assurance Requirements for the Design of Nuclear Power Plants
ANSI N45.2.12 Draft 3, Rev. 0 (May 2, 1973)	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants - including Regulatory staff comments in Section D of the "Grey Book"
ANSI N45.2.13 (Draft May 31, 1972)	Supplementary Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants - including Regulatory staff comments in Section D of the "Grey Book"
NRC "Green Book" WASH 1309 (May 10, 1974)	Guidance on Quality Assurance Requirements during the Construction Phase of Nuclear Power Plants.

3.1 General.

A design control program shall be established for each LP&L nuclear project in order to assure that applicable design requirements, such as design bases, regulatory requirements, codes, technical standards and quality standards, are identified in design documents and that design requirements are reviewed, approved and controlled. Changes to, and deviations from, design requirements shall be identified, documented and controlled.

3.2 Responsibilities of the A-E and NSSS Vendor.

LP&L shall delegate to a specific A-E and to a specific NSSS Vendor the responsibility for the detailed design effort for each LP&L nuclear generating station. This effort shall include design verification. The design control activities of the A-E and NSSS Vendor shall be performed in accordance with their design control procedures and instructions which comply with the requirements of Appendix B to 10CFR50 and follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

The A-E and NSSS Vendor shall implement applicable design requirements such as the following in their design control procedures and instructions:

a. Requirement that applicable regulatory requirements and design bases shall be correctly translated into specifications, drawings, written procedures, and instructions.

b. Requirement that appropriate quality standards shall be specified in the design documents; deviations and changes from these quality standards shall be controlled.

c. Requirement that suitable design controls shall be applied to such activities as reactor physics; seismic, stress, thermal, hydraulic, radiation, and accident analyses; compatibility of materials; and accessibility for inservice inspection, maintenance, and repair. Designs shall be reviewed to assure that (1) design characteristics can be controlled, inspected, and tested, and (2) inspection and test criteria are identified.

d. Requirement that proper selection and accomplishment of design verification or checking methods such as design review, alternate calculations, or qualification testing shall be performed. The responsible design organization shall identify the particular design verification methods utilized.

When a test program is used to verify the adequacy of a design, a qualification test of a prototype unit under adverse design conditions shall be used.

e. Requirement that individuals or groups responsible for design verification shall be other than the original designer. These individuals or groups and their authority and responsibility shall be identified and controlled by written procedures.

f. Requirement that approved design documents and revisions thereto shall be distributed to responsible individuals in a timely manner and controlled to prevent inadvertent use of superseded material.

g. Requirement that errors and deficiencies in the design, including the design process, that could adversely affect safety-related structures, systems, and components in the design process shall be documented and appropriate corrective action shall be taken to preclude repetition

h. Requirement that approved design documents and reviews, records, and changes thereto shall be collected, stored, and maintained in a systematic and controlled manner.

i. Requirement that standard "off the shelf" commercial or previously approved materials, parts, and equipment that are essential to the safety-related functions of structures, systems, and components shall be reviewed for suitability of application prior to selection.

j. Requirement that the selection of suitable materials, parts, equipment, and processes for safety-related structures, systems, and components shall include the use of valid industry standards and specifications.

The A-E and NSSS Vendor shall specify the acceptable materials, codes, standards, special tests, and documentation required of procurred items in order to assure that each structure, system or component will perform its designed safety-related function.

Drawings, specifications and procurement documents for safety-related items shall be reviewed by individuals or groups other than the individuals responsible for generating the documents in order to assure incorporation of design bases and applicable code, quality and regulatory requirements.

3.3 Review by LP&L Personnel

LP&L Nuclear Project personnel shall verify the review or approval of safety-related specifications and drawings and changes thereto prepared by the A-E and NSSS Vendor. In addition, LP&L Nuclear Project personnel shall review A-E recommendations for purchase and shall make recommendations to the Vice President-Power Production for the awarding of orders and contracts for items and services purchased through the A-E. 2

LP&L Quality Assurance personnel shall review safety-related A-E and NSSS Vendor procurement documents as selected by the Quality Assurance Manager in order to verify the inclusion of appropriate design and quality requirements.

3.4 Control of Design Interfaces.

The A-E shall be responsible for assuring identification of physical interfaces between the Balance of Plant and Nuclear Steam Supply System, for coordination of the systems which cross these interfaces, for assuring the necessary flow of information between the A-E and NSSS Vendor, and for obtaining the necessary concurrence with interface documents from the NSSS Vendor. The NSSS Vendor shall supply the necessary interface information to the A-E. In addition, both the A-E and NSSS Vendor shall be responsible for assuring that interface control among groups within their own organization is established and implemented.

3.5 Control of Design Changes.

Revisions to design documents including field changes shall be subject to design control measures commensurate with those applied to the original design documents and shall be approved by the organization that performed the original design unless LP&L designates another responsible organization.

3.6 Audits.

The LP&L Quality Assurance Group shall be knowledgeable concerning design control requirements. LP&L Quality Assurance Engineers shall audit the design activities of the A-E and NSSS Vendor to verify that the A-E and NSSS Vendor are in compliance with design control requirements. The A-E

shall also audit the NSSS Vendor's implementation of design control requirements.

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

REQUIREMENT CHANGE NOTICE (RCN)

Title: Procurement Document Control

No. QR-4.0

Rev. 0 RCN# 1

Effective Date 6/27/83

Page 1 of 1

Page No.	Current Page Rev. No.	Section / Paragraph	Description of Change
All	0	Entire Requirement	Complete rewrite of requirement.

Reason for change: Update QR-4.0 to FSAR 17.2, Amendment 22

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
	QA Manager			
DATE 11-10-83	DATE	DATE	DATE	DATE

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 General

The LP&L organizations having responsibilities in the implementation of the Nuclear Operations Quality Assurance Program for Waterford 3 shall assure procedures are established which delineate the sequence of actions to be accomplished in the preparation, review, approval and control of procurement documents generated by LP&L for quality related material, spare and replacement parts, components and services for Waterford 3 during operations. Quality related Suppliers/Contractors and subtier Suppliers shall be required, through procurement documents, to implement quality assurance programs consistent with the LP&L Quality Assurance Program. Spare and replacement parts for quality related systems, structures and components shall be subject to current Quality Assurance Program controls and to codes, standards and technical requirements at least equivalent to those used for the original equipment.

4.2 Preparation of Procurement Documents

The initiator shall prepare the Procurement Documents in accordance with procedures or instructions. The procurement documents shall identify, or provide for later identification, of test, inspection and acceptance requirements, and any special instructions and requirements for such activities as designing, identification,

fabrication, cleaning, erecting, packaging, handling, shipping and extended storage. Procurement documents shall:

4.2.1 Specify the scope of work to be performed or the item to be provided by the Supplier;

4.2.2 Where feasible specify the component or system in which the item may be used;

4.2.3 Contain or invoke by reference technical and quality requirements, including drawings, test and specification requirements, special instructions, and applicable regulations, codes, and industrial standards;

--NOTE--

References invoked shall be specific (Document no., Revision, Section/para., etc.) to the item. See Attachment 4.12.2 for ASME replacements.

4.2.4 In those cases where the original item or part is found to be commercially "off the shelf," or without specifically identified quality assurance requirements, spare and replacement parts may be similarly procured but care shall be exercised to assure at least equivalent performance;

4.2.5 Identify the LP&L QA Program requirements which must be described and met in the Supplier/Contractor and subtier Supplier QA programs;

4.2.6 Identify those records to be retained, controlled, and maintained by the Supplier and those to be delivered to LP&L prior to use or installation of the item;

--NOTE--

Certificates of conformance, when used, shall identify:

- Purchased item(s)
- Specific requirements met by the items
- Specific requirements not met by the items.

The certificate shall be attested to by a person who is responsible for the Quality Assurance function.

The certificate of conformance shall reference the LP&L purchase order number.

4.2.7 Establish the right of access for LP&L and its agents to Suppliers' facilities and records for source inspection and audits;

4.2.8 Specify the requirement for Suppliers to comply with 10 CFR Part 21 for reporting of defects and noncompliance;

4.2.9 Establish measures for the identification, control, and disposition of items and services that do not meet procurement document requirements;

4.2.10 Specify any special handling, packaging, or storage requirements; and

4.2.11 Specify fabrication, installation, or repair processes and inspections, and LP&L hold and witness points, or require LP&L surveillance of the Supplier.

4.3 Control of Procurement Documents

4.3.1 Measures shall be established which require that procurement documents are reviewed and processed in accordance with controlled approved procedures or instructions.

4.3.2 Changes to procurement documents shall be subject to the same control as the original document. Approved procedures or instructions referenced in 4.3.1, above, shall include provisions for modification of the purchase document.

4.3.3 Procurement documents shall contain technical and quality requirements which are clearly and correctly stated. Quality and technical requirements shall be verifiable, inspectable and controllable. Where applicable, the procurement document shall contain accept/reject criteria.

4.4 QA Review and Approval

Items or services shall be evaluated by the initiating organization, as to their quality-relatedness and importance to plant safety. Even though items associated with quality related components, systems, parts and services may have no specific quality requirements, this evaluation acknowledges their possible use in quality related areas. Attachment 4.11.1 contains guidelines which shall be used in this evaluation and included in implementing procedures/instructions.

Evaluations and reviews shall be documented. Procurement documents for items or services which are Quality Related or associated with

quality related systems, components, spare and replacement parts or services shall be marked "Quality-Related," as well as with the type of procurement e.g., "Specification," "Commodity," "Catalog," or "General" per Attachment 4.11.1. Special inspections, tests, verification or documentation shall be specified when required to assure the suitability of these items.

The procurement documents shall be forwarded to Quality Assurance for review. Quality Assurance shall review the procurement documents to verify:

4.4.1 Use of the proper sources for technical and quality requirements.

4.4.2 Appropriate technical and quality requirements are stated.

4.4.3 That the technical and quality requirements can be verified by receipt inspection, tests, or other means;

4.4.4 That technical and quality requirements are controlled through a program of planned and systematic actions;

4.4.5 10 CFR Part 21 applicability; and

4.4.6 Source inspection/test requirements can be implemented.

The procurement documents shall then be forwarded to Purchasing for processing. Bid data received from Suppliers shall be evaluated by Purchasing. Supplier's exception to the technical or quality requirements shall be approved by the initiator and QA.

4.5 Supplier Selection

Purchasing selects the Supplier and assures that the Supplier is on the Qualified Suppliers List (QSL), when required. If it is determined that the Supplier is not on the QSL for the scope of items and services to be provided, Purchasing shall notify the Administrative Services Manager - Nuclear and request the QA Section to evaluate the selected Supplier for inclusion on the QSL. Upon selection of an approved Supplier, Purchasing shall prepare and issue the purchase order.

4.6 Qualified Suppliers List

The QA Manager shall provide procedures to establish, maintain, reevaluate and distribute the Qualified Suppliers List (QSL). Prospective Vendor/Supplier/Contractor organizations qualify for inclusion on this list through an evaluation of their QA capability for providing Quality Related items or services. Methods by which they become qualified are delineated in Section 7.0 of the LP&L Nuclear Operations Quality Assurance Manual.

4.7 Changes and Revisions

Changes and revisions affecting the technical or quality requirements of procurement documents shall be subject to at least the same review and approval as the original document.

4.8 Stock Reorders

Stock reorders may be placed without initial technical and quality review cycle providing:

- Previous purchase order is on file and the entire file is reviewed by the reorder P. R. initiator.
- Previous purchase requisition contains evidence of technical and quality review.
- No changes in quality or technical requirements are imposed on the new purchase requisition.
- The previous purchase order/requisition is referenced on the current P. R.
- The reorder purchasing requisition is accompanied by a copy of the previous technical and quality review checklists which indicates intended use of the item.

4.9 Emergency Purchase Provision

The Senior Vice President - Nuclear Operations shall require procedures to be established for emergency procurement. This procedure shall follow the established guidelines of this Quality Requirement. Approval authority may be delegated to specific off-hours shift personnel. Formal procurement documentation shall be prepared and reviewed for approval at the beginning of the next regularly scheduled work day.

4.10 Delegation of Procurement Document Control Authority

Spare and replacement items for equipment which were originally under a prime Supplier's (i.e., NSSS or A/E) scope-of-supply may be ordered from that prime Supplier with specific procurement document control authority delegated to the prime Supplier. Under this

arrangement, the establishment of the technical and QA requirements in procurement documents will be a function of the prime Supplier rather than LP&L. LP&L shall periodically evaluate the prime Supplier to assure that these activities are performed in accordance with their Quality Assurance Programs.

4.11 RECORDS

Supplier generated Quality Assurance Records are those records that are required to be submitted to LP&L or retained by the Supplier as specified by the procurement documents.

LP&L-generated Quality Assurance Records include, but are not limited to, purchase requisitions, purchase orders, data sheets, evaluation sheets, specifications, drawings, contracts and instructions.

Quality Assurance Records shall be collected, stored and maintained in accordance with Section 17 of this manual.

4.12 ATTACHMENTS

4.12.1 Procurement Terminology (With Matrix)

4.12.2 Procurement of ASME Section XI Items

PROCUREMENT TERMINOLOGY

This matrix provides the minimum quality requirements for all procurement activities associated with the various groupings. In conjunction with this enclosure, the following definitions apply to QR 4.0:

1. Vertical Column
   a) Required to be on QSL - The manufacturer/supplier/vendor, as appropriate, is required to be listed on the LP&L Qualified Suppliers List.
   b) Manufacturer Qualification Required - The manufacturer must have an acceptable Quality Program in effect.
   c) Distributor Qualification Required - The distributor (either vendor, Supplier or manufacturer) must have an acceptable Quality Distribution Program in effect.
   d) QC Receipt Inspection Required - An inspection to specified requirements is to be accomplished by Quality Control personnel at time of receipt.
   e) On-site Receipt Test Required - A locally performed test in accordance with approved procedures is required at time of receipt.
   f) Documentation Required - Documents to support the established requirements must be furnished prior to or with shipment of the item.
2. Horizontal Row
   g) Specification - Those materials which have stringent quality requirements including documentation, QC receipt inspection, Qualified Distributor, Qualified Manufacturer, inclusion on the Qualified Supplier's List, and other appropriate quality requirements.
      1. Services shall be treated as a "Specification" item if the service performs one or more of the following activities:
         a. provides required design data; or
         b. is required to determine the quality or acceptability; or
         c. can physically alter the quality.
      2. All other services shall be treated as "General."
   h) Commodity - Those materials manufactured in accordance with nationally accepted standards such as ANSI, ASME, ASTM, etc. QC receipt inspection is required and documentation must be furnished as required by the specification.
      Note: Materials which must meet the requirements of ASME Section III have additional requirements which must be imposed and therefore meet the classification of "g" above.
   i) Catalog - Those materials which can be routinely ordered from the manufacturer/supplier/vendor on the basis of information set forth in the manufacturer's standard published product description. QC receipt inspection is required and an on-site receipt test may be required.
      Note: Any catalog item requiring anything other than no substitution/QC receipt inspection must be considered a specification item under "g" above.
   j) General - Those materials which do not require any quality considerations whatsoever, although receipt inspections by warehouse receiving personnel will be conducted.
3. Other Terms Currently in Use
   k) Commercial Grade Item - Those items which (1) are not subject to design or specification requirements that are unique to facilities or activities licensed by the NRC and (2) are used in applications other than facilities or activities licensed by the NRC and (3) can be

ordered from the manufacturer/supplier on the basis of information set forth in the manufacturer's published product description.

Note: Although an item is exempted from 10CFR21 being imposed on the manufacturer/supplier/vendor by the definition of "Commercial Grade," the item may still have other QA requirements which need to be imposed in the procurement documents.

l) Off-the-Shelf Item - Those individual component parts which fulfill the requirements of Catalog Items. Use of these items in quality related applications shall be limited to replacement of the same or equal items. Substitutions may be made in accordance with Published Industry Substitution Guides or Standards if a post-maintenance check verifies the acceptability of the substitution.

m) Like-For-Like - Those individual component parts which can be classified as Catalog Items but which have an Environmental Qualification (EQ) or operability requirement. Substitutions in accordance with Published Industry Substitution Guides or Standards may not be made without documented engineering evaluation and analysis.

Note: For the purpose of this discussion, items defined as "Commercial Grade" cannot automatically be classed as Catalog, Commodity, or Specification items but must be evaluated on a case by case basis.

Examples of the above designated categories are provided below.

Note: This listing is not intended to be all inclusive but for guidance only.

1. Specification - Pressure boundary material; major parts for equipment such as diesel generators, motors, pumps, valves, compressors, heat exchangers, etc.; non-standard printed circuit boards, specially wound transformers or unique components and assemblies; and other items which require qualification or testing more stringent than the manufacturer's generic published qualification or test information.
2. Commodity - A procurement item where the scope of work/material requires a broad range of skills and facilities to be furnished by the Supplier in accordance with nationally accepted codes and standards such as ASNI, ASME or ASTM, etc. This broad range of skills and/or requirements will be delineated on the purchase order either directly or by incorporating applicable codes and standards.
3. Catalog - Individual electrical/electronic components such as resistors, capacitors, transistors, integrated circuits, etc.; items at the module level such as standard printed circuit boards, transformers, relays, circuit breakers, etc.; bearings, gaskets, packing, 'O' rings, springs, handwheels, etc.; and other items for which the manufacturer's catalog number becomes the specification.
4. General - Office supplies, materials and equipment, janitorial chemicals and cleaning agents which are not to be used in the Waterford 3 physical plant. Maintenance shop tools and equipment except for measuring and test equipment.

PROCUREMENT TERMINOLOGY MATRIX

	SPECIFICATION	COMMODITY	CATALOG	GENERAL
REQUIRED TO BE ON QSL	Yes	Yes	No	No
MANUFACTURER QUALIFICATION REQUIRED	Yes	Optional	No	No
DISTRIBUTOR QUALIFICATION REQUIRED	Yes	Yes or Receipt Test	No	No
QC RECEIPT INSPECTION REQUIRED	Yes	Yes	Yes	No
ONSITE RECEIPT TEST REQUIRED	Optional	Optional	Optional	No
DOCUMENTATION REQUIRED	Yes	As Req'd. By Spec	No	No

PROCUREMENT OF ASME SECTION XI ITEMS

For ASME replacements the following shall apply:

a. Replacements shall meet the requirements of the edition of the Construction Code to which the original component or part was constructed. Replacements for parts or components originally constructed without Code requirements shall be in accordance with the original design, fabrication, and inspection requirements for the part or component being replaced unless the alternative of (c) below is adopted.

b. Replacements ordered as spares for future use at an unspecified time shall meet the requirements of the Construction Code edition used for the original part or component that is intended to be replaced.

c. Alternatively, replacements may meet all or portions of the requirements of later editions of the Construction Code, provided that the following requirements are met:
   1. The requirements affecting the design, fabrication, and examination of the replacement are reconciled with the Owner's Specification.
   2. Mechanical interfaces, fits, and tolerances that provide satisfactory performance are not changed by the later edition of the Construction Code.
   3. Modified or altered designs are reconciled with the Owner's Specification through the Stress Analysis Report, Design Report, or other suitable method which demonstrates the satisfactory use for the specified design and operating conditions, whichever is applicable.
   4. Materials are compatible with the installation and system requirements.

5.1 General.

Safety-related activities of LP&L and its major contractors shall be described in documented instructions; procedures, drawings, specifications, checklists, or manuals appropriate to the circumstances. Activities such as design, procurement, manufacturing, construction, installation, testing, inspection and auditing shall be accomplished in accordance with these documents. As appropriate, these documents shall comply with and implement the requirements of Appendix B to 10CFR50 and shall follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

5.2 Preparation of Documents.

Any LP&L organizational unit engaged in safety-related activities may propose Quality Procedures and Quality Instructions as necessary to meet regulatory requirements. Quality Procedures (QA) and Quality Instructions (QI) shall be prepared and reviewed by the organizational unit responsible for the activities involved. The Quality Assurance Manager and the manager of the responsible group shall co-approve QP's. Written, approved procedures delineate the sequence of activities in the preparation, review, and approval of LP&L Quality Procedures and Quality Instructions. 2

Whenever a procedure or instruction affects the activities of another LP&L organizational unit, the originating group shall be responsible for assuring

that the affected group has the opportunity to review and evaluate the proposed procedure or instruction. The affected group shall submit, in writing, their comments and/or concurrence to the originating group prior to approval and issuance. The originating group shall be responsible for resolving comments.

LP&L's major contractors shall develop documented instructions, procedures, or drawings to control their respective safety-related activities. They shall also impose requirements on their suppliers to provide documented instructions, procedures and/or drawings to control the suppliers' safety-related activities.

Other procedures, such as inspection and test procedures, emergency procedures and maintenance procedures shall be developed as necessary by the responsible group to assure implementation of the quality requirements, and to assure satisfactory performance of safety-related activities.

5.3 Compliance with Requirements.

LP&L and its major contractors shall require that instructions, procedures, and drawings include appropriate quantitative and qualitative acceptance criteria for determining that safety-related activities have been satisfactorily completed.

When appropriate, instructions and procedures shall include checklists of the elements of an activity to be observed or measured. The checklists shall be used to document the performance of safety-related activities.

5.4 Audits.

LP&L shall audit its major contractors to verify that instructions, procedures, and drawings are available for safety-related activities and that these documents are being used. The major contractors shall audit their suppliers to verify compliance with contract requirements for instructions, procedures and drawings.

6.1 General.

LP&L and its major contractors shall establish document control programs to control the review, approval, and issuance of documents, such as instructions, procedures, and drawings, including changes thereto, to assure that the documents are adequate and that the quality requirements are stated. The programs shall be implemented with written procedures which comply with document control requirements of Appendix B to 10CFR50 and follow the guidance of applicable documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

6.2 Controlled Issuance of Documents.

Document control procedures shall assure that documents, including changes, are reviewed for adequacy and approved by authorized personnel prior to issuance. The reviewing organization(s) shall have access to pertinent background information upon which to base its approval and shall have adequate understanding of the requirements and intent of the original document.

Appropriate documents shall be distributed prior to starting an activity and shall be used at the locations where the prescribed activities are performed.

Master listings of LP&L generated controlled documents shall be updated and issued in accordance with applicable Quality Procedures. The master listings shall be complete lists of controlled documents, shall indicate the current

revision dates and shall be issued to each designee on the appropriate approved distribution list.

Personnel assigned by the Nuclear Project Manager shall maintain a history development file for LP&L generated controlled documents which shall contain a copy of each obsolete or superseded document. Obsolete or superseded documents shall be controlled according to approved written procedures to prevent inadvertent use.

Changes to LP&L documents shall be reviewed and approved by the same organizational unit that performed the original review and approval, unless the Nuclear Project Manager or Quality Assurance Manager delegates another responsible group. Approved changes shall be included in instructions, procedures, drawings and other appropriate documents associated with the change prior to implementation of the change.

6.3 Types of Controlled Documents.

Project document control within LP&L is the responsibility of the Nuclear Project Manager and shall be administered in accordance with document control procedures and instructions. Three categories of documents shall come under the project document control program. The categories are:

a. LP&L generated documents.

b. A-E and NSSS Vendor generated documents.

c. Construction Manager and/or Constructor generated documents.

LP&L shall implement document control procedures and instructions to assure that the following LP&L generated documents are controlled:

a. LP&L Quality Assurance Manual.

b. Quality Procedures.

c. Quality Instructions.

d. Other LP&L documents such as LP&L generated plans or specifications which are designated by the Nuclear Project Manager or Quality Assurance Manager as requiring document control. 2

LP&L generated controlled documents, and revisions thereto, affecting the quality of safety-related systems and components shall be prepared by the responsible group. They shall be reviewed by the supervisor of that group for correctness and completeness, and by the Manager of Quality Assurance for compliance with Quality Assurance policies and procedures. After review comments have been resolved, the document shall be approved by the supervisor of the responsible group and by the Quality Assurance Manager. An effective date shall be assigned to the document and the document shall be distributed in accordance with applicable procedures and instructions.

The following A-E generated documents shall be controlled by LP&L once they have been issued to and received by LP&L:

a. Safety-related specifications.

b. Safety-related bid inquiries.

c. Safety-related recommendations for purchase.

d. Safety-related drawings.

e. Safety-related purchase orders and supplements.

f. Safety-related manufacturing, inspection and testing instructions.

g. Safety-Analysis Reports, Environmental Reports, and related design criteria documents generated for the nuclear project.

h. Quality Assurance program documents.

The following NSSS Vendor generated documents shall be controlled by LP&L, once they have been issued by the A-E and received by LP&L:

a. Safety-related specifications.

b. Safety-related drawings.

c. Safety-related manufacturing, inspection, and testing instructions.

d. Quality Assurance program documents.

Documents of the Construction Manager or Constructor such as the following shall be controlled by LP&L once they have been issued to and received by LP&L:

a. Safety-related field specifications.

b. Safety-related field bid inquiries.

c. Safety-related field recommendations for purchase.

d. Safety-related field purchase orders and supplements.

e. Safety-related field drawings.

f. Safety-related manufacturing, inspection, and testing instructions.

g. Quality Assurance program documents.

6.4 Audits.

LP&L's Quality Assurance Group shall audit the document control activities of the major contractors to verify compliance with applicable document control requirements. The major contractors shall audit their suppliers and/or subcontractors for compliance with contract requirements for the control of documents.

7.1 General.

LP&L and its major contractors shall establish and implement procurement control programs consistent with the requirements of Appendix B to 10CFR50 and with the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the SAR for a specific nuclear project.

LP&L shall delegate the purchasing of material, equipment and services to the A-E for the BOP and to the NSSS Vendor for the NSSS. The A-E shall be assigned by LP&L as its agent in administering LP&L's contract with the NSSS Vendor unless otherwise stipulated.

7.2 Description of Program.

The program requirements for control of purchased material, equipment, and services shall be implemented with approved written procedures by the A-E, NSSS Vendor and Construction Manager or Constructor.

Suppliers and their lower-tier suppliers shall be required to comply with documented procurement requirements as agreed to between the purchaser and suppliers.

7.3 Source Evaluation and Selection.

An evaluation of supplier manufacturing and quality assurance capabilities for providing safety-related items and services shall be made by qualified

personnel. The procuring organization shall be responsible for performing an evaluation prior to the award of a procurement order. The evaluation of suppliers shall be based on one or more of the following:

a. The supplier's ability to comply with the requirements of Appendix B to 10CFR50, which are applicable to the type of material, equipment, or service being procured.

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

c. A survey of the supplier's facilities and quality assurance program to determine his ability to supply a product which meets the design, manufacturing and quality requirements, or to provide a specified service. Results of such surveys shall be documented and retained by the procuring organization.

Qualified personnel of the A-E and NSSS Vendor shall review and concur with suppliers' QA programs, or applicable portions thereof, prior to the vendor's initiation of safety-related activities.

7.4 Source Audits and Surveillance.

The major contractors shall be responsible for source audits and surveillance of their suppliers during fabrication, inspection, testing, and shipment of materials, equipment and components. Audits and surveillance

shall be planned and performed in accordance with written procedures to assure conformance to the purchase order requirements.

These procedures provide for:

a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and the personnel responsible for implementing these instructions.

b. Audits and surveillance which assure that the supplier complies with the quality requirements as specified in procurement documents. Surveillance shall be performed on those items where verification of procurement requirements cannot be determined upon receipt.

7.5 Receiving Inspection.

Receiving inspection of the supplier-furnished material, components or equipment shall be performed in accordance with written procedures which assure that:

a. The material, component or equipment is properly identified and corresponds with the receiving documentation.

b. Inspection of the material, component, equipment, and acceptance records is performed. The material, component, equipment and acceptance records shall be judged acceptable prior to installation or use.

c. Inspection records or certificates of conformance attesting to the acceptance of material, components and equipment are available at the nuclear generating station prior to installation or use.

d. Items accepted and released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work.

7.6 Spare Parts.

Spare or replacement parts for safety-related structures, systems, and components shall be subject to controls at least equivalent to those used for the original equipment.

7.7 Records.

Quality Assurance records, as required by procurement documents shall be collected and retained by the major contractors. LP&L shall delegate to the A-E and NSSS Vendor the task of assuring that their respective documentation shows that material, equipment and services conform to the procurement requirements. Suppliers shall furnish the following records as a minimum to the purchaser:

a. Documentation that specifically identifies (e.g. by the purchase order number) the purchased material or equipment and the specific procurement requirements (codes, standards, specifications, etc.) met by the items.

b. Documentation that identifies any procurement requirements which have not been met, together with a description of those nonconformances dispositioned "accept-as-is" or "repair".

The review, evaluation and acceptance of certifications shall be described in the A-E and NSSS Vendor's QA programs. Review and acceptance of these documents shall be undertaken by responsible QA personnel.

Certifications shall be periodically evaluated by audits, independent inspections, or tests to assure that they are valid.

Documentation shall be available at the construction site prior to installation or use of material, components or equipment and shall be retained here. Records shall be turned over to LP&L by use of written checklists and procedures prior to commercial operation.

7.8 Audits.

Contractors and subcontractors shall be subject to audit of their QA programs by LP&L, or its representative, at intervals consistent with the importance, complexity and quantity of the item(s) or service(s). These audits shall be performed to assure that the required processes are being used, that quality controls are being maintained and that quality records are being collected and maintained.

8.1 General.

LP&L's major contractors and their suppliers shall establish programs for the identification and control of materials, parts and components or partially fabricated assemblies. These programs shall be implemented by procedures which comply with the requirements of Appendix B to 10CFR50 and follow the guidance of applicable guidance documents listed in Table 2-1, except when alternate conditions are stated in the PSAR for a specific nuclear project.

The major contractors shall require their suppliers to comply with applicable requirements by specifying these requirements in their procurement documents. These requirements shall be applicable at the major contractors' facilities, suppliers' facilities and at the construction site.

8.2 Requirements for Identification and Control.

The method of identification and the location of the identification for materials, parts and components or partially fabricated assemblies shall be determined during the generation of specifications and design drawings to assure that the identification can be observed and does not affect the fit, function or quality of the item.

Identification by means of heat numbers, serial numbers, date coding, lot numbers, part numbers, or other appropriate means shall be required by

procurement documents. Where identification marking is employed, the marking shall be clear, unambiguous and indelible. Identification requirements in design documents shall be checked during design verification by the originating organization. Procurement documents shall require that major contractors and equipment suppliers establish procedures which describe the identification and control of materials, parts and components, including partially fabricated assemblies. Procedures shall include provisions to prevent the use of incorrect or defective material or parts, to verify identification of materials or parts prior to release for manufacturing, and to assure that the location and method of identification does not affect the fit, function or quality of the item being identified. The major contractors shall verify the correct identification of materials, parts and components prior to allowing the release of these items for manufacturing, shipping, erection, installation and use.

8.3 Traceability.

Purchased safety-related items shall be identified to the extent necessary to enable the items to be traced to documents such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports.

Markings shall be transferred to each part of an item when the item is subdivided and shall not be obliterated or hidden by surface treatment or coatings unless other means of identification are substituted.

Replacement parts and materials shall be similarly identified by coded part numbers during fabrication, storage and installation to assure required traceability to records and documents.

8.4 Audits.

LP&L shall verify compliance to these identification and control requirements by audits of its major contractors. The A-E and NSSS Vendor shall audit suppliers' implementation of requirements for identification and control of materials, parts and components as required by procurement documents.

9.1 General.

LP&L's major contractors and their suppliers shall develop programs for the control of special processes in order to assure that special processes are performed in accordance with applicable codes, standards, specifications and special requirements specified in design and/or procurement documents. These programs shall be implemented by appropriate procedures which comply with the requirements of Appendix B to 10CFR50 and follow the guidance of applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

Individuals who perform special processes and the procedures and equipment connected with special processes shall be qualified in accordance with the specified codes, standards, specifications and special requirements. The major contractors shall require their suppliers to comply with the requirements for the control of special processes by specifying these requirements in their procurement documents. These requirements shall be applicable at the major contractors' facilities, suppliers' facilities and at the construction site.

9.2 Control of Special Processes.

The major contractors and their suppliers shall use approved written and qualified procedures, qualified personnel and qualified equipment for

special processes. Special processes include, but are not limited to:

a. Welding.

b. Heat treating.

c. Radiography.

d. Ultrasonic testing.

e. Eddy current testing.

f. Magnetic particle examination.

g. Liquid penetrant examination.

h. Cleaning.

9.3 Special Process Procedures.

The written procedures for special processes and the qualifications of personnel, procedures, and equipment shall be reviewed and approved by the responsible organization prior to their use.

Special process control procedures shall specify the preparatory steps, processing details, conditions to be maintained during the steps of the process, inspection and test requirements.

The responsible organization shall perform surveillance over its suppliers to assure that approved procedures are being adhered to and that there is documented evidence (via checklists, travel tags, or the equivalent) of compliance.

9.4 Qualifications of Personnel, Procedures and/or Equipment.

Personnel responsible for the performance and verification of special processes shall be certified to applicable codes, standards and specifications if certification is required by applicable codes, standards and specifications. Certification of personnel by authorized agencies for these processes shall include necessary training followed by an examination of each individual. The period of validity for certification of personnel shall be in accordance with criteria described in applicable codes, standards and specifications. Personnel failing retest shall be removed from operations pending recertification.

For special processes not covered by existing codes or standards, or when the quality requirements exceed the requirements of established codes or standards, the necessary qualifications of personnel, procedures, and/or equipment shall be defined.

9.5 Records.

Special process control records shall provide objective evidence that special processes were performed in compliance with approved special process control procedures by qualified personnel. Results of nondestructive examinations, inspections and tests shall be recorded in accordance with applicable codes, standards and specifications. Special process control

shall be retained by the vendor and/or supplied to LP&L as required by contract or purchase order.

Qualifications records of procedures, equipment and personnel associated with special processes shall be established, filed and kept up-to-date.

9.6 Audits.

Compliance with applicable requirements for control of special processes shall be verified by audits performed by LP&L or its designated representative(s).

10.1 General.

LP&L's major contractors shall establish programs for inspection during manufacturing and construction to assure conformance with applicable instructions, procedures, drawings, specifications and contract requirements. The inspection programs shall incorporate applicable requirements of Appendix B to 10CFR50 and shall follow the guidance of applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

Inspections or tests shall be performed for each work operation as necessary to verify quality.

10.2 Inspections, Procedures, Instructions and Checklists.

Inspection requirements shall be implemented using detailed procedures, instructions, and/or checklists which are made available for use with the necessary drawings and specifications prior to performing the inspection.

The procedures, instructions, and/or checklists shall contain:

a. Acceptance and rejection criteria, or a reference to a specific specification or code section.

b. Identification, responsibilities, and authority of individuals or groups responsible for performing the inspection.

c. The points during fabrication, erection, installation, or tests at which the inspections are to be performed.

d. Identification of characteristics and activities to be inspected.

e. A description of the inspection method.

f. A method for recording the identity of the recording inspector or data recorder and for recording the inspection results and observations.

g. A method of recording evidence of completing and verifying a manufacturing, inspection or test operation.

h. A method of reporting nonconformances discovered during the inspection.

i. A method of identifying, segregating, and disposing of a nonconforming item when found.

10.3 Indirect Inspection.

When direct inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment and personnel shall be used. To assure adequate control, both inspection and process monitoring shall be used when control is inadequate without both.

10.4 Inspection by Sampling Methods.

Sampling inspection methods may be used when tests are destructive or when quality assurance records and inherent characteristics of the item indicate

that a reduction in inspection or testing can be achieved without jeopardizing the assurance of quality. Where a sample is used to verify acceptability, the sampling procedures shall provide adequate justification for the sample size and selection process.

10.5 Inspection of Replaced, Reworked, Modified or Repaired Items.

Modifications, repairs and replacements shall be inspected in accordance with the original design and inspection requirements or acceptable alternatives.

10.6 Inspector Qualifications.

Inspections shall be performed by qualified individuals who are independent of the individuals or groups performing the activity being inspected. Inspectors shall be qualified through experience, education, and training to perform the assigned inspection tasks. Where required by code, inspectors shall be formally examined and certified. A current file shall be maintained of the credentials for each inspector.

10.7 Inspection Plan.

A documented inspection plan shall be prepared by vendors for each item included in the QA program either as a separate document identified with the parts, components, or assemblies, or as an integral part of work instruction documents. The inspection plan shall specify the inspection

points and may consist of a flow chart, diagram or narrative description of the sequence of procurement, fabrication, processing, assembly and activities.

The plan shall be based on a review of the system and component design specifications, procurement documents, drawings and construction work plans and schedules to assure:

a. That applicable installation, inspection and testing activities have been identified.

b. That the activities can be accomplished as specified.

c. That time, resources, and personnel are sufficient to accomplish the required actions.

The vendors shall submit their manufacturing plans to the LP&L major contractor designated in the purchase order prior to manufacture in their shops or the shops of their suppliers so that the A-E or NSSS Vendor may have the opportunity to identify mandatory inspection hold points. Work may not proceed beyond these hold points without the consent of the designated A-E or NSSS Vendor.

10.8 Identification of Hold Points.

The major contractors shall establish and witness inspection control points to assure the quality of safety-related items and the effectiveness of the

inspection program.

10.9 Records.

Inspection records shall, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken with noted deficiencies. Inspection records shall be retained in accordance with the requirements addressed in QR 17.0 and/or with requirements of applicable contracts or purchase orders.

10.10 Audits.

LP&L shall audit major contractors to insure that they are complying with the inspection requirements, that they are imposing inspection requirements as applicable on their suppliers and that they are auditing their suppliers' compliance with the inspection requirements.

11.1 General.

LP&L and its major contractors shall establish and implement test programs to demonstrate that structures, systems, and components will perform satisfactorily in service and in accordance with design specifications. The test programs shall include, as appropriate, proof tests and preoperational tests. Each required tests shall be identified and shall be conducted by trained and qualified personnel in accordance with written test procedures.

Test procedures shall implement applicable requirements of Appendix B to 10CFR50; shall follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project; and shall incorporate the requirements and acceptance limits contained in the applicable design documents.

Subcontractors and suppliers shall implement test programs as required in procurement documents.

11.2 Content of Test Procedures.

Written test procedures, prepared by LP&L, the major contractors or suppliers, shall contain or reference as applicable:

a. Provisions to assure that all prerequisites for a given test have been met.

b. Detailed instructions for performing the test.

c. Provisions to assure that adequate test equipment and/or instrumentation is available and used.

d. Provisions for verifying that measuring and test equipment is in calibration.

e. Requirements for trained, qualified and licensed or certified personnel.

f. Requirements for the preparation, condition and completeness of items to be tested.

g. Provisions to assure that required environmental conditions are maintained during test and that adequate test methods are used.

h. Provisions for data collection and storage (data report forms).

i. Requirements and acceptance limits contained in applicable design and procurement documents.

j. Identification of mandatory inspection hold points.

11.3 Evaluation of Test Results.

Test results shall be evaluated following each test by a qualified responsible individual or group to assure conformance with design and performance requirements. The evaluation shall determine the following:

a. That the test procedure was adequate.

b. That the recorded data reveals the adequacy of the equipment or system to meet the specified requirements in the acceptance criteria.

c. That nonconforming or incident conditions are reported and corrected.

Recorded test data shall be reviewed following the test. Test data found to be in conformance to the requirements shall be accepted and approved by a responsible person and this action shall be documented.

If test results do not meet acceptance criteria, the responsible organization shall initiate appropriate corrective action in accordance with written procedures.

11.4 Tests of Modified, Repaired or Replaced Items.

Modified, repaired or replaced items shall be tested in accordance with the original design and testing requirements or acceptable alternatives.

11.5 Records.

Test records shall include report forms completed during tests. The data report forms shall have provisions for identifying the person responsible for conducting the test and for indicating the date or period when the test was performed. The original test data report forms shall be reviewed for completeness, shall be identified and indexed and shall become a part of the permanent plant records.

11.6 Audits.

The LP&L Quality Assurance Group shall audit the test programs of LP&L and its major contractors to assure compliance with test control requirements.

The major contractors shall audit their suppliers for compliance with contract requirements for control of test programs.

12.1 General.

Equipment used for measurement, test, inspection and monitoring of safety-related structures, systems, and components shall be identified, controlled, calibrated, adjusted, and maintained in accordance with formal documented calibration programs.

The calibration programs of IP&L and LP&L's major contractors shall be implemented with written procedures. As appropriate, these procedures shall incorporate the requirements of Appendix B to 10CFR50 and shall follow the guidance of applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

12.2 Elements of Control.

Requirements for the control of Measuring and Test Equipment (M&TE) shall apply to M&TE used by the individuals or organizations participating in the installation, inspection, testing, or maintenance of safety-related structures, systems and components for LP&L's nuclear generating station(s). The extent to which these requirements apply will depend upon the nature and scope of the work to be performed and the importance of the item or service involved.

LP&L's major contractors shall establish and implement calibration programs and shall specify requirements for control of M&TE in their applicable

procurement documents (if their suppliers are to perform testing functions).

LP&L shall establish and implement a calibration program for M&TE to be used for preoperational testing.

12.3 Requirements.

Calibration programs shall be designed to determine and to assure the accuracy of M&TE and reference standards. Calibration programs shall provide for the prompt detection of inaccuracies and shall provide for timely, effective corrective action. The calibration programs shall include the following requirements as a minimum:

a. A list of M&TE and reference standards which specifically identifies items within the calibration program.

b. Reference standards and documented procedures for calibrating M&TE. Procedures such as published standard practices, written instructions that accompany purchased equipment, or other acceptable instructions may be used.

12.4 Procedures.

Calibration procedures shall describe the calibration techniques, the frequency of calibration, and the maintenance and control of measuring and test equipment (tools, gages, fixtures, reference and transfer standards and non-destructive test equipment) which shall be used in the measurement,

inspection and monitoring of safety-related structures, systems, and components.

Calibration procedures shall include at least the following information:

a. Identity of the item to be calibrated.

b. Calibration equipment and reference standards to be used.

c. Checks, tests, measurements and acceptance tolerances.

d. Sequence of operations.

e. Special instructions when necessary.

12.5 Elements of Control.

The calibration program shall include as a minimum, the following elements of control:

a. Reference standards used for calibrating M&TE shall have an accuracy level, acceptable calibration ranges, and precisions that are equal to or better than those required of M&TE.

b. M&TE and reference standards shall be stored, calibrated, and used in environments which will not adversely affect their accuracy.

c. M&TE and reference standards shall be calibrated at prescribed intervals to verify the required accuracy. The interval between calibrations shall be based upon experience, inherent stability, purpose of use, and accuracy required of the equipment or reference standard. Equipment

shall be calibrated on or before the designated calibration date. Reference standards shall be calibrated by qualified external organizations which are independent of the user organizations.

d. M&TE shall be calibrated using reference standards whose calibration has a known valid relationship to nationally recognized standards or accepted values of natural physical constants. If no national standard exists, the basis for calibration shall be documented.

e. M&TE and reference standards shall be labeled to indicate their control status. The label shall indicate the date of last calibration, by whom it was calibrated and when the next calibration is due. When labeling is not practical, an identifying code shall be used. If neither labeling nor coding is practical, the calibration procedures shall provide for monitoring of records to assure control.

f. M&TE and reference standards found to be out of calibration shall be identified as nonconforming and removed from service. Equipment tested or calibrated by the nonconforming equipment since the last calibration shall be identified and sufficient investigations performed to either re-establish the acceptability of the equipment or to confirm the nonconformance. The results of such investigations shall be documented. M&TE and reference standards which have been subjected to possible damage, shall be identified as nonconforming and removed from service

until such time as corrective measures have been taken. M&TE and reference standards consistently found to be out of calibration shall be identified as nonconforming, removed from service, and repaired or replaced.

h. M&TE and reference standards shall be controlled to assure consistent results of acceptable accuracy. Controls shall include, as appropriate:

(1) Environmental and handling controls.

(2) Training and qualification of personnel.

(3) Checking calibration status before use.

(4) Documenting and recalibrating damaged M&TE and reference standards.

(5) Limiting use to authorized personnel.

12.6 Records.

Records shall be maintained as described in QR 17.0 to show that established schedules and procedures for the calibration of M&TE and reference standards have been followed. The records shall contain a history of calibration or other means of control for each item showing the calibration interval, date of last calibration, and the conformance or nonconformance to required tolerances prior to and following adjustments.

Each record shall identify the equipment or reference standard to which it applies, the procedure or instruction followed in performing the calibration,

the identity of the person performing the calibration, and the calibration date.

Equipment identification lists, procedures, calibration records, personnel qualifications and nonconformance reports shall be retained as required by codes, standards and specifications and in accordance with the requirements of QR 17.0 and applicable procedures.

12.7 Audits.

The effectiveness of the calibration program maintained by LP&L and its major contractors shall be assessed by LP&L through its audit program. The major contractors shall audit their suppliers for compliance with contract requirements for control of M&TE.

13.1 General.

LP&L and LP&L's major contractors involved in the design, manufacturing, and construction of LP&L nuclear generating stations shall include appropriate packaging, shipping, receiving, storage and handling requirements for safety-related items in their applicable drawings, specifications, procurement documents, procedures or instructions. Suppliers of safety-related items shall also include appropriate handling, storage and shipping requirements in their drawings, specifications, procurement documents, procedures or instructions.

The handling, storage and shipping requirements shall reflect the protection and control which is necessary to assure that the required quality of safety-related items for the plant is preserved from the time items are fabricated until they are incorporated into the nuclear generating stations. The requirements, implemented with appropriate instructions and procedures, shall comply with the requirements of Appendix B to 10CFR50 and shall follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

13.2 Instructions and Procedures.

Instructions and procedures shall be developed in accordance with design and specification requirements by the major contractors and their suppliers

to implement handling, storage, and shipping requirements. The instructions and procedures shall govern the work of any individual or organization participating in the cleaning, preservation, packaging, marking, shipping, receiving, inspection, storage and handling of safety-related items.

Activities related to handling, storage and shipping shall be planned in order that design requirements, applicable codes and standards, and supplier requirements are reviewed and incorporated as appropriate into instructions and procedures.

Instructions and procedures shall provide adequate descriptions of work to be performed so that qualified individuals can accomplish the work without damage or loss to safety-related items.

13.3 Identification and Classification.

Safety-related items shall be identified and classified as to the protection level assignment which is based upon the important physical characteristics of the item. Protective measures shall be specified in order to prevent damage, loss, deterioration or contamination.

Items once classified shall be restricted to that level or higher for each of the particular handling, storage and shipping operations. The component of an assembly having the highest classification shall govern the protection level of the assembly.

Materials and supplies used in conjunction with handling, storage and shipping activities shall be compatible with the item and shall not contribute to the deterioration of the item.

13.4 Packaging.

Safety-related items shall be protected against corrosion, contaminants, physical damage or any effect which would lower the quality or cause the item to deteriorate during the time that the item is shipped, handled or stored. The degree and methods of protection specified will vary according to the important physical characteristics of the item, storage conditions and duration, shipping method and environment and handling conditions.

Documented instructions and procedures for cleaning and preservation shall be established and implemented for safety-related items subject to deterioration or damage through exposure to air, moisture, or other environmental conditions during fabrication, processing, assembly, and storage periods. Items shall be inspected for cleanness immediately prior to preservation and/or packaging. Any dirt, oil residue, entrapped water, metal chips, or other forms of contamination shall be removed using documented cleaning methods, as appropriate.

Items subject to deleterious corrosion shall be protected by using contact preservatives or special protective environments such as inert gas atmos-

phere, specific moisture content levels and temperature levels. Special packaging instructions shall accompany items which require special environments, protective equipment, or maintenance operations.

Appropriate containers, crating, skids, cushioning, blocking, and bracing shall be specified in procurement documents, as necessary, to prevent damage, deterioration or loss of safety-related items.

In order to maintain identification of the item during shipping, receiving, handling and storage, the item and the container shall be plainly and permanently marked. Marking shall be adequate to identify, maintain and preserve the shipment, including the indication of the presence of special environments or the need for special control.

Special shipping, receiving, inspection, storage and handling instructions, as required, shall accompany the item during shipping, receiving, handling and storage.

13.5 Shipping.

Suppliers shall implement documented instructions and procedures which include the requirements for protection of safety-related materials and equipment during shipping. The specified method of transportation shall be consistent with the protection level of the item, and with the packaging methods employed.

Special requirements for loading and unloading, rigging, packaging, handling, preservation, coatings, sealed openings, stacking, and protection against theft and vandalism during transit shall be documented in written procedures.

Special nuclear materials and sources shall be the responsibility of the supplier and shall be shipped as specified by the NRC fuel license and the requirements of other regulatory agencies.

13.6 Receiving.

Receiving inspection shall begin when the item arrives at the storage facility or construction site, prior to unloading or unpacking.

A preliminary visual examination shall be performed prior to unloading to determine if any obvious damage has occurred during shipping. Receiving inspection shall be performed in accordance with procedures which implement the requirements of QR 7.0.

A system for identifying the inspection status of items shall be employed which clearly indicates whether the items are acceptable or unacceptable.

Nonconforming items shall be processed in accordance with appropriate procedures which implement the requirements of QR 15.0.

A record of receiving inspection, identification, tagging, corrective actions, and justifications for "conditional acceptance" shall be prepared and stored with other site quality assurance records.

13.7 Storage.

The protection levels of storage shall be designated in order to minimize the possibility of damage to, or of lowering the quality of, items due to corrosion, contamination, deterioration or physical damage during storage.

Instructions and procedures shall provide for protection against damage, maintenance of preservation, periodic inspection and periodic accountability. For items requiring long periods of storage (in excess of six months) procedures shall specify protective environment, maintenance and inspection necessary to prevent damage or deterioration.

13.8 Handling.

Handling instructions and procedures shall be specified in procurement documents for items that require special handling.

During the periods of fabrication, processing, construction, modification, or installation, special carts, cranes, hoists, boxes, containers, slings, handling tools, special equipment, and transportation vehicles shall be specified as necessary to prevent damage due to handling. Special handling

tools and equipment shall be inspected and tested in accordance with written procedures at specified intervals to verify that the tools and equipment are adequately maintained and are in an acceptable condition. Qualified material handling personnel at construction, installation, storage and test sites shall be provided with appropriate written handling instructions and procedures.

13.9 Records.

Copies of completed instructions and procedures, reports, personnel qualification records, test deviation and exception records, and inspection and examination records shall be prepared and stored in accordance with appropriate procedures which implement the requirements of QR 17.0.

13.10 Audits.

LP&L shall audit its major contractors during procurement, manufacturing and construction to assure compliance with documented handling, storage and shipping requirements. The major contractors shall audit their suppliers to assure that their suppliers are implementing the handling, storage and shipping requirements contained in the procurement documents.

14.0 INSPECTION, TEST AND OPERATING STATUS

14.1 General

This Operational Nuclear Quality Assurance Manual for Waterford 3 establishes requirements for safety related inspection, test and operating status for Waterford 3. These requirements are consistent with the provisions of Regulatory Guides 1.28, dated 6/72, and 1.33, dated 1/77, except as identified in FSAR Chapter 17.2 Exceptions, Alternatives, and Clarifications.

Procedures have been established to document methods for implementing the QA Manual requirements. The procedures provide assurance that required inspections and tests have been successfully performed, that the acceptability of an item with regard to inspection and test is known throughout test, installation and operation, that bypassing of required inspections, tests and other critical operations is controlled under the cognizance of the QA organization.

14.2 Identification System

A system is established at Waterford 3 which controls by approved procedures the application and removal of inspection and welding stamps and status indicators such as tags, markings, labels and stamps. The status of inspections and tests performed upon individual items of the plant shall be indicated by the use of markings such as stamps, tags, labels, routing cards, which are traceable to records of the inspection and test.

Materials, equipment or systems are identified upon receipt and throughout construction, preoperational testing and operations in order to indicate their receipt, installation, inspection, and operating status. During construction, installation and operations, control over the use of inspection stamps and equipment status indicators is maintained according to written procedures.

Nonconforming material or equipment is appropriately identified and segregated, where practical, until the nonconforming condition(s) have been resolved. Where physical segregation in a controlled area is not possible, the identification of nonconforming items shall be indicated by the use of marking such as stamps, tags, labels, routing cards which are traceable to the nonconformance documents.

When a structure, system or component is not serviceable for any reason, its status is identified by the use of tags, markings and/or labels to prevent inadvertent use. Additional suitable means of identification or control include temporary modification, bypass and jumper logs or system status boards.

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

REQUIREMENT CHANGE NOTICE (RCN)

Requirement Title: Inspection, Test and operating Status

No. QR-14.0

Rev. 0 RCN# 1

Effective Date 6/27/83

Page 1 of 1

Page No.	Current Page Rev. No.	Section / Paragraph	Description of Change
All	0	Entire Requirement	Remove QR 14.0, Rev. 0 (Preoperational and Operations Phase) replace with QR 14.0, Rev. 1.

Reason For Change: Requirement QR 14.0 has been revised to coincide with existing conditions.

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
[signature]	Thomas F. Gerrets	[signature]		
Date: 6-22	QA Manager Date: 6-22-83	Date: 6/22/83	Date:	Date:

QUALITY ASSURANCE

MIDDLE SOUTH UTILITIES SYSTEM

QUALITY ASSURANCE

REQUIREMENT CHANGE NOTICE (RCN)

Requirement Title: Appendix A
Terms and Definitions

No. Appendix A
Rev. 0 RCN# - 1
Effective Date 6/27/83
Page 1 of 1

Page No.	Current Page Rev. No.	Section / Paragraph	Description of Change
All	0	Entire Requirement	Remove Appendix A, Rev. 0 (Preoperational & Operations Phase) replace with Appendix A, Rev. 1.

Reason For Change: Appendix A, Rev. 0 has been revised.

Prepared By:	Approved By:	Approved By:	Approved By:	Approved By:
T. Delaune	Thomas F. Gerrets			
Date: 3/18/83	QA Manager Date: 3-18-83	Date: 6/27/83	Date:	Date:

QUALITY ASSURANCE

15.1 General.

LP&L and its major contractors shall develop programs for the control of nonconforming materials, parts or components in order to prevent the inadvertent use or installation or nonconforming materials, parts and components in LP&L's nuclear generating station(s). Nonconformances shall be documented, processed and resolved in accordance with approved written procedures.

As appropriate, these procedures shall implement the requirements of Appendix B to 10CFR50 and shall follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

15.2 Control of Nonconforming Items.

LP&L's major contractors and their suppliers shall perform the following activities when materials, parts, components, or systems do not conform to drawings, specifications or workmanship standards:

a. Identify the nonconforming items and clearly describe the nonconformance.

b. Document the nonconformance.

c. Segregate (where practical) and identify the nonconforming items as discrepant until properly dispositioned.

d. Review the nonconformance.

e. Provide approved written dispositions for the nonconformance.

f. Provide copies of the nonconformance reports for the nonconformances that are dispositioned "Use-as-is" or "Repair" to LP&L or its designated agent.

g. Notify affected organizations.

15.3 Quality Trends.

LP&L and/or the major contractors shall periodically analyze nonconformance reports to show quality trends and shall report results of these analyses to their respective management for review and assessment.

15.4 Identification and Control.

Items which are found to be nonconforming to specifications or workmanship standards shall be positively identified and segregated when practical or handled as nonconforming to prevent their inadvertent use or installation. A technical evaluation by LP&L's major contractors shall be made to determine whether a nonconforming item may be accepted "as-is", reworked or repaired to an accepted condition, or rejected. The individuals or organizations that have the authority and responsibility for approving the disposition of nonconforming items shall be identified by the major contractors.

Items accepted "as-is" or reworked or repaired to an accepted condition shall be so identified and reported to LP&L. Items reworked or repaired shall be reinspected and retested as originally inspected and tested or by a method which is at least equal to the original inspection and testing method. Nonconforming items shall also be reinspected in accordance with additional requirements, if any, established by the technical evaluations performed by LP&L's major contractors. Nonconforming items shall be reviewed and accepted, rejected, repaired, reworked, reinspected and/or retested in accordance with documented procedures. The rework, repair or inspection shall be documented and made part of the inspection records. Rejected items shall be identified by tagging, shall be removed from the manufacturing or construction area, or shall be returned to the supplier in order to prevent inadvertent use or installation.

15.5 Records.

Documentation of nonconformances shall be included in the inspection records of contractors and suppliers. The documentation shall identify the nonconforming item; describe the nonconformance, the disposition of the nonconformance, and the inspection requirements; and include signature approval for the disposition.

15.6 Audits.

The LP&L Quality Assurance Group shall be responsible for auditing LP&L and the major contractors' implementation of requirements for control of nonconforming materials, parts and components. The major contractors shall be required to monitor supplier implementation of requirements for control of nonconforming items and services. LP&L shall review selected resolutions and dispositions of nonconforming items through audits of major contractors and the review of reports from the major contractors.

16.1 General.

LP&L, its major contractors and their suppliers shall use documented corrective action procedures to assure that nonconforming items and conditions are promptly identified and are corrected by the responsible group. As appropriate, corrective action procedures shall implement the requirements of Appendix B and 10CFR50 and shall follow the guidance provided by applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

16.2 Conditions Adverse to Quality.

Within the LP&L organization, the Quality Assurance Group shall be responsible for identifying, documenting and reporting nonconforming conditions. Nonconformances shall be corrected and the correction shall be documented by the responsible group.

The major contractors and their suppliers shall establish written procedures for identifying, for determining the cause of, for evaluating and for correcting conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances. Each major contractor shall indicate in his procedures who has the authority and responsibility for performing corrective actions and how these actions are implemented.

16.3 Significant Conditions Adverse to Quality

Documented procedures of LP&L and its major contractors and their suppliers for corrective action of significant conditions adverse to quality shall include the following requirements:

a. Determine the cause(s) of the significant adverse conditions.

b. Take prompt corrective action to prevent repetition of the adverse conditions.

c. Document and report the adverse condition along with its determined cause(s) and corrective action to appropriate levels of management for review and assessment.

Significant construction and/or design deficiencies shall be reported to the NRC in accordance with 10CFR50.55(e).

Defects and noncompliances shall be reported to the NRC in accordance with 10CFR21. 2

LP&L and its major contractors shall follow-up to assure prompt corrective action, to verify proper implementation of corrective action, and to complete corrective action documentation.

16.4 Audits

The LP&L Quality Assurance Group shall audit major contractors to assure implementation of corrective action requirements and to identify conditions which require corrective action. The results of these audits shall be

reported by the LP&L Quality Assurance Group to the management of LP&L and to the management of the audited major contractor.

The major contractors shall audit suppliers to assure conformance to corrective action requirements contained in procurement documents.

17.1 General.

LP&L and its major contractors shall maintain quality assurance records which provide objective evidence of the quality of safety-related items, and of the activities affecting quality for the nuclear generating stations.

In order to maintain quality assurance records, LP&L and its major contractors shall employ records management procedures which meet the requirements of Appendix B to 10CFR50 and follow the guidance of applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a specific nuclear project.

17.2 Retention of Records.

The majority of records are to be stored at the site. Records which shall not be sent to the site, but shall be retained by the major contractors may include, but are not limited to the following:

a. Permanent records.

(1) Design calculations.

(2) Verification of design calculations.

(3) Technical analysis, evaluations and reports.

b. Non-permanent records.

(1) QA audits.

(2) Vendor audit reports.

(3) Pre-award QA surveys.

Radiographs shall be retained by the manufacturer according to the retention and disposition requirements specified in procurement documents. The procurement documents shall specify that the manufacturer either retain the radiographs for the life of the project and throughout commercial operation of the nuclear generating station or shall send the radiographs to LP&L after being retained by the manufacturer in accordance with contractural requirements.

17.3 Corrections and Supplements.

In general, quality assurance records required by codes and regulatory requirements shall be corrected or supplemented in accordance with written procedures which provide for appropriate review and approval by the originating organization. The correction or supplement shall include the date and the identification of the person authorized to issue each correction or supplement.

17.4 Control of Records.

Control of quality assurance records shall be maintained throughout the duration of storage according to documented procedures prepared by LP&L, the major contractors or their suppliers. Each organization responsible for the receipt of the quality assurance records shall designate a person or group responsible for receiving the records. The designated person or

group shall be responsible for the development of a system to control the receipt and storage of records. A listing of the required records shall be established and available prior to the receipt of records.

Quality assurance records retained by LP&L and for LP&L by its major contractors and their suppliers shall be identifiable and retrievable. Records shall contain sufficient information to permit identification of the record with the item(s) or activity to which it applies.

17.5 Protection of Records.

Records shall be maintained current and complete, and shall be made available for audit by LP&L or its representative at any reasonable time. The records shall be maintained in facilities that provide suitable environment to minimize deterioration and to prevent damage or loss. Written storage procedures shall be used to accomplish record maintenance.

The storage, location, duration, preservation, retrieval, transmittal, and disposition of the quality records of LP&L and its major contractors shall be established by procedures which are consistent with applicable codes and standards.

Quality assurance records of suppliers shall be transferred, retained, and maintained in accordance with requirements of applicable codes, standards and procurement documents.

Responsibilities for record transmittals, retention and maintenance shall be assigned during design, procurement, manufacturing, installation, construction, test and start-up. The organization responsible for retaining the records, the location of the records, the retention times of records and the location of the record copies of records shall be indicated in a records index.

17.6 Audits.

The LP&L Quality Assurance Group shall be responsible for assuring by its audits, the retention and maintenance of quality assurance records by LP&L and its major contractors. The major contractors shall be responsible for assuring the retention and maintenance of quality assurance records by their suppliers.

LP&L shall audit its major contractors for compliance with quality assurance record procedures and requirements. The major contractors shall audit their suppliers for conformance with quality assurance records requirements in procurement documents.

18.1 General.

LP&L and its major contractors shall implement a system of comprehensive, planned and periodic audits to verify compliance with all aspects of the LP&L Quality Assurance Program and to determine the effectiveness of the Program. 2

Quality Assurance audits shall verify that safety-related activities associated with LP&L's nuclear generating station(s) are performed according to documented instructions, procedures, drawings, and policies which are in accordance with applicable codes, standards, regulations and procurement documents.

Audit activities shall be conducted in accordance with documented procedures which implement the requirements of Appendix B to 10CFR50 and follow the guidance of applicable guidance documents listed in Table 2-1, except where alternate conditions are stated in the PSAR for a particular nuclear project.

18.2 Audit Scope.

In addition to auditing safety-related activities within their own organizations, LP&L's major contractors shall audit their suppliers' and their subcontractors' QA programs, procedures and activities for conformance to procurement document requirements and to verify and evaluate the vendor's

QA programs, procedures and activities.

Audits shall include the objective evaluation of work areas, activities, processes and items and the review of documents and records. Audits shall also include an objective evaluation of safety-related practices, procedures and instructions, the effectiveness of implementation, and the conformance with policy directives.

Audits shall be performed in areas where the requirements of Appendix B to 10CFR50 are being implemented. These areas include, as a minimum, the activities associated with:

a. The determination of site features which affect plant safety; e.g., core sampling, site preparation and meteorology.
b. The preparation, review, approval, and control of the PSAR, designs, specifications, procurement documents, instructions, procedures and drawings.
c. Request for proposal and evaluation of bids.
d. Indoctrination and training programs.
e. Interface controls among LP&L and its major contractors.
f. The remaining applicable requirements of Appendix B to 10CFR50.

The following audits shall be conducted by LP&L and/or its major contractors to provide a comprehensive independent verification and evaluation of

quality assurance procedures and activities, and to verify compliance with the requirements addressed in the LP&L Preoperational Quality Assurance Program:

a. External audits of the QA programs of the A-E and NSSS Vendor.

b. External audits of the QA programs of vendors producing safety-related equipment.

c. External audits of the site QA programs of the major contractors.

d. Internal audits of the LP&L Preoperational Quality Assurance Program.

18.3 Audit Planning and Scheduling.

The Quality Assurance Manager is responsible for determining the need for audits by LP&L to assure the implementation of applicable quality assurance requirements on LP&L's nuclear projects.

The LP&L QA audit program shall include a documented schedule of audits showing the organizations to be audited, the date of the audit and area(s) to be audited. The schedule shall be based on the status and safety importance of the activities to be audited and shall be initiated early enough to assure effective quality assurance control during the design, procurement and contracting phases of LP&L's nuclear project(s).

LP&L QA audits shall be planned according to audit procedures. Plans for the audit shall consist of checklists or procedures that will assure

consistency in evaluation and assure that important items are covered during the audit. Unresolved items noted during previous audits shall be reviewed prior to re-audit of an activity and shall be included as open items in the audit and/or re-audit checklist.

18.4 Audit Performance.

LP&L QA audits shall be performed according to audit procedures using prepared checklists or audit procedures which enable the auditor(s) to determine the adequacy of the activity being evaluated.

The audit checklist shall be a guide to aid the auditor and shall not restrict the audit sequence when additional investigation is necessary.

Quality Assurance audits shall consist of the following three sections:

a. Pre-Audit Conference - This conference shall be held at the audit site with the cognizant manager or supervisor of the audited organization prior to the audit. Topics to be discussed shall be audit scope, audit sequence, and channels of communication.

b. Audit Process - This section of the audit shall cover the actual discussion about, and observation of, objective evidence to assure that the QA program requirements are being effectively implemented by the audited organization.

c. Post-Audit Conference - At the conclusion of the audit, a conference shall be held with the cognizant manager or supervisor of the audited organization to discuss and to document audit findings.

18.5 Audit Personnel.

LP&L QA audits shall be conducted by qualified LP&L QA auditors who are experienced, trained, and familiar with requirements and standards applicable to the area being audited. They shall be independent of any direct responsibilities for the activities which they audit. Auditors shall participate in the LP&L Auditor Training Program. They shall maintain their proficiency through review and study of codes and standards related to quality assurance and through active participation in LP&L QA audits.

LP&L QA auditors may be assisted by consultants and engineering specialists, as necessary, when they audit technical areas.

18.6 Audit Reports, Follow-Up and Records.

An audit report shall be written and signed by the audit team leader for each audit. The audit report shall be sent to the management of LP&L and to the management of the audited organization. Follow-up action on the report shall include written communication and/or reaudit to close out unresolved items. Deficient areas shall be reaudited on a timely basis to verify implementation of corrective action which minimizes recurrence of deficiencies.

Responsible management of the audited organization shall take the necessary actions to correct deficiencies revealed in QA audits.

Records shall be generated and copies retained for the LP&L QA audits. Records shall include audit program schedules, audit plans and checklists, procedures, audit reports, written responses, corrective action reports, and other documents related to the audit.

18.7 Management Audits

In accordance with the management audit procedure(s), an independent review and evaluation of the LP&L Quality Assurance Program shall be performed no less frequently than twice a year at the direction of the Vice President-Power Production. These audits shall be conducted in order that the Vice President-Power Production may assess the scope, implementation, and effectiveness of the Program. 2

18.8 Analysis of Audit Data

LP&L General Office and Site Quality Assurance Engineers/Technicians shall analyze audit data in order to determine the effectiveness of the Quality Assurance program. General Office and Site Quality Assurance audit reports shall include an evaluation of the effectiveness of the QA program audited based on the element(s) and/or the activity(ies) audited. LP&L Quality Assurance audit reports shall be presented to LP&L management for review and assessment. 2

LP&L's major contractors shall also analyze their audit/inspection data and shall indicate in reports to their respective management the quality trends and the effectiveness of their QA programs based on elements and/or activities audited. 2

1.0 Purpose.

This list provides a compilation of terms and definitions used by LP&L personnel which are important to the understanding of quality assurance practices for the design, construction and operation of nuclear power plants.

2.0 Scope.

The terms herein defined are used in the LP&L Preoperational Quality Assurance Program.

3.0 Terms and Definitions.

Accept-As-Is - A disposition indicating material discrepancies that do not substantially affect safety, performance and maintainability; and that the material can be used for its intended purposes.

ANSI Standards - Standards developed under the sponsorship of the American Society of Mechanical Engineers (ASME) by the American National Standards Institute Committee N45 to establish requirements for overall quality assurance programs for nuclear power plants.

Approval - An act of endorsing or adding positive authorization or both.

Appurtenance - A part that is attached to a component which has been completed.

Architect-Engineer (A-E) - The organization responsible for the design, engineering, and procurement of equipment for the balance of plant of a power plant and for the coordination of contractor design interfaces.

As-Built Data - Documented data that describes the condition actually achieved in a product.

ASME Code Classes - The classifications defined by ASME boiler and Pressure Vessel Code Section III, "Nuclear Power Plant Components." The ASME Code classes define specific requirements for the design, fabrication, inspection, testing and documentation of equipment and components.

Assembly - A combination of subassemblies or components, or both, fitted together to form a unit.

Audit - A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of the quality assurance program have been developed, documented and effectively implemented in accordance with specified requirements. An audit does not include surveillance or inspection for the purpose of process control or product acceptance.

Auditor - One authorized to examine quality assurance programs to verify that requirements are being met.

Balance of Plant (BOP) - All components and services of the nuclear power station except the NSSS, work and support services and nuclear fuel provided by the reactor supplier.

Bid Evaluation - A formal evaluation of proposals received in response to an inquiry to determine the vendor to whom the purchase order will be awarded.

Bidders List - A list of suppliers proposed by the A-E and LP&L for procurement of a specific component, part, appurtenance, material, or labor-services. LP&L approves the listing.

Bid Package - The total of drawings, specifications, codes, standards, quality and other requirements that describes the item on which a prospective contractor/supplier will bid.

Calibration - Comparison of an item of M&TE with a reference standard or with an item of M&TE of equal or closer tolerance to detect and quantify inaccuracies and to report or eliminate those inaccuracies.

Certificate of Conformance - A written statement, signed by a qualified party, certifying that items or services comply with specific require ments.

Certificate of Compliance - A written statement, signed by a qualified party, attesting that the items or services are in accordance with specified requirements and accompanied by additional information to substantiate the statement.

Certified Materials Test Report - A written and signed document from the materials manufacturer which certifies that the material described thereon complies with the applicable material specification, and provides results of the tests performed.

Certified Personnel - Personnel who have passed an approved formal training program and a formal proficiency test which qualifies them to perform a special technical activity.

Certified Standards - Standards of measurement whose accuracy can be traced to standards at the National Bureau of Standards.

Certified Test Report - A written and signed document, approved by a qualified party, that contains sufficient data and information to verify the actual properties of items and the actual results of all required tests.

Certification - The action of determining, verifying and attesting, in writing, to the qualifications of personnel or material.

Characteristic - Any property or attribute of an item, process or service that is distinct, describable, and measureable, as conforming or non-conforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process, or service.

Checks - The tests, measurements, verifications or controls placed on an activity by means of investigations, comparisons, or examinations, to determine satisfactory condition, accuracy, safety or performance.

Cleanness - A state of being clean in accordance with predetermined standards.

Code - A recognized standard developed by a technical or regulatory group which sets forth the principles and rules of practice within a particular activity.

Code of Federal Regulations, Title 10 Part 50, Appendix B to (10 CFR 50) - The document which delineates U.S. Nuclear Regulatory Commission quality assurance criteria for nuclear power plants and fuel reprocessing plants.

Component - A piece of equipment such as a vessel, piping, pump, valve or core support structure, which will be combined with other components to form an assembly.

Construction - Activities at the building site necessary to erect, inspect and accept a power generating station.

Construction Manager - The organization responsible for planning, managing, and coordinating the efforts of contractors at the construction site.

Construction Phase - A period which commences with receipt of items at the construction site and ends when the components and systems are ready for turnover to operation personnel.

Construction Procedure - A procedure written by the construction organization to describe in detail the erection sequence to be followed.

Construction Tests - Those tests necessary to verify that the installation of each component of a system is complete and complies with the applicable specifications, standards, codes, drawings, and engineering information.

Constructor - The organization responsible for the fabrication, installation, construction, inspection and testing of the structures, systems and components of a power plant.

Consultant - An individual or an organization not permanently assigned to a nuclear project, that provides professional advice or performs specific services.

Contaminants - Foreign materials such as mill scale, dirt, oil, chemicals, and any matter that renders a fluid, solid or surface impure and unclean according to preset standards of acceptable cleanness.

Contract - A binding agreement between two or more persons or companies.

Contractor - Any organization under contract for furnishing items or services. It includes the terms "vendor", "supplier", "sub-contractor", "fabricator", and sub-tier levels of the e where appropriate.

Controlled Documents - Documents under limited distribution; accountable through signed receipt procedures for both original document and any revisions thereto.

Corrective Action - Actions taken after the identification of a condition adverse to quality in order to determine the significance of the conditions, to determine appropriate rectification measures, to establish a date for completing the predetermined measures taken, and to determine appropriate measures to prevent recurrence of the condition.

Corrective Action Program - The controlled measures used to identify, to determine the cause of, to evaluate, to correct and to prevent the recurrence of conditions adverse to quality. Examples of adverse conditions include safety related failures, malfunctions, deficiencies, deviations defective material and equipment, and nonconformances.

Defective Material - A material or component which has one or more characteristics that do not comply with specified requirements.

Design - The technical and management processes which lead to and include the issuance of design output documents such as drawings, specifications and other documents defining technical requirements of structures, systems, and components.

Design Controls - Methods for assuring that design requirements are formalized and translated into design documents with proper review to assure the scheduled release of a valid design.

Design Criteria - Documents which establish overall plant design requirements including NSSS and BOP interfaces; they establish the overall systems parameters and design requirements for major portions of the BOP as necessary for the interrelationship of systems, components, and machines.

Design Documents - Engineering specifications, drawings, calculations and/or instructions.

Design Requirements - Documents that set the functional requirements, operating conditions, safety requirements, performance objectives, design margins, and design life. Included are any special requirements for size, weight, ruggedness, materials, fabrications or construction, testing, maintenance, operating environments, safety margins, and derating factors.

Design Review - An analysis of design with respect to technical adequacy, interface control, inspectability, maintainability, and conformance to applicable codes, standards, regulations, and design criteria.

Design Specification - An engineering document describing function, design requirements, environmental conditions, code classification, boundary definition, and containing sufficient detail to provide a complete basis for construction in accordance with codes and standards.

Design Verification - The process of checking, confirming or substantiating the design to provide assurance that specified requirements have been met. Methods include design review, alternate calculations and testing. This verification shall be performed by individuals or groups other than those who performed the original design.

Designated Representative - An individual or organization authorized by the purchaser to perform functions in the procurement process.

Desk Survey - An evaluation of a supplier's quality control capability made from documented procedures and records of past performance.

Deviation - A nonconformance or departure of a characteristic from specified requirements.

Documentation - Any written or pictorial information describing, defining, specifying, reporting or certifying activities, requirements, procedures, or results.

Equipment - A combination of items of material in either sub-assembly or complete form.

Erector - An organization involved in assembling and building equipment or structures at the site.

Examination - An element of inspection consisting of investigation of materials, components, supplies or services to determine conformance to those specified requirements which can be determined by such investigation. Examination is usually nondestructive and includes simple physical manipulation, gauging and measurement.

External Audits - Audits of those portions of an organization's quality assurance program not retained under its direct control and not within its organizational structure.

Fabricator - An organization involved in the manufacture of material or equipment.

Final Safety Analysis Report (FSAR) - The Safety Analysis Report submitted to the NRC by LP&L as part of the application for a plant operating license.

Flow Chart - A representation of the sequence of activities such as procurement, fabrication, processing, assembly, inspection and test, or the sequence of individual operations within one or more of those functions.

Generating Station - A utility company complex, constructed and operated for the purpose of producing electric power.

Guidelines - Particular provisions which are considered good practice but which are not mandatory in programs intended to comply with this manual. The term "should" denotes a guideline; the term "shall" denotes a mandatory requirement.

Handling - An act of physically moving items by hand or mechanical means, but not including transport modes.

Holdpoint - A point in the manufacturing/fabrication/erection sequence beyond which work may not proceed until the Authorized Code Inspector/purchaser/owner, has witnessed or examined the work and given consent to proceed.

Incident - Occurrence or potential for major damage, serious personal injury, or significant schedule delay.

In-Process Inspection - The inspection of items during processing or construction to give an immediate and accurate reflection of the status and condition of all items being constructed.

Inquiry - The document issued by a purchasing agency which requests proposals from bidders and defines the technical requirements and contractual conditions of the purchase order or contract.

Inspection - A phase of quality control which, by means of examination, observation or measurement, determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes or structures to predetermined quality requirements.

Inspection Planning - The instruction document that defines and prescribes the manner and sequence of performing product and construction tests or in-service inspection.

Inspection report - Documentation of an inspection or surveillance activity.

Inspection and Test Plan - A listing, with optimum sequencing, of all the inspections and tests required to be performed for a specific item, component, structure or service.

Inspector (State or Code) - A qualified inspector employed by a legally constituted agency of a municipality or state of the United States, or Canadian province or regularly employed by an authorized inspection agency and having authorized jurisdiction at the site of manufacture or installation.

Inspector (Owner's or Installer's) - A qualified inspector employed by the owner or installer whose duties include the verification of quality related activities or installations or both.

Instruction - Any document intended to train, direct, guide or prepare personnel for the performance of a given task.

Internal Audits - Audits of those portions of an organization's quality assurance program retained under its direct control and within its organizational structure.

Item - Any level of unit assembly, including structure, system, subsystem, subassembly, component, part, or material.

Lower Tier Procurement - Procurement by a supplier from a subsupplier of items or services.

M&TE - Measuring & Test Equipment.

Major Contractors - The A-E, NSSS vendor, Construction Manager and/or Constructor.

Manufacturer - One who constructs any class of component, part, or appurtenance to meet prescribed requirements.

Material - A substance or combination of substances forming components, parts, pieces, and equipment items. (Intended to include such things as machinery, castings, liquids, formed steel shapes, aggregates, and cement.)

Modification - A planned change in plant design or operation; accomplished in accordance with the requirements and limitations of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

"N" Stamp - Appropriate "N"-symbol stamps authorized by Section III ASME Code for use on nuclear fabrication or installation.

National Standards - Systems, instruments and materials standards maintained at or issued by the American National Standards Institute (ANSI) or other designated institutions, and the values for natural physical constants and conversion factors recommended by the National Bureau of Standards (NBS).

Nonconformance - A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation, or deviation from prescribed processing, inspection or test procedures.

Nondestructive Examination - Those methods of examination intended to detect flaws. The various methods produce images, displays or patterns requiring observation, interpretation, evaluation, and comparison with acceptance criteria. Such methods shall not damage or otherwise effect the end use of the product.

NRC - Nuclear Regulatory Commission

NRC Quality Groups - The classification defined by NRC Regulatory Guide 1.26 which cover "Quality Group Classifications and Standards" for nuclear power plant structures, systems and components.

NSSS - Nuclear Steam Supply System

Objective Evidence - Any statement of fact, information, or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observations; measurements, or tests which can be verified.

Operational Tests - Tests that are performed during the operations of the plant to verify continued satisfactory performance of safety related structures, systems, and components.

Owner - The person, group, company or corporation who will have or has title to the facility or installation under construction.

Package - A wrapping or container including its contents of material or equipment.

Packaged Unit - An assembly of items and parts which can be disassembled without destroying the integrity of the individual parts.

Part - An item which has work performed on it and which is attached to and becomes part of a component before completion of the component.

Plant - The equipment, piping, structure, building and property that comprise an installation or facility.

Preliminary Safety Analysis Report - The Safety Analysis Report submitted by an applicant for a construction permit (See SAR.).

Preoperational Testing - Test conducted prior to fuel loading to demonstrate the capability of structures, systems, and components to meet functional and safety-related performance requirements.

Procedure - A document that specifies or describes how an activity is to be performed. It may include methods to be employed, equipment or materials to be used and sequence of operations.

Procurement Documents - Contractually binding documents that identify and define the requirements which items or services must meet in order to be considered acceptable by the purchaser.

Project - A planned series of activities including all actions necessary to provide, utilize, and maintain a facility or portion thereof.

Proposal - A bid, usually written by a vendor in response to an inquiry, which provides the issuing party with the vendor's proposed compliance to the inquiry and the cost.

Purchaser - The organization or organizations responsible for issuance and administration of a contract, subcontract, or purchase order.

Purchase Order - The agreement between the purchaser and a supplier which defines the requirements and conditions for furnishing material, components, equipment or services.

Q-List - A list which specifically identifies those structures, systems and components whose failure could cause an uncontrolled release of radioactivity, or those items essential for the safe shutdown and immediate and long-term operation following a Loss of Coolant Accident (LOCA).

Qualifications (Personnel) - The characteristics or abilities gained through training or experience or both that enable an individual to perform a required function.

Qualified Party - A person or organization competent and recognized as knowledgeable to perform certain functions.

Qualified Procedure - A procedure which incorporates applicable codes and standards, manufacturer's parameters, and engineering specification and has been proven adequate for its intended purpose.

Quality Assurance - Those planned and systematic actions necessary to provide adequate confidence that an item or facility will perform satisfactorily in service.

Quality Assurance Records - Those records which furnish documentary evidence of the quality of items and of activities affecting quality. A document is considered a quality assurance record when the document has been completed.

Quality Control - Those quality assurance actions which provide a means to control and measure the characteristics of an item, process, or facility to establish requirements.

Receiving - Taking delivery of an item at a designated location.

Repair - The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still may not conform to the original requirement.

Report - A document that gives information for record purposes.

Rework - The process by which a nonconforming item is made to conform to a prior specified requirement by completion, re-machining, reassembling or other corrective means.

Right of Access - The right of a purchaser or designated representative to enter the premises of a supplier for the purpose of inspection, surveillance, or quality assurance audit.

Safety Analysis Report (SAR) - A report, responsive to the requirements of paragraph 50.34 of 10CFR50, which contains sufficient information about the design of the nuclear power plant for the NRC to be reasonably assured that the operation of the facility will not endanger the health and safety of the public.

Safety Related - Those plant features necessary to assure the integrity of the reactor coolant pressure boundry, the capability to shut down the reactor and maintain it in a safely shutdown condition, or the capability to prevent or mitigate the consequences of accidents which could result in off-site exposures in excess of the guideline exposures of NRC Regulation 10CFR, Part 100.

Services - The performance by a Supplier of activities such as design, fabrication, inspection, non-destructive examination, repair, or installation.

Source Acceptance - Acceptance of a product by LP&L or its designated agent at the supplier's plant, prior to shipment.

Source Surveillance - A review, observation, or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material procurement or manufacture.

Special Processes - Fabrication and inspection processes which require special equipment and/or personnel with special skills and training.

Specification - A concise statement of a set of requirements to be satisfied by a product, a material or process indicating, whenever appropriate, the procedure by means of which it may be determined whether the requirements given are satisfied.

Standard - The result of a particular standardization effort approved by a recognized authority.

Start-Up Tests - Tests that are performed after initial fuel loading and proceed through several power level plateaus to 100% power.

Storage - The act of holding items at the construction site or in an area other than its permanent location in the plant.

Storage Facility - Warehouse or yard area designated and prepared for holding material and equipment prior to installation.

Subsystem - A group of assemblies or components or both combined to perform a single function.

Supplier - Any individual or organization under contract for furnishing items or services, including the terms "vendor", "seller", "contractor", "subcontractor", "fabricator", "consultant", and "lower tier vendors".

Surveillance - The physical presence to monitor by observation the designated activities to assure that they are performed in a specified manner.

System - A group of subsystems united by some interaction or interdependence, performing many duties but functioning as a single unit.

Systems Performance Test - A test performed on a completed system including electric, instrumentation, controls, fluid and mechanical subsystems under normal or simulated normal process conditions such as temperature, flow, level, and pressure.

Technical Specifications - The design and performance criteria, operating limits, and principles of an operating license to be observed during initial fuel loading, critical testing, start-up, power operations, refueling, and maintenance operations.

Testing - The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental or operating conditions.

Test Plan - An outline, narrative description, or flow diagram indicating the tests to be performed, the methods to be used and the points in the process where they are to be executed . A test plan may be a test procedure.

Transmit - A state of being conveyed or transported from one place to another.

Transit Carrier (Open) - Trucks, trailers, railroad cars, barges, aircraft or ships which do not afford items protection from the environment.

Transit Carrier (Closed) - Trucks, trailers, railroad cars, barges, aircraft or ships which do provide protection of items from the environment by nature of their closed design.

Trip-Point - A predetermined critical level at which a bistable device changes state to indicate that the quantity under surveillance has reached the selected value.

Use-As-Is - A disposition which may be imposed for a nonconformance when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements including performance, maintainability, fit, and safety.

Vendor - Manufacturer, supplier or subcontracting organization providing materials, equipment or services for the fabrication or construction of permanent plant facilities.

Vendor Documentation - Documents which a vendor is required to generate and/or maintain in accordance with drawing, specification and codes and standards requirements, and to provide in accordance with the purchase order requirements.

Verification - An act of confirming, substantiating and assuring that an activity or condition has been implemented in conformance with the specified requirements.

Waiver - An approved exception to established controls or adoption of special procedures in lieu of controls.

Work Instructions - Written directions to personnel performing work in specific areas such as controls and identification of materials and

equipment during fabrication or installation.

Workmanship - That quality of an item expressing its skillful and artful manufacture.

Because LP&L commits to following the intent and guidance of the documents listed in Table 2-1, significant portions of the listed documents, or documents contained within the listed documents, are paraphrased and/or quoted in the LP&L Quality Assurance Manual.

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FOR INFORMATION ONLY

EBASCO NUCLEAR

QUALITY ASSURANCE PROGRAM

MANUAL NO. 1462

As revised for Louisiana Power and Light Company Waterford Steam Electric Station
Unit 3

TWO RECTOR STREET

NEW YORK