Copy No.____

QUALITY ASSURANCE

MANUAL

OPERATIONS

ARKANSAS
POWER & LIGHT

HELPING BUILD ARKANSAS

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

MAY 30 1984

Dockets: 50-313
50-368

Arkansas Power & Light Company
ATTN: John M. Griffin, Senior
Vice President - Energy Supply
P.O. Box 551
Little Rock, Arkansas 72203

Gentlemen:

By letter dated May 4, 1984 (John R. Marshall to Richard P. Denise, "AP&L Quality Assurance Manual - Operations"), Arkansas Power and Light Company submitted Revision 6 to the Quality Assurance Manual which incorporated comments made by the NRC staff.

We have reviewed this submittal and find that it satisfies the requirements of 10 CFR Part 50, Appendix B, and is therefore acceptable.

If you have any questions concerning the above, please contact this office.

Sincerely,

W D Johnson for

E. H. Johnson, Acting Chief
Reactor Project Branch 2

cc:
J. M. Levine, General Manager
Arkansas Nuclear One
P.O. Box 608
Russellville, Arkansas 72801

ARKANSAS POWER & LIGHT COMPANY

QUALITY ASSURANCE MANUAL FOR OPERATIONS

TOPICAL REPORT

APPROVED: _____ DATE: 5/30/84
QUALITY ASSURANCE MANAGER

APPROVED: _____ DATE: 5/30/84
ENERGY SUPPLY SERVICES
DIRECTOR

APPROVED: _____ DATE: 5/30/84
ENERGY SUPPLY
SR. VICE PRESIDENT

RECORD OF REVISIONS

REVISION NUMBER	DESCRIPTION	DATE
0	Initial Issue	6/11/74
1	Response to AEC Questions Submitted 11/21/74. Revisions to Section 2, 4, and 7 as indicated.	12/13/74
2	Response to NRC Questions Submitted 2/7/75. Procedure Numbers 1005.xx changes to 1004.xx (Number Change Only).	3/4/75
3	General revision to change AEC to NRC, update organization, reflect NSP revisions, minor program implementation changes.	9/8/76
4	Eliminate Quality Assurance Committee Changes to Procurement Control - Qualification of Vendors. Organizational Changes. Incorporate Technical Specification Changes.	9/8/77
5	Incorporate Organizational Changes and responses to subsequent NRC Questions. Incorporate Regulatory Guides and retype document in its entirety in standardized format.	10/10/80
6	Incorporate organizational changes, delete procedural references throughout manual, and accurately reflect current regulatory commitments and QA practices related to the safe operation of AP&L nuclear plants. Manual has been reformated and retyped in its entirety.	5/30/84

TABLE OF CONTENTS

FIGURES

TABLES

ARKANSAS POWER & LIGHT COMPANY POLICY STATEMENT
QUALITY ASSURANCE PROGRAM FOR OPERATION

It is the policy of the Arkansas Power & Light Company (AP&L), from the highest level of corporate management, that its Quality Assurance Program for Operation meet the requirements of the Code of Federal Regulations, 10 CFR 50, Appendix B, with respect to operation, maintenance, refueling, repair and modifications, and inservice inspection of AP&L Nuclear Plants. The program shall also meet the requirements of the ASME Boiler and Pressure Vessel Codes with respect to items constructed, repaired or replaced to Code requirements.

Under the Program the Energy Supply Sr. Vice President, is the final management authority responsible for assuring that this policy statement and the Quality Assurance Program are implemented within AP&L. The Nuclear Operations Vice President and each Energy Supply Director is responsible for the procedural implementation of the program within his assigned area. The plant's General Manager is responsible for the daily implementation of the Program's procedural requirements at the plant.

The Quality Assurance Manager is responsible for establishing the Program. The Quality Assurance Manager, Energy Supply Services Director and the Energy Supply Sr. Vice President are responsible for approval of the Program.

Quality Assurance personnel reporting to the Quality Assurance Manager are responsible for auditing the Program as necessary and monitoring activities required by the Program to assure compliance with its requirements. Disputes involving quality, arising from difference of opinions between QA personnel and other personnel, which cannot be settled interdepartmentally, shall be presented to the Energy Supply Senior Vice President for resolution.

The Quality Assurance Manager is to provide for annual review of the adequacy and overall effectiveness of the Program. Any defects in the implementation of either this policy or the Program that are revealed during the review are to be reported to appropriate levels of management together with appropriate recommendations.

Implementation of this policy is necessary in order to achieve the reliability and safety required at our Nuclear Plants. Each person involved in activities concerning our Nuclear Plants is to be responsible for assuring quality in his own work, and for compliance with the requirements of the Program. The Quality Assurance Program policies, manuals, and procedures are mandatory requirements which must be implemented and enforced by all responsible organizations and individuals.

J. Griffin
Energy Supply Sr. Vice President

Date: 5-30-84

INTRODUCTION

This TOPICAL report (manual) describes the AP&L quality program applied by AP&L to its operating nuclear plants. This manual is intended to serve as a standard reference for final safety analysis reports to fulfill the requirements of the Standard Format and Contents of Safety Analysis Reports for Nuclear Power Plants, Section 17, published by the Nuclear Regulatory Commission.

The objective of this program is to control those phases, as applicable, for the design, procurement, manufacture and fabrication, installation, operation, testing, refueling, repair, maintenance or modification to existing safety related (Q-List) structures, systems and components that prevent or mitigate the consequences of a postulated accident which may cause undue risk to the health and safety of the public. The program is an outgrowth of the principle that quality assurance emanates from each individual contributor and that management is responsible for creating an awareness of quality.

The AP&L quality program is designed to comply with the requirements of 10CFR50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, and to comply with the quality assurance requirements of the ASME Boiler and Pressure Vessel Code, Section XI for repair, replacement, and inservice inspection of items covered by the Code and Licensing commitments.

The AP&L quality program is also designed to comply with the NRC positions contained in the following regulatory guides, subject to specific exceptions noted in Table 1 of this manual:

1.8, rev. 1-R	Personnel Selection and Training (5/77)
1.28, rev. 1	QA Program Requirements-Design and Construction (3/78)
1.30	QA Requirements for Installation, Inspection and Testing of Instrumentation and Electrical Equipment (8/72)
1.33, rev. 2	QA Program Requirements-Operations (2/78)
1.37	QA Requirements For Cleaning of Fluid Systems and Associated Components of Water Cooled Nuclear Power Plants (3/73)
1.38, rev. 2	QA Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items For Water Cooled Nuclear Power Plants (5/77)
1.39, rev. 2	Housekeeping Requirements For Water Cooled Nuclear Power Plants (9/77)
1.58, rev. 1	Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel (9/80)
1.64, rev. 2	QA Requirements For the Design of Nuclear Power Plants (6/76)
1.74	QA Terms and Definitions (2/74)
1.88, rev. 2	Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records (10/76)
1.94, rev. 1	QA Requirements for Installation, Inspection and Testing of Structured Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants (4/76)
1.116, rev. 0-R	QA Requirements For Installation, Inspection and Testing of Mechanical Equipment and Services (5/77)

1.123, rev. 1	QA Requirements For Control of Procurement of Items and Services For Nuclear Power Plants (7/77)
1.144, rev. 1	Auditing of Quality Assurance Programs for the Nuclear Power Plant (9/80)
1.146	Qualification of Quality Assurance Program Audit Personnel For Nuclear Power Plants (8/80)

Based upon compliance to these regulatory guides, the AP&L quality program also complies with the following American National Standard Institute (ANSI) standards subject to exceptions noted in Table 1 of this manual:

N45.2-1977	Quality Assurance Program Requirements for Nuclear Facilities
N45.2.1-1973	Cleaning of Fluid Systems and Associated Components During the Construction Phase of Nuclear Power Plants
N45.2.2-1972	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)
N45.2.3-1973	Housekeeping During the Construction Phase of Nuclear Power Plants
N45.2.4-1972	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations

N45.2.5-1974	Supplementary Quality Assurance Requirements for Installation and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants
N45.2.6-1978	Qualifications of Inspection, Examination and Testing Personnel for Nuclear Power Plants
N45.2.8-1975	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and System for the Construction Phase of Nuclear Power Plants
N45.2.9-1974	Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants
N45.2.10-1973	Quality Assurance Terms and Definitions
N45.2.11-1974	Quality Assurance Requirements for the Design of Nuclear Power Plants
N45.2.12-1977	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
N45.2.13-1976	Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants
N45.2.23-1978	Qualificatior of Quality Assurance Program Audit Personnel for Nuclear Facilities
N18.1-1971	Selections and Training of Nuclear Power Plant Personnel

N18.7-1976 Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

The above requirements are implemented by controlling activities as described in this manual and by procedures referenced in this manual.

Definitions of terms applicable to the AP&L quality program are found in the Terms and Definitions section of this manual.

TERMS AND DEFINITIONS

The terms used in this manual follow the definitions provided in ANSI N45.2.10-1973, supplemented by additional terms and definitions applicable to this report.

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

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

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

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

Audit - An activity to determine through investigation, the adequacy of and adherence to, established procedures, instructions, specifications, codes, and standards or other applicable contractual and licensing requirements, and the effectiveness of implementation.

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

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

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 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 measurable, as conforming or nonconforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process, or service.

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

Cleanness - A state of being clean in accordance with predetermined standards, and usually implies freedom from dirt, scale, heavy rust, oil or other contaminating impurities.

Code Inspector - A qualified nuclear inspector (ANI or ANII) 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 for installation, repair, modification, and in-service inspection of ASME Boiler and Presssure Vessel items designated safety-related.

Commercial Grade - Those items contained in Q systems and equipment that are: (1) not subject to design or specification requirements unique to nuclear facilities or activities; (2) used in application other than nuclear facilities or activities; (3) to be ordered on the basis of specifications set forth in manufacturer's published product description; and (4) not associated with a loss of safety function.

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.

Computer Code - The application software utilized within a digital computer to accomplish a specific function or task. Computer codes requiring Quality Assurance are those whose satisfactory performance is required to prevent accidents which may cause undue risk to the health and safety of the public or relied upon to mitigate the consequences of such accidents if they were to occur. This involves those computer codes utilized in design and analyses of Q-list components, and those utilized as an active portion of Q-list components.

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

Contractor - Any organization under contract for furnishing items or services. It includes the terms Vendor, Supplier, Subcontractor, Fabricator and sub-tier levels of these where appropriate.

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

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.

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, gaging, and measurement.

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

Inquiry - A document that contains the necessary information for a vendor to make a proposal. An inquiry may include specifications pertaining to the equipment, materials, or services proposed to be procured.

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

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.

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

Job Order (J.O.) - The Job Order is the document used for identifying and administratively controlling the work effort on station equipment and systems. It identifies applicable procedures and drawings; documents reviews, approvals and results of inspections and tests; and provides a mechanism for planning, scheduling and authorizing work.

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

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

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

Nonconformance - A deficiency in characteristic, document, 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.

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.

Operation - The total of administrative, maintenance and monitor activities necessary to sustain the power generating capabilities of the plant after initial start-up.

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 materials 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 equiment, piping, structures, buildings and property that comprise an installation or facility.

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 that 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.

Purchase Order (or Contract) - A document authorizing a vendor to provide equipment, material or services in accordance with stated terms and conditions.

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

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

Qualification (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 knowlegeable to perform certain functions.

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

Qualified Vendor List - A listing of vendors having quality assurance programs consistent with the requirements of applicable portions of 10CFR50, Appendix B.

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

Quality Control - Those quality assurance actions which provide a means to control and measure the characteristics of an item, process, or facility to established 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 - Something (document) that gives information for record purposes.

Review - An element of inspection to determine conformance to specified requirements, which can be determined by examination of documents and activities.

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

Safety-Related - The term "safety-related", as used in this program, refers to those materials, parts, components, systems, structures and consumeable items classified as "Q" and so identified on the Q-list applicable to each nuclear plant.

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.

Specification - A concise statement of a set of requirements to be satisfied by a product, 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.

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

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

Surveillance - The continuing analysis and evaluation of records, methods and procedures, including the act of verification, to assure conformance with technical requirements.

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

System 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.

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.

Titles - Titles of individuals, such as Quality Assurance Manager, when used in the TOPICAL report assigns the responsibility of performing the requirement to the noted individual or his appointed designee.

Transit - The 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 provide protection of items from the environment by nature of their closed design.

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 - Any organization under contract for furnishing items or services. It includes the terms Contractor, Subcontractor, Supplier, Fabricator and sub-tier levels of these where appropriate.

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

Work Instructions - Written instructions used to transmit detailed information on the specific measures necessary to comply with the requirements of quality assurance procedures or any complex or difficult quality-related task.

Work Package - A work package is a collection of applicable documents, such as procedures, cleanliness control forms, inspection and test forms, hold card forms, Ignition Source Permits, drawings, technical manuals, etc., needed to perform the job.

1.0 ORGANIZATION

1.1 SCOPE

This section describes the AP&L organizational structure and responsibilities for establishing and executing the Quality Assurance Program for AP&L operational nuclear plants in compliance with 10CFR50, Appendix B and applicable Regulatory Guides and ANSI Standards identified in the Introduction. It also includes a description of the interfaces with other organizations who may be delegated the work of establishing and executing portions of the Quality Assurance Program. The AP&L Corporate Organization relevant to the operation of its nuclear plants is shown in Figure 1.

1.2 GENERAL RESPONSIBILITIES

1.2.1

The ultimate responsibilities for operational nuclear plants within AP&L, including Quality Assurance, lies with the Energy Supply Senior Vice President. He provides management assessment of the Quality Assurance Program through review of QA Audit Reports and reports of NRC activities.

1.2.2

The Administrative Services Vice President is responsible for the purchasing functions affecting plant operation as described in Subsection 1.3.

1.3 CORPORATE SERVICES

1.3.1

Corporate Services is responsible for the procurement of materials, parts and components requested by Little Rock General Office (LRGO) personnel and for supporting the procurement activities at the plant. Procurement organization is noted in Figure 2.

1.3.2

The Nuclear Buyer reports to the Supervisor of Purchasing who reports to the Manager, Purchasing and Stores and is responsible for the following duties and activities:

1. Prepares purchase orders based upon receipt of reviewed and approved Purchase Requisitions.

2. Performs the commercial interface functions between AP&L and contractors or vendors.

3. Assures that quality documentation prepared by Energy Supply personnel are included in purchasing documents.

1.4 ENERGY SUPPLY

Energy Supply, headed by the Energy Supply Senior Vice President is responsible for all activities related to the operation of AP&L Nuclear Plants. These activities include as a minimum: design, modification, maintenance, inservice inspection and test, operation and those additional activities discussed in Sections 2 through 18 of this manual. Within Energy Supply, the Nuclear Operations and Energy Supply Service organizations are involved in activities requiring execution of the Quality Assurance Program (See Figure 3).

1.4.1 Energy Supply Services

Energy Supply Services is under the direction of the Energy Supply Services Director, who reports to the Energy Supply Senior Vice President. The Energy Supply Services Director is responsible for providing support to AP&L nuclear plants in the areas of quality assurance, administrative services, engineering services and technical services. His duties include providing technical direction, administrative guidance and supervision to the:

a. Energy Supply Administrative Services General Manager
b. Engineering Services General Manager
c. Technical Services General Manager
d. Quality Assurance Manager

1.4.1.1 Quality Assurance Manager

The AP&L Quality Assurance Organization (QAO) as shown in Figure 4 is under the direction of the Quality Assurance Manager, who reports to the Energy Supply Services Director. The QAO performs review, surveillance, inspection and audit functions during the operational phase of AP&L's nuclear plants and is independent of Nuclear Operations, and from cost and scheduling considerations when opposed to safety and quality considerations. The QA Manager shall have direct access to management levels, which assures his ability to: identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions.

The qualification requirements of the QA Manager are established within his AP&L job description which includes the following prerequisites:

1. Possess a degree from an accredited school in engineering or a related scientific discipline or equivalent;

2. Possess a minimum of five years experience in the quality assurance or quality control disciplines with atleast two years in the nuclear field; and

3. Exhibit the ability to plan, schedule and direct the activities of others assigned to or functioning within the QAO.

The duties and responsibilities of the Quality Assurance Manager include the following:

1. Develop Quality Assurance Program requirements for modification, operation, and maintenance activites related to the safety-related (Q-listed) systems, structures, and components in AP&L nuclear plants.

2. Audit of the quality assurance activities as described in Section 18 of this manual.

3. Review, approval and verification of the quality assurance requirements placed upon contractors or vendors that provide equipment, material, or services for AP&L nuclear plants.

4. Authority to stop work where conditions exist that prohibit effective quality control inspections, or if faulty materials, incorrect workmanship or procedures are detected.

5. Review, approval, distribution and control of QA Manuals and QA Procedures and revisions thereto.

6. Review and approval of QA programs for outside organizations participating in the AP&L QA program.

7. Serve as chairman of the Safety Review Committee.

8. Provide and maintain a qualified and suitable trained staff to carry out required staff functions.

9. Formulate programs for maintaining the professional competence of personnel within the QAO and provide assistance in QA training and indoctrination programs for division management, engineering and plant personnel whose activities affect quality.

10. Provide technical direction and guidance to the Quality Engineering Supervisors.

1.4.1.1.1 Quality Engineering Supervisor

The Quality Engineering Supervisor reports to the Quality Assurance Manager, supervises QA Engineers and Auditors/Inspectors as assigned, and assists the Quality Assurance Manager in the coordination of activities within the QA Section. The Quality Engineering Supervisor may also perform duties normally assigned to Quality Assurance Engineers.

1.4.1.1.2 Quality Assurance Engineers

The Quality Assurance Engineers (QAE's) report to a Quality Engineering Supervisor, as assigned. The Quality Assurance Engineers are to be familiar with the Quality Assurance Program and associated procedures, 10CFR50 Appendix B, regulatory guides, codes, and standards that address quality assurance. They also possess the necessary functional independence and authority to: identify quality problems, initiate, recommend or provide solutions through designated channels, and verify implementation of solutions. Specifically:

1. The QAE's are to have the authority to inspect, audit or review practices, records, files, instructions, directions or documents concerned with all areas affecting quality.

2. The QAE's are to schedule and coordinate audits or surveillance efforts in the areas assigned, document findings, and report results to the Quality Assurance Manager and the Manager of the audited area.

1.4.1.1.3 Quality Assurance Auditors/Inspectors

The Quality Assurance Auditors/Inspectors report to the Quality Engineering Supervisor and assist him in the implementation of the program by performing audits and inspections as required to assure proper application of the Quality Assurance Program.

1.4.1.2 Technical Services General Manager

The Technical Services General Manager reports to the Energy Supply Services Director and is responsible for providing support to AP&L nuclear plants in the areas of plant performance, maintenance and availability, chemistry, environmental monitoring, metallurgy and nondestructive examination. His duties include the following:

1. Provides technical direction and administrative guidance to:

   a. Plant Performance Evaluation Manager
   b. Plant Maintenance Manager
   c. Availability Engineering Manager
   d. Technical Analysis Manager

2. Assure conformance to the Quality Assurance Program by instituting the necessary quality-related procedures and instructions within the Technical Services Department.

3. Provide for coordination of environmental surveillance programs

4. Direct development of programs aimed at maximizing efficiency and availability.

5. Provide for review and analysis of outage data and make recommendations for correcting deficiencies which affect availability or performance.

6. Direct the plant maintenance support activities that are assigned to the LRGO.

7. Serve as a member of the Safety Review Committee.

8. Provide and maintain a qualified and suitably trained staff to carry out required departmental functions.

1.4.1.3 Engineering Services General Manager

The Engineering Services General Manager reports to the Energy Supply Services Director and is responsible for LRGO design and engineering activities related to nuclear plant operations. His duties include the following:

1. Provide technical direction and administrative guidance to:

   a. Mechanical Engineering Manager
   b. Electrical Engineering Manager
   c. Civil Engineering Manager
   d. Instrumentation and Controls Engineering Manager

2. Assure conformance to the Quality Assurance Program by instituting the necessary quality-related procedures and instructions within Engineering Services.

3. Provide for review and approval of LRGO design and engineering activities performed by contractors, vendors, and AP&L personnel.

4. Provide for review and approval of procurement documents for equipment, material and services for LRGO engineering projects, as appropriate.

5. Provide and maintain a qualified and suitable trained staff to carry out required departmental functions.

1.4.1.4 Energy Supply Administrative Services General Manager

The Energy Supply Administrative Services General Manager reports to the Energy Supply Services Director and is responsible for the development of administrative programs, systems and services supportive to management. His duties include the following:

1. Provide technical direction and guidance to:

   a. Energy Supply Training Manager
   b. General Services Manager
   c. Planning, Scheduling & Cost Control Manager
   d. Contract Administration Manager

2. Maintain overall department fiscal direction and control, and provides supportive accounting functions.

3. Provide contract administration and administration of procedures for Energy Supply Little Rock General Office (LRGO) activities.

4. Administration of the training and development effort for Energy Supply LRGO personnel.

5. Ancillary support services to Energy Supply operation sections.

6. Provide and maintain a qualified and suitable staff to carry out required departmental functions.

7. Serve as a member of the Safety Review Committee.

8. Assure conformance to the Quality Assurance Program by instituting the necessary quality-related procedures and instructions within Administrative Services.

1.4.2 Nuclear Operations

Nuclear Operations is under the direction of the Nuclear Operations Vice President who reports to the Energy Supply Senior Vice President and is responsible for the formulation, licensing, implementation and discharge of operating policies and procedures relative to nuclear plant operations and for nuclear fuel management. His duties include the following:

1. Provide technical direction and administrative guidance to the:

   a. Plant's General Manager
   b. Nuclear Services Manager
   c. ANO Project Manager
   d. Licensing Manager

2. Assure conformance to the Quality Assurance Program by instituting the necessary procedures and instructions within the Nuclear Operations Department.

3. Provide for review and approval of design and engineering performed for the operating nuclear plants.

4. Provide for review and approval of procurement documents for equipment, material and services.

5. Provide for liason between AP&L and applicable regulato.y agencies.

6. Provide and maintain a qualified and suitable staff to carry out required departmental functions.

7. Provide for procurement and design review of nuclear fuel.

8. Overall responsibility for the fire protection program implemented at the nuclear plants.

1.4.2.1 Nuclear Services Manager

The Nuclear Services Manager reports to the Nuclear Operations Vice President and is responsible for providing the necessary support services related to the effective operation and maintenance of the AP&L nuclear plants. The duties include the following:

1. Review, approval and coordination of design changes through the Little Rock General Office.

2. Review, approval and coordination of purchase requisitions and contracts generated at the Little Rock General Office.

3. Interface with other departments to assure effective implementation of Regulatory and Company requirements.

4. Communication interface dealing with all activities at the nuclear plants.

5. Provide technical direction and administrative guidance to the Nuclear Fuel Supervisor, who is responsible for the procurement, design review and performance evaluation of nuclear fuel and to provide support to the plant in the areas of reactor core performance and assessment of core design analysis.

6. Serve as a member of the Safety Review Committee.

1.4.2.2 Licensing Manager

The Licensing Manager reports to the Nuclear Operations Vice President and is responsible for the coordination of all licensing documents, requirements and revisions thereto which are required to be reviewed and/or approved by the NRC and for interfacing with the NRC. The Licensing manager is also responsible for the review and approval of Q-List changes and for the tracking of possible nuclear safety concerns to assure timely closeout.

1.4.2.3 Project Manager

The Project Manager reports to the Nuclear Operations Vice President and is responsible for providing services at the nuclear plant for field construction activities and for modifications to the control room simulators used for operator's training. His duties include providing technical direction and administrative guidance to the Field Construction Manager and the Simulator Project Coordinator.

1.4.2.3.1 Field Construction Manager

The Field Construction Manager is responsible for directing the activities of his staff relating to work associated with plant construction and modifications. His duties include:

1) Interface with other departments to assure effective implementation of job assignments

2) Provide cost and schedule controls for departmental activities

3) Provide technical and administrative guidance to the Construction Quality Control (CQC) Supervisor. The CQC Supervisor is responsible for the surveillance and inspection of activities performed under the direction of the Field Construction Manager, and shall have sufficient authority and organizational freedom to: identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions. The CQC Supervisor is also responsible for assuring adequate inspection points have been assigned for the work activity, inspectors have been certified to ANSI N45.2.6, directing the activities of the inspectors, and interfacing with the Code Inspector for activities involved Code items.

1.5 PLANT ORGANIZATION

1.5.1 General Manager

1.5.1.1

The General Manager reports to the Nuclear Operations Vice President on the corporate level (see figure 5) and has direct responsibility for operating the plant in a safe, reliable and efficient manner. He is responsible for operating the plant in accordance with the provisions of the operating licenses, including the on-site quality program.

1.5.1.2

The General Manager has the authority to shut the plant down if required and has final approval of plant procedures.

1.5.1.3

The General Manager is to provide technical direction and administrative guidance to the:

1) Operations Manager
2) Maintenance Manager
3) Administrative Manager
4) Engineering and Technical Support Manager
5) Special Projects Manager
6) Manager, Nuclear Quality Control

1.5.2 Operations Manager

The Operations Manager (Figure 6) is responsible for directing the actual day-to-day operations of the plant. He supervises the operating staff and interfaces with the Maintenance Manager to accomplish operation-related maintenance activities. The Operations Manager is to provide technical direction and administrative guidance to the:

1) Operations Superintendents
2) Operations Technical Staff

1.5.2.1

The Operations Superintendents report to and assist the Operations Manager in directing the day-to-day operation of the power plants. They are responsible for coordination of the daily review of operating surveillance tests and coordination of operation-related maintenance

activities. They are to assist the Operations Manager in the supervision of core refueling, which includes advance planning for the outage, plant preparation, equipment check-out and the refueling operations.

1.5.2.2

The Shift Supervisors report to the Operations Superintendent and are responsible for the actual operation of the unit and for the activities of the operators during their assigned shift. The Shift Supervisor is to be cognizant of operation activities being performed while on duty. The Shift Supervisor on duty has the authority to shut down the unit if, in his judgement, conditions warrant such action.

1.5.3 Maintenance Manager

The Maintenance Manager (Figure 6) is responsible for the maintenance of plant equipment, facilities and planning/scheduling of station work activities as defined by plant maintenance program implementing procedures and to assure that maintenance of equipment is conducted in conformance with applicable standards, codes, specifications and procedures The Maintenance Manager is also to coordinate operation-related maintenance activities with the Operations Manager and is responsible to make repairs on any structure, system or component under his control. The Maintenance Manager is to provide technical direction and administrative guidance to the:

1. Mechanical Maintenance Superintendent
2. Electrical Maintenance Superintendent
3. Instrument & Control Superintendent
4. Planning and Scheduling Supervisor
5. Senior Maintenance Coordinator
6. Shift Maintenance Superintendent

1.5.4 Engineering and Technical Support Manager

The Engineering and Technical Support Manager (Figure-7) is responsible for providing plant engineering support services as well as technical and plant analysis and health physics support services to the plant staff. The Engineering and Technical Support Manager is to provide technical direction and administrative guidance to the:

1) Technical Analysis Superintendent
2) Plant Analysis Superintendent
3) Plant Engineering Superintendent
4) Operations Assessment Superintendent
5) Health Physics Superintendent.

1.5.4.1 Technical Analysis Superintendent

The Technical Analysis Superintendent maintains overall responsibility for radiochemistry, chemistry and environmental programs at the plant. The Technical Analysis Superintendent is also responsible for maintaining the Station Emergency Plan and ensuring the plant staff is capable of implementing the requirements delineated in the Plan and its procedures.

1.5.4.1.1

The Radiochemistry Supervisor reports to the Technical Analysis Superintendent and is responsible for analyzing the reactor plant water conditions and providing recommendations to maintain conditions.

1.5.4.1.2

The Chemistry and Environmental Supervisor reports to the Technical Analysis Superintendent and is responsible for establishing water chemistry criteria, analyzing secondary plant water and auxiliary water

conditions and providing recommendations to maintain conditions within acceptable limits.

1.5.4.2 Plant Analysis Superintendent

The Plant Analysis Superintendent is responsible for the areas of plant performance, nuclear support and computer support. A supervisor is provided for each of these areas.

1.5.4.2.1

The Plant Performance Supervisor reports to the Plant Analysis Superintendent and is responsible for: evaluating equipment and system performance over extended periods, recommending methods of improving and maintaining good plant efficiency, investigating and evaluating equipment malfunctions or failures and recommending corrective action to prevent recurrences, and coordinating the activities of the Inservice Testing Program at the plant.

1.5.4.2.2

The Nuclear Support Supervisor reports to the Plant Analysis Superintendent and is responsible for monitoring reactor core and Nuclear Steam Supply System (NSSS) performance; conducting reactor performance and physics testing to assure safe and reliable operation and to provide current accurate information to operations; collection and transmittal of nuclear fuel management data to the Nuclear Fuel Supervisor in Little Rock and the reactor vendors as required; on-site safeguards and accountability of the nuclear fuel; and assisting in the planning of all fuel movements including new fuel receipt and inspection, fuel shuffling at refueling, inspection of irradiated fuel and shipment of spent fuel.

1.5.4.2.3

The Computer Support Supervisor reports to the Plant Analysis Superintendent and is responsible for the maintenance, revision and development of computer software for the plant monitoring computers and for providing technical assistance to the Nuclear Support Supervisor and Nuclear Engineers in development and use of test apparatus for evaluation of fuel, core and NSSS performance.

1.5.4.3 Plant Engineering Superintendent

The Plant Engineering Superintendent is responsible for drawing control, implementation and coordination of the Inservice Inspection Program and design and plant engineering activities at the plant. The Plant Engineering Superintendent is to provide technical direction and administrative guidance to the:

1) Mechanical Engineering Supervisor
2) Electrical Engineering Supervisor
3) Drafting and Drawing Control Supervisor.

1.5.4.4 Operations Assessment Superintendent

The Operations Assessment Superintendent provides the capability to perform engineering evaluations of operating experiences which occur both at the AP&L nuclear plants and at other nuclear power plants and to recommend corrective actions as a result of these evaluations to help plant operations personnel in preventing or dealing with similar ocurrences.

1.5.4.5 Health Physics Superintendent

The Health Physics Superintendent is directly responsible for and has the authority to implement the Health Physics program at the nuclear plant and to maintain radiation exposure as low as reasonably achievable (ALARA). The Health Physics Superintendent has the authority to stop work in radiation areas if he evaluates that a potential for an unanticipated excessive exposure to plant personnel or the environment may exist.

1.5.5 Administrative Manager

The Administrative Manager (Figure 8) reports to the General Manager and aids him in the administrative aspects of the plant's operation. The Administrative Manager directs the activities of the administrative staff and provides technical direction and administrative guidance to the:

1) Office Services Supervisor
2) Material Management Supervisor
3) Human Resources Supervisor
4) Training Superintendent
5) Plant Controller

1.5.5.1

The Office Services Supervisor is responsible for administration of the clerical staff activities and the accumulation and disposition of quality assurance records related to all phases of the nuclear plant.

1.5.5.2

The Material Management Supervisor is responsible for plant procurement, storage of materials, parts and equipment, issuance of tools and test equipment and the disposal of surplus materials.

1.5.5.3

The Human Resources Supervisor is responsible for employment, industrial relations industrial safety and fire prevention and security. Reporting to him are the Safety and Fire Prevention Coordinators, the Security Coordinator, and the Employment and Industrial Relations Coordinator.

1.5.5.3.1

The Safety and Fire Prevention Coordinators are responsible for conducting periodic checks to examine control of combustables, housekeeping and other fire prevention/protection efforts as well as to provide a centralization of OSHA and plant safety programs.

1.5.5.3.2

The Security Coordinator is responsible for coordination of the efforts of the security force and to manage the operation of the security system.

1.5.5.4

The Training Superintendent is responsible for the training and retraining of plant personnel and of Little Rock General Office personnel as established by Plant procedures.

1.5.6 Manager, Nuclear Quality Control

The Manager, Nuclear Quality Control (Figure 5) is responsible for verifying the implementation of the Quality Control Program at the plant and reports to and receives direction from the General Manager. The Plant Quality Control department shall have sufficient authority and organizational freedom to: identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions. His duties include the following:

1) Provide technical direction and administrative assistance to the:

   a. Quality Control Engineering Supervisor
   b. Quality Control Supervisor
   c. Quality Control Engineers
   d. Quality Control Inspectors

2) Interface with the Quality Assurance Manager or his representative for technical assistance in resolving significant conditions adverse to quality.

3) Authority to place an item in a nonconforming status when such an item is determined to be in violation of purchase documents, applicable codes and standards or FSAR requirements.

4) Assuring surveillances, inspections and reviews of plant activities and documents are conducted in accordance with plant procedures.

1.5.7 Special Projects Manager

The Special Projects Manager is responsible for the administration and control of special projects pertaining to plant operations, maintenance and administration and is to provide technical direction and administrative guidance to a staff of Special Project Coordinators. Additional duties include:

1) Serving as chairman of the Plant Safety Committee

2) Interfacing with onsite regulatory agencies

3) Providing evaluations and recommendations to regulatory requirements and meeting regulatory commitments.

1.6 INDEPENDENT REVIEW ORGANIZATIONS

In addition to the responsibilities of key individuals within the AP&L organization who are involved with the overall quality program, AP&L has established the following committees as a management tool to independently review activities occurring during the operational phase of a nuclear plant.

1.6.1 Safety Review Committee (SRC)

The SRC reports to the Nuclear Operations Vice President and is responsible for providing off-site independent reviews, and/or audits relating to: the Safety Analysis Report, Technical Specifications, Procedures and changes thereto; unreviewed safety questions; violations, deviations and reportable events; and any other matter involving safe operation of the nuclear plant which the committee deems appropriate or is referred to them by the on-site operating group. The SRC is also to review the reports and meeting minutes generated from the Plant Safety Committee.

1.6.2 Plant Safety Committee (PSC)

The PSC reports to the plants' General Manager and is responsible for reviewing activities specified in the Administrative Technical Specifications for the purpose of:

1) Rendering determinations in writing with regard as to whether or not an unreviewed safety question (defined by 10CFR50.59) is involved; and

2) Furnishing written recommendations to the plants' General Manager for approval of disapproval.

These activities include changes to plant procedures and Technical Specifications, proposed modifications to plant systems, changes to plant security and emergency plans, and review of facility operations to detect potential nuclear safety hazards.

1.6.3 Committee Structure

The organization structure and administrative requirements specific to each committee are described in the plant's Technical Specifications and in internal procedures/documentation.

1.7 ORGANIZATIONAL INTERFACES AND RESPONSIBILITIES

As owner and operator, AP&L assumes full responsibility and authority for the plant including action to assure that the plant is operated in accordance with sound engineering practices, Licensing requirements and applicable codes, specifications and procedures.

Each supplier of equipment, material or services and each maintenance or modification contractor is responsible for administering the applicable quality control functions as required by AP&L. The Quality Assurance and Quality Control organizations are responsible for assuring by surveillance, inspection, audit or review of objective evidence (e.g., audit reports conducted by others, etc.) that these functions are accomplished for systems and structures that affect the safety and integrity of the plant.

Visits to manufacturer's shops by Quality Assurance organization personnel are conducted, when deemed necessary, based upon safety significance, complexity, method of acceptance and past history of the vendor, to establish product quality and to assure that quality assurance and quality control programs function in accordance with AP&L requirements.

The AP&L Energy Supply Organizational Chart (Figure F-3) shows the reporting relationships and the lines of communication established between the Quality Assurance and Quality Control organizations. These lines of communication are established between the various quality organizations in order to provide assistance and/or information, when requested, in verifying satisfactory implementation of the quality program and in resolving significant conditions adverse to quality.

2.0 QUALITY ASSURANCE PROGRAM

2.1 SCOPE

This quality program is to assure that AP&L nuclear plants are operated in a safe, reliable and efficient manner and in accordance with NRC regulations, applicable industrial standards and codes and applicable Company policies, rules, procedures and licensing documents. A matrix of QA Procedures cross-referenced to each criterion of 10CFR50, App. B, is included in Table 2 to this manual.

2.2 GENERAL

2.2.1

This quality program is applied to those safety-related structures, systems and components and to those expendable and/or consumable items* whose satisfactory performance is required to prevent accidents which may cause undue risk to the health and safety of the public or to mitigate the consequences of such accidents if they were to occur. These structures, systems, components and consumable items are identified in the Q-list within the FSAR for each nuclear unit. When structures, systems and components as a whole are on the Q-list, portions not associated with a loss of safety function as determined by Engineering are to be considered Non-Q, unless otherwise dispositioned by Engineering.

*Expendable and/or consumable items are to include, as a minimum: nuclear fuel, weld rods, boric acid, and diesel fuel.

2.2.2

The quality program for fire protection is addressed in the applicable section of the FSAR for each operating nuclear unit, and implemented through appropriate LRGO and plant procedures. The effectiveness of the fire protection program is verified through scheduled audits conducted by the QA organization, under the cognizance of the SRC.

2.2.3

The Q-list is under the control of the Licensing Manager. The Licensing Section maintains an up-to-date list of personnel issued a copy of the Q-list and assures that reviews, approvals and distributions of the Q-list and changes thereto are performed in accordance with approved procedures. Changes to the Q-list require review/approval by the discipline Engineering Manager, Quality Assurance Manager and Licensing Manager.

2.2.4

The following expendable and/or consumable items are to be controlled in the following manner to assure service quality:

1. Diesel Fuel - Service quality is assured by applicable provisions/tests required by the Technical Specification for each operating nuclear unit.

2. Welding Rod - Service quality is assured by procurement from an evaluated source, requiring material test results, and controlling the rod on-site prior to use, to prevent degradation.

3. Boric Acid - Service quality is assured by procurement from an evaluated source, requiring a batch analysis to assure conformance with our specification requirements, and on-site control prior to use, to prevent degradation.

2.3 RESPONSIBILITIES

2.3.1

AP&L recognizes that quality assurance is an interdisciplinary function involving many organizational groups, encompasses many functions and activities and extends to various levels in all participating organizations (from the Energy Supply Senior Vice President to all workers whose activities may influence quality). This quality program designates responsibilities and duties of specific individuals, which may be performed by their appointed designees.

2.3.2

This quality program assigns the responsibility for quality to the departments performing the work and includes as a basic requirement that individuals responsible for verification of conformance are qualified and do not perform or directly supervise the work. Additionally, independent reviews, audits and surveillances are provided by individuals not reporting to the groups responsible for performing the work.

2.3.3

This quality program also includes provisions that require suppliers, contractors, subcontractors, consultants, etc. to maintain and use quality assurance programs reviewed and approved by the Quality Assurance Manager. Audits or surveillances by the QAO provide assurance of compliance with applicable procedures.

2.3.4

The Nuclear Fuel Supervisor within Nuclear Operations is responsible for the assurance that nuclear fuel used in AP&L nuclear plants is designed, procured, manufactured, and utilized in accordance with regulatory requirements, and related industrial codes and standards. On-site quality control of nuclear fuel is implemented through the use of plant administrative procedures. These procedures include the receipt, inspection, handling, storage, and accountability of Special Nuclear Material (SNM). The Nuclear Support Supervisor maintains a listing of those individuals qualified to perform receipt inspections.

2.4 PROCEDURES

2.4.1

Activities which affect quality are defined in appropriate procedures, which are developed to cover AP&L administration and control. The procedures state the policies and instructions necessary to fulfill the intent of the program. Procedures provide for standard forms, lists, and check-offs used in documenting the inspections, certifications, reviews, surveillances and audits. The program and the procedures shall be modified or supplemented from time to time as the need for change arises during the life of the plant. Quality program policies, procedures and instructions are contained in the documents listed in Table 3.

2.4.2

Procedures assure that activities affecting quality are performed under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for performing the activity such as adequate cleanliness; and assurance that required

prerequisites for the given activity have been satisfied. Administrative procedures also assure that the need for special controls, processes, test, and equipment to attain the required quality and the need for verification of quality by inspections, evaluation or test is taken into account.

2.4.3

Other AP&L organizations outside of Energy Supply may establish written procedures to control support activities affected by the requirements of this quality program. Procedures developed by such organizations are prepared and reviewed for technical adequacy within the cognizant organization, reviewed by the Quality Assurance Manager and approved by the cognizant organization's department head.

2.5 PROGRAM REVISION AND CONTROL

2.5.1

Program revision and control shall be the responsibility of the Quality Assurance Manager.

2.5.2

Proposed changes to the Quality Assurance Program for Operations are to be submitted by the Quality Assurance Manager to affected LRGO and plant management personnel for review and comment prior to approval and transmittal to the Nuclear Regulatory Commission. After resolution of comments, changes are to be approved by the Quality Assurance Manager, Energy Supply Services Director, and the Energy Supply Senior Vice President.

2.5.3

The Nuclear Regulatory Commission is to be notified of changes to this quality program annually for those changes that do not reduce the commitments in the program description previously accepted by the Nuclear Regulatory Commission. Changes to the program description that reduce the commitments are to be submitted and approved by the Nuclear Regulatory Commission prior to implementation. The Quality Assurance Manager is to determine if changes do or do not reduce the commitments of this quality program.

2.6 PERSONNEL

2.6.1

Employees whose duties and responsibilities are related to the quality program activities at or in support of the nuclear plant are to participate in appropriate indoctrination and training programs to assure that suitable proficiency is achieved and maintained in the work they are performing. Such training shall include, as a minimum: plant security; discussion of the overall Company policies, procedures and instructions which establish the quality program; an explanation of the AP&L quality organizations; and a discussion of those procedures which implement the quality program related to the employee's specific job-related activity.

2.6.2

The education, experience and responsibility requirements of individuals involved in this quality program are documented in job descriptions which are approved and periodically reviewed by management. Requirements for education, experience and proficiency levels are commensurate with the

degree of importance of the job assignment. Experience and training requirements for plant staff personnel are to meet the requirements of ANSI N18.1-1971 and Regulatory Guide 1.8 (9/75), unless otherwise noted in Table 1. Personnel whose qualifications do not meet those specified in ANSI N18.1-1971, and who are performing inspection, examination and testing activities during the operational phase of the plant, are to meet the requirements of ANSI N45.2.6-1978, unless otherwise noted in Table 1.

2.6.3

Personnel performing inspection and examination activities are to be indoctrinated and trained to assure they are aware of the requirements which govern their activity. Inspection and examination personnel are to be qualified according to the applicable codes, standards, specifications, regulatory requirements and LRGO and plant procedures. Personnel performing inspections on those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during initial plant design and construction are to meet the provisions of Regulatory Guide 1.58, rev. 1 (9/80) and ANSI N45.2.6-1978, in lieu of ANSI N18.1-1971.

2.6.4

Personnel involved with welding or nondestructive examination of materials, systems or components are to meet the appropriate qualification requirements of the ASME Boiler and Pressure Vessel Code, Sections III and XI, or for structural welds, the American Welding Society (AWS) Structural Steel Code D1.1, and the American Society Nondestructive Testing Standard SNT-TC-1A-1975, and certified to perform these tasks in accordance with these codes and standards.

2.6.5

Personnel performing audits of the quality program are to meet the experience, training and qualification/certification requirements of ANSI N45.2.23-1978, and regulatory guide 1.146 (8/80), unless otherwise noted in Table 1.

2.6.6

Training records are to be maintained in accordance with approved procedures. For formal training programs, documentation is to include the objective, content of the program, attendees, and date of attendance.

2.7 PROGRAM REVIEW

2.7.1

The Quality Assurance Manager is responsible for a review of this program on an annual basis to determine the effectiveness and proper implementation of the quality program.

2.7.2

Management reviews of the status and adequacy of the quality program are accomplished through regular reports and presentations by the QAO and through reviews of quality assurance audit reports. Quality Assurance reports supply data on the status of outstanding audit and corrective action items and may identify the status of other significant quality program activities as requested by management.

3.0 DESIGN CONTROL

3.1 SCOPE

Design activities are to be controlled to assure that proposed plant changes to the structures, systems, equipment and components conform to applicable regulatory requirements and that design bases are correctly translated into appropriate design documents. Design Control activities are to be in accordance with the requirements of Regulatory Guide 1.64 - Rev. 2 (6/76) unless otherwise noted in Table 1.

3.2 GENERAL

3.2.1

Engineering Services and Plant Engineering are to be responsible for the continued upgrading and modification of plant design. Design documents (drawings, specifications, procedures and instructions) originating or released through these departments are to be based upon the required regulatory requirements, licensing based documents, functional requirements, quality standards and design bases in accordance with NRC licensing requirements. Design activities may include calculations, analyses, materials selection, equipment arrangement and layouts, accessability for inservice inspection, and the specification of test and inspection criteria. Those design activities performed by individuals within Engineering Services are controlled by the use of LRGO Energy Supply Procedures. Those design activities performed by individuals within Plant Engineering are controlled by the use of Plant Administrative and Engineering Administrative Procedures. These procedures include controls to assure that verified computer codes are certified for use and that their use is specified.

3.2.2

Design standards and requirements are to be at least equivalent to those employed during the construction of the plant and are to be consistent with the technical specifications and license requirements.

3.3 DESIGN INTERFACE

Design control activities include measures for the identification and control of design interfaces between the various engineering disciplines within the department, between LRGO and plant engineering personnel, between engineering personnel and other AP&L support organizations, and between engineering personnel and firms/suppliers outside the AP&L organization. These measures include the development of procedures among the participating organizations for the review, approval, release, distribution and revision of documents involving design interface. Coordination of the interface control is the responsibility of the originating organization's management unless otherwise specified in an AP&L procedure applicable to the design activity. Design information between interfacing organizations is to be documented and retained for permament records.

3.4 DESIGN VERIFICATION

3.4.1

To assure the design is adequate and the above requirements and procedures are implemented, Engineering Services for LRGO design or Plant Engineering for plant design are to verify the adequacy of the design through the performance of design reviews, the use of alternate or simplified calculation methods, or the performance of a qualification

testing program. The extent and depth of design verification performed by the responsible organization is determined by an assigned engineering reviewer based upon the importance and complexity of the design, the degree of standardization and its similarity with proven designs. In all cases, the design verification is to be complete prior to relying upon the component, system or structure to perform its function.

3.4.2

The verification process is to be performed by competent individuals or groups other than those who performed or supervised the design but who may be from the same organization. This verification, however, may be performed by the originator's supervisor in accordance with departmental procedures if he is the only individual in the organization competent to perform the verification and provided the need is individually documented and approved in advance by the responsible Manager or Superintendent. The frequency and effectiveness of use of Supervisors as design verifiers is to be verified by QA through scheduled audits to guard against abuse. Where changes to previously verified designs have been made, design verifications are required for the change, including evaluation of the effects of the changes on the overall design.

3.4.3

When a test program is used to verify the adequacy of a design, it is to include suitable qualification testing of a prototype or initial production unit under the most adverse conditions and carried out in accordance with documented procedures and/or instructions. Testing is to be performed as early as possible prior to installation of plant equipment, or prior to the point when the installation would become irreversable.

3.4.4

Design work performed by organizations outside of AP&L is to receive a documented review and approval by engineering personnel in accordance with LRGO and plant departmental procedures.

3.5 DESIGN CHANGE

3.5.1

Methods for the preparation, review, approval and implementation of design changes, including field changes, are documented in departmental procedures for Engineering Services and Plant Engineering. Design changes are subject to review and verification by the same organization which review and verified the original design unless otherwise specified in departmental procedures for design control. If minor changes to an approved design are required to meet plant requirements or conditions, Field Change Notices (FCN) may be issued or otherwise documented by a cognizant engineer and transmitted with the changes for review and approval in accordance with Plant Engineering Administrative Procedures.

3.5.2

Changes from specified design inputs, such as design bases, regulatory requirements, codes and standards (including quality standards) are to be identified, approved, documented and controlled through applicable LRGO and plant departmental procedures.

3.5.3

During preparation of a design change, the responsible engineering organization is to perform a safety and environmental evaluation per

10CFR50.59 to verify compliance with the Final Safety Analysis Report and to determine if NRC approval of the design change is required. The evaluation is to be documented and then reviewed by the PSC.

3.5.4

Design changes are also to be submitted to the Manager, Nuclear Quality Control prior to plant implementation to verify the use of appropriate quality codes, standards and inspection requirements in the design documents.

3.6 CORRECTIVE ACTIONS

When design changes are made as a result of design deficiencies or errors, corrective actions (for significant conditions) are to be taken in accordance with Section 16.0, to determine the cause and to institute appropriate changes in the design process and/or Quality program to prevent recurrence. When a significant design change is necessary because of an incorrect design, the design process and verification procedures shall be reviewed and modified as necessary.

3.7 DESIGN RECORDS

The Plant Administrative Manager is responsible for maintaining permanent records of the design documents for the construction and testing phases. In addition, he shall be responsible for maintaining records of the upgrading or modification of these documents as described in this section. The controls for maintaining these records are established by specific procedures described in Section 17 of this manual. These records provide the historic reference necessary for the safe and reliable operation of the plant.

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 SCOPE

Requirements for the procurement of items and services are to be clearly stated and documented to assure that applicable regulatory requirements, design bases, technical requirements and quality assurance criteria are included or referenced in the procurement documents, whether procured by LRGO or plant procurement groups. Procurement document control activities are to be in accordance with LRGO and plant procurement procedures and are to meet the provisions set forth in NRC Regulatory Guide 1.123, rev. 1 (7/77) unless otherwise noted in Table 1.

4.2 PROCUREMENT DOCUMENTS

4.2.1

The procurement of materials, parts and components are generated through the preparation of a Purchase Requisition (PR) and subsequent issuance of a Purchase Order (PO), or when additional services from the Vendor is required, through the preparation and issuance of a Contract. The procurement of services is initiated through the preparation and issuance of a Contract. The preparation, review, approval and issuance of these procurement documents is to be in accordance with applicable procurement and contract administration procedures. Purchase Orders for items are issued through the AP&L Purchasing group and Contracts for items and/or services are issued through the AP&L Contracts Administration group.

4.2.2

Procurement documents are to include or reference specific design specifications for the items or services to be procured which define specific codes, standards, tests, inspections, environmental qualifications, and records to be applied and/or furnished. For standard

"off-the-shelf" items, reference to the items catalog number and identification number may be included on the procurement document in lieu of a design specification. New or revised specifications for replacement items are to be evaluated by the responsible engineering organization against the original specification for the item. The evaluation is to be in accordance with applicable engineering procedures and results in the establishment of new baseline and technical quality requirements, which are to be used for subsequent procurements.

4.2.3

Procurement documents are also to include the identification of quality assurance program requirements applicable to the items or services procured. Procurement documents also establish requirements for source audits and inspection, extension of the procurement requirements to lower tier suppliers or subcontractors, and preparation and delivery of documentation. These requirements may either be in the form of documents attached to the PO or Contract or by incorporating them in the specific design specifications. Quality programs are to be specified by invoking the appropriate sections of 10CFR50, App. B, the appropriate ANSI standards and/or the appropriate AP&L generated quality requirements for items or services. The appropriate sections of the ASME Boiler and Pressure Vessel Code are to be invoked for items originally designed to meet ASME requirements.

4.3 REVIEW OF PROCUREMENT DOCUMENTS

The responsible Quality Assurance or Quality Control organization, as identified in the LRGO and plant procedures for procurement and contract administration activities, is to review all procurement documents to assure that the required quality requirements (including source surveillance and/or inspection) are imposed on suppliers/contractors.

4.4 CHANGES TO PROCUREMENT DOCUMENTS

Changes to procurement documents are to have the same degree of control and review as imposed on the original documents. Changes such as inconsequential editorial corrections or changes to commercial terms and conditions may be made by the Nuclear Buyer or Contract Administrator as appropriate, after concurrence from the originator of the document.

5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.1 SCOPE

5.1.1

Instructions, procedures and drawings are provided for the control of those activities which affect quality and safety at the nuclear plant. Activities covered by written procedures include, as a minimum: administrative, general plant operations, start-up; shutdown; power operation and load changing, process monitoring, fuel handling; modification; maintenance and repair; radiation control; calibration and test; chemical-radiochemical control; plant emergencies; test and inspection, and quality assurance, quality control and LRGO activities in support of plant activities. The format, content and philosophy of instructions and procedures are to comply with the guidelines in ANSI N18.7-1976 and Regulatory Guide 1.33 (2/78) unless otherwise noted in Table 1.

5.1.2

Instructions and procedures are also provided for the control of activities relating to the repair, replacement or modifications to ASME Code, Section III, Class 1, 2 or 3 components required to be operable to mitigate the consequences of a postulated accident.

5.2 GENERAL

5.2.1

Instructions, procedures and drawings are to include appropriate quantitative criteria such as dimensions, tolerances and operating limits and/or qualitative criteria such as comparative workmanship samples to determine that important activities have been satisfactorily

accomplished. Each procedure is to be sufficiently detailed so that a qualified individual may perform the required function(s) without direct supervision and is to include measures to document the activity being performed.

5.2.2

To assure the accomplishment of activities in accordance with approved instructions, procedures and drawings, each supervisor is responsible for quality compliance of his personnel. Verification that activities are accomplished in accordance with approved instructions, procedures and drawings is obtained through various levels of surveillance and inspection by Quality Control personnel and through periodic surveillance and audits by the QAO.

5.3 REVIEW OF INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.3.1

Instructions, procedures and drawings are prepared, reviewed and approved in accordance with applicable plant administrative procedures, when originated at the plant, or in accordance with applicable Energy Supply procedures, when originated from LRGO.

5.3.2

Plant procedures identified in the Technical Specifications for each unit and changes thereto which describe activities required to implement this quality program are to be reviewed by the PSC prior to submittal of the procedures to the Plants' General Manager for approval and subsequent issuance. Plant Administrative procedures (1000.XX Series) are also reviewed by the Quality Control staff to verify compliance to AP&L's

quality program requirements. LRGO Energy Supply procedures describing activities required to implement this quality program are to be reviewed and approved by a procedures task force committee and Quality Assurance to assure compliance to AP&L's quality program requirements prior to submittal of the procedures to the Department Head responsible for implementation, for approval and subsequent issuance.

5.3.3

Plant and LRGO procedures and instructions are to be reviewed no less than every two years to determine if changes are necessary to meet NRC commitments and current AP&L practices. Applicable procedures (i.e. those that relate to the incident cause) are to be reviewed following an unusual incident such as an accident unexpected transient, significant operator error or equipment malfunction. Applicable procedures are also to be reviewed following any modification to a plant system.

5.3.4

Drawings related to plant changes and modifications are controlled as described in Section 3 and 6 to this manual.

5.4 CHANGES TO PROCEDURES

5.4.1

Changes or revisions to approved instructions, procedures and drawings are to be reviewed and approved by the same organizations or groups that performed the original review unless otherwise noted in specific AP&L procedures and controlled in the same manner as the original.

5.4.2

Temporary changes to approved plant procedures which do not change the intent of the procedure may be made provided such changes are approved by two members of the plant staff, at least one of whom holds a senior reactors operators license on the unit affected and the change is documented, reviewed by the PSC, and approved by the plant's General Manager within 14 days of implementation. Temporary changes to approved plant procedures which change the intent of the procedure may be made provided such changes are reviewed by the PSC and approved by the Plants' General Manager prior to implementation. Temporary changes to approved plant procedures are to specify the period of time during which they may be used and made readily available to affected members of the plant staff. In the event of an emergency not covered by an approved procedure, operations personnel may take action, without obtaining approvals, so as to minimize personnel injury and damage to the facility and to protect health and safety.

6.0 DOCUMENT CONTROL

6.1 SCOPE

The various quality program documents identified in Table 3 provide means to control the review, approval, issuance, use and retrievability of documents, such as calculations, computer codes, analyses, Topical Report, FSAR, instructions, procedures, specifications, manuals and drawings, including changes thereto, which prescribe activities affecting quality.

6.2 RESPONSIBILITIES

6.2.1

Each organization originating documents which prescribe activities affecting quality is responsible for the establishment of document control procedures which identify individuals or groups responsible for preparation, review, approval and maintenance of the document and for the issuance of these procedures to the affected individuals or groups.

6.2.2

Review of these documents for concurrence with quality related requirements is to be performed by the appropriate Quality Assurance or Quality Control organization or by the appropriate reviewer as described in LRGO and plant procedures.

6.2.3

The plant Administrative Manager is responsible for the control and issuance of plant procedures, and revisions thereto, to assure distribution in accordance with plant procedures. The plant Administrative Manager is also responsible for the storage and control of

approved historical plant documents, and the storage of historical drawing records. The Engineering and Technical Support Manager is responsible for the control and issuance of drawings and revisions thereto to assure that they reflect the as-built conditions of the plant.

6.3 IDENTIFICATION

Documents are to be identified by a title descriptive of their purpose or applicability and marked or stamped as to their current status (Draft, For Information Only, Void, etc.) per departmental procedures. Revision status of documents are to be identified in document registers, distribution lists and/or within the revision record page/block of the document.

6.4 DISTRIBUTION

Distribution lists and/or document registers are to be maintained by the organization responsible for issuance of the document. These lists are to identify the revision status of the document and are to be reviewed and updated periodically by the responsible organization to maintain them in a current status. These lists are available to individuals using the document to assure they are in receipt of the current document. These measures are to preclude the possibility of using outdated or inappropriate documents.

6.5 CHANGES

6.5.1

Changes to controlled documents are to be reviewed and approved by the same organizations which performed the original review and approval unless otherwise specified in departmental procedures applicable to the affected activity.

6.5.2

Obsolete or superceded documents are to be destroyed or marked to prevent inadvertent use in accordance with applicable document control procedures.

6.6 STORAGE

Documents which affect quality are to be stored and maintained at the plant in permanent storage facilities and controlled as described in Section 17 of this manual.

6.7 VERIFICATION

Quality Control personnel, through their various levels of quality surveillance and inspection activities, and Quality Assurance personnel, through their audit activities, assure proper documents are being used and made available to those individuals performing the work.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 SCOPE

The purchase of material, equipment and services is controlled to assure that, whether purchased directly or through vendors, the material, equipment and services which affect quality conform to the procurement documents. Procurement control includes provisions for source evaluation and selection, objective evidence of quality furnished by the contractor, surveillance and audit at the source, examination of products upon delivery and testing of received material for conformance to procurement criteria. The depth and necessity of procurement controls depend upon the uniqueness and complexity of the item/service, procurement frequency with the same supplier and past supplier performance for the specific items or services covered by the procurement document. The control of purchased material, equipment and services is to be in accordance with the requirements of Regulatory Guide 1.38 Rev. 2 (5/77) and 1.123 Rev. 1 (7/77) unless otherwise noted in Table 1.

7.2 SOURCE EVALUATION AND SELECTION

7.2.1

A Qualified Vendors List (QVL) is to be maintained and controlled under the direction of the Quality Assurance Manager. The QVL identifies those vendors/contractors that have been evaluated and approved by the QAO to furnish material, equipment or services, and identifies any restrictions imposed by the QAO on the vendor/contractor as a result of their evaluation.

7.2.2

Vendors/Contractors are evaluated and placed on the QVL by any of the following methods, as approved by the Quality Assurance Manager:

(1) Source survey by AP&L to verify compliance to applicable 10CFR50, Appendix B requirements or to applicable ASME Section III Quality Assurance program requirements (for ASME Class 1,2,3,MC,NF and NG components).

(2) Evaluation and acceptance of source surveys performed by others (ex. CASE, other utilities, NSSS suppliers, and prime contractors) indicating a program meeting the appropriate requirements of 10CFR50, Appendix B. (This method is not applicable for ASME procurements.)

(3) A review of the vendors/contractors current quality records supported by evidence of documented qualitative and quantitative information which can be objectively evaluated. This includes review and approval of the vendor's/contractor's quality assurance program, manual and procedures, when available. (This method is not applicable for ASME procurements).

(4) Evaluation of the vendor's/contractor's history of providing a product/service which performs satisfactorily in actual use. Evaluation information includes: experience of users of identical or similar products/services of the prospective vendor/contractor; and/or procurement records that have been accumulated in connection with previous procurement activities and operating experiences. (This method is not applicable to ASME procurements).

(5) Verification that a vendor is a holder of an ASME Certificate of Authorization issued as a result of an ASME survey may be used in lieu of methods 1 and 2 for ASME procurements.

(6) Verification that a contractor is a holder of a NRC letter confirming QA program implementation may be used in lieu of method 1.

7.2.3

Only vendors/contractors listed on the QVL are to be selected for procurement of material, equipment or services except for items designated "commercial grade" per plant and LRGO procedures. Standard catalog items may be procured from a vendor/contractor not listed on the QVL provided the manufacturer of the item is on the QVL and all AP&L requested documentation originates from the manufacturer. The QVL is to be periodically reviewed and updated per quality assurance procedures to ensure the current status of all selected vendors/contractors is available to personnel involved in the procurement process.

7.2.4

When contractors are selected to perform work activities at the plant, their personnel and work activities are to be controlled in accordance with plant procedures to assure that the contractor conforms to the procurement documents.

7.3 SOURCE SURVEILLANCE AND AUDIT

7.3.1

The effectiveness of a vendor's/contractor's quality assurance program is assessed by QA personnel at intervals consistent with the importance, complexity, method of receipt and quantity of the products or services. This assessment may be through source surveillance, source audit, receipt inspection, independent testing or review of source documentation files.

7.3.2

Requests for source surveillance are made by the originator of the PR/ Contract, and/or the responsible Quality Control or Quality Assurance organization during their review of the procurement document (reference section 4.3) Source surveillance is to be performed by QA personnel or their appointed representative in accordance with surveillance plans approved by the Quality Assurance Manager and the results documented per quality assurance procedures. Reports documenting inspections performed and discrepancies observed are prepared by the person performing the surveillance to document compliance to the procurement documents and for future use as historical quality performance data.

7.3.3

Audits of the vendor's/contractor's quality assurance programs are periodically performed under the direction of the Quality Assurance Manager to verify implementation of a satisfactory quality program on the items or services being procured by AP&L. Audits performed by others (e.g., CASE, other utilities, or prime contractors), as evaluated and approved by the Quality Assurance Manager, may be used as an alternative to audits by AP&L to verify the vendor/contractor is implementing a satisfactory quality program. Audits are to be conducted in accordance with Section 18 of this manual. (This alternative method does not apply to ASME procurements.)

7.4 RECEIPT INSPECTION

7.4.1

Materials and equipment, including ASME Code materials and equipment, are subject to inspection upon receipt at the plant. The degree of inspection is specified in the procurement documents and is to be performed in accordance with plant procedures for receipt inspection.

7.4.2

Receipt inspection activities are to be documented and include, as a minimum: examination of material or equipment for shipping damage, proper identification, and quantity; and the review of vendor documentation, to verify compliance with the procurement document. In addition, if material and equipment received at the plant were not inspected at the vendor's facility by AP&L, an inspection is to be performed by a Quality Control Inspector at the point of receiving to verify that the material or equipment conform to the inspection requirements identified in the procurement documents.

7.4.3

Vendors are to furnish documentation as required by the procurement documents for objective evidence that the material or equipment conforms to the procurement requirements. Review and acceptance of this documentation is to be performed by a Quality Control Engineer prior to installation or use of such material or equipment and documented unless otherwise specified in plant procedures. Certificates of Conformance may be required by procurement documents which identify the requirements met by the vendor. The validity of the vendor's certification program is to be periodically verified through scheduled source surveillance and audit activities or through independent testing of the item by AP&L.

7.4.4

Accepted material and equipment is released, identified as to its inspection status and forwarded to a controlled storage area or released for installation per applicable plant procedures.

7.4.5

Acceptance of services furnished by a contractor is to be identified in the procurement documents. Depending upon the service performed, acceptance may be by technical verification of the data produced, surveillance and/or audit of the activity, or review of objective evidence for conformance to the procurement document requirements. The acceptance method is to be performed by qualified individuals knowledgeable in the service provided.

7.4.6

Independent testing of selected material is to be performed in accordance with plant procedures/instructions to verify conformance to procurement criteria and the validity of the vendor's certification documents.

7.5 NONCONFORMING ITEMS

7.5.1

Nonconformances identified by the vendor/contractor which adversely affect reliability, performance or interchangeability of the item and dispositioned repair or use-as-is are to be submitted to and accepted by AP&L prior to closure of the nonconformance by the vendor/contractor. These nonconformances are to be documented and become part of the procurement documentation furnished by the vendor/contractor for the material, equipment or services procured.

7.5.2

Material and equipment found to be deficient or missing procurement documentation during receiving inspection or found to be deficient as a result of independent testing is to be clearly identified, segregated

from acceptable items and dispositioned per plant procedures and as described in Section 15 of this manual.

7.6 SPARE PARTS

Spare parts are to be purchased to the original design requirements or to those specified by a properly reviewed and approved revision to the design requirements. The applicable quality assurance requirements and documentation requirements for spare parts are to be included in the procurement documents.

7.7 STORAGE

Material and equipment are to be handled and stored as described in plant procedures and Section 13 of this manual.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

8.1 SCOPE

8.1.1

Measures for the identification and control of materials, (including consumables), parts and components, including partially fabricated subassemblies, are to be established within LRGO and plant procedures. These procedures are to relate an item of production (batch, component, part, etc.) at any stage, from initial receipt through fabrication, installation, repair or modification to an applicable drawing, specification, or other pertinent technical documents. These measures are to assure that only correct and accepted items are used and installed.

8.1.2

Methods for the traceability of materials, parts and components to specific inspection and test records, when required by codes, standards, specifications or procurement documents, are to be established within LRGO and plant procedures and maintained throughout the life or consumption of the item.

8.2 IDENTIFICATION

8.2.1

Materials, parts and components are to be identified by the vendor in accordance with the applicable design standards, codes and/or instructions specified in the procurement documents.

8.2.2

Materials, parts and components are to be identified and/or tagged at the plant in accordance with applicable plant procedures. These tags identify the status of and provide traceability to the item throughout storage and release to installation.

8.2.3

Identification of materials, parts and components is accomplished by either marking or tagging on the item or through records traceable to the item.

8.2.3.1

Physical identification is to be used to the maximum extent possible. Where physical identification is either impractical or insufficient, physical separation, procedural controls or other appropriate means are to be employed in accordance with plant procedures.

8.2.3.2

When identification markings are employed, the markings are to be clear, unambiguous and indelible, and applied in such a manner as not to affect the integrity or function of the item. Markings are also to be transferred to each piece of material (plate, barstock, tubing, etc.) when subdivided. Large quantities of small items, may be identified by applying markings or tags to their shipping packages, boxes or other suitable containers.

8.2.3.3

Identification markings are to be recorded on records or as-built documents if current markings are to be hidden or subject to obliteration by surface treatment or coatings during fabrication, installation, repair or modifications.

8.3 CONTROL

Plant organizations receiving materials, parts and components are to verify that they are properly identified while under their control. Quality Control personnel through their surveillance and inspection activities assure that compliance to these requirements are being met. Quality Assurance personnel through their audit activities, also assure that materials, parts and components are being identified in accordance with this manual.

8.4 DEFECTIVE OR INCORRECT ITEMS

8.4.1

Defective or incorrect materials, parts and components identified by plant personnel or support groups are to be handled in accordance with Section 15 of this manual and plant procedures for nonconformances and corrective action. Defective or incorrect items are to be tagged with a "hold tag" affixed to the item or otherwise identified per plant procedures.

8.4.2.

Defective or incorrect items are to be stored in segregated areas except for those items installed or which, due to their size, weight configuration, etc., are impractical or impossible to store in the designated controlled storage area.

9.0 CONTROL OF SPECIAL PROCESSES

9.1 SCOPE

Special processes are to be controlled through the use of qualified personnel and plant procedures which meet the requirements of applicable codes, specifications, standards and other criteria stipulated in AP&L licensing documents.

9.2 GENERAL

9.2.1

Special processes are those activities which require interim inprocess controls in addition to final inspection to assure quality and include such activities as welding, nondestructive examination, heat treating, coating, plating and chemical cleaning.

9.2.2

Technically qualified LRGO or plant personnel are to establish the procedural and qualification requirements for those special processes not covered by existing codes or standards or where AP&L quality requirements exceed the requirements of established codes or standards.

9.2.3

The requirements for welding and nondestructive examination are to comply with the applicable portions of the ASME Boiler and Pressure Vessel Code or for structural welds, the AWS Structural Steel Code D1.1, and the American Society of Nondestructive Testing (ASNT-TC-1A-1975 and supplements). The requirements for cleaning and flushing of fluid systems are to comply to the requirements of NRC regulatory guide 1.37, dated 3/16/73 unless otherwise noted in Table 1.

9.3 QUALIFICATION

9.3.1

Special process procedures for welding and nondestructive examinations are to be qualified prior to use to assure compliance to applicable codes, standards or specifications. These qualifications are to be documented and also made available for review to the Code Inspector for activities on ASME items.

9.3.2

Personnel responsible for the performance and verification of special processes are to be qualified and/or certified according to applicable codes, standards, specifications, regulatory guides and plant procedures. These qualifications and certifications are to be documented and made available for review to the Code Inspector for activities on ASME items. Personnel qualification and/or certification records for a special process are to be regularly reviewed by the supervisor responsible for that special process to assure that the appropriate documents are up-to-date and personnel are periodically requalified and/or recertified in accordance with plant procedures.

9.4 RECORDS

The results of special processes are to be documented, reviewed, approved and stored in accordance with appropriate plant procedures and as addressed in other sections of this manual.

9.5 VERIFICATION

Performance of special processes in accordance with applicable codes, standards, specifications and plant procedures is verified by Quality Control personnel through their surveillance and inspection activities, and by Quality Assurance personnel through their audit activities.

10.0 INSPECTION

10.1 SCOPE

Inspections relating to normal operating activities and inspections relating to operating activities comparable in nature and extent to those occurring during initial plant design and construction are to be controlled to assure that inspections are performed in accordance with applicable design documents, codes, standards, specifications and procedures. Inspection activities are to be in accordance with Regulatory Guide 1.33, Rev. 2 (2/78), unless otherwise noted in Table 1.

10.2 GENERAL

10.2.1

Inspection activities relating to normal operating activities (Operational Inspections) include:

1) Work functions associated with normal operation of the plant;
2) Routine maintenance;
3) Technical services routinely assigned to the onsite operating organization; and
4) Non-routine maintenance activities and minor modifications made by the onsite operating organization that are not comparable in nature and extent to related activities occurring during initial plant design and construction.

10.2.2

Inspection activities relating to operating activities comparable in nature and extent to related activities occurring during design and construction (Construction Inspections) include:

1) Non-routine maintenance, except as noted in paragraph 10.2.1; and

2) Modifications, except as noted in paragraph 10.2.1.

The following Regulatory Guides are to be applied, as applicable, in determining the basis for required construction inspections: R.G. 1.30, Rev. 0 (4/76); R.G. 1.38, Rev. 2 (5/77); R.G. 1.39, Rev. 2 (9/77); R.G. 1.37, Rev. 0 (3/73); R.G. 1.94, Rev. 1 (4/76); and R.G. 1.116, Rev. 0-R (7/76).

10.2.3

Personnel performing inspection activities to verify quality are to be qualified as stated in Section 2 of this manual. When inspection techniques require specialized qualifications or skills, personnel performing the inspection are to meet applicable licensing requirements, codes and standards appropriate to the discipline involved.

10.3 CONTROL OF INSPECTIONS

10.3.1

Inspections are to be performed in accordance with approved written procedures, which set forth the requirements and acceptance limits and specify the inspection responsibilities. If inspections require detailed written procedures to perform the task, the procedures are to contain, as a minimum, the following:

1) Qualitative and/or quantitative acceptance criteria;

2) Prerequisites for performing the inspection and any limiting conditions;

3) Identification of any special equipment and tools required to perform the inspection (when accuracy requirements for inspections exceed the accuracy of normally available process or measuring and test equipment, such additional accuracy requirements are to be specified within those inspection procedures);

4) A step-by-step description of the method of inspection, examination, measurement or test to be performed; and

5) Identification of those inspection results to be documented. Inspection forms or checklists are to be used as an aid in documenting the inspection activity to assure quality requirements have been met.

10.3.2

Operational inspections are to be performed by qualified individuals other than those who performed or directly supervised the activity being inspected. Construction inspections are to be performed by qualified individuals other than those who performed or directly supervised the activity being inspected and do not report directly to the immediate supervisors who are responsible for the activity being inspected.

10.3.2.1

Operational inspections may be performed by second-line supervisory personnel or by other qualified personnel not assigned first-line supervisory responsibility for conduct of the work.

10.3.2.2

Construction inspections are to be conducted in a manner similar to that associated with construction phase activities in accordance with applicable plant procedures.

10.3.2.3

If individuals performing inspections are not part of the Quality Assurance or Quality Control organizations, the inspection procedures, personnel qualification criteria, and independence from undue pressure such as cost and schedule are to be reviewed and found acceptable by the responsible Quality Assurance or Quality Control organization prior to initiation of the activity.

10.3.3

If an inspection determined to be required is impossible or disadvantageous, indirect control by monitoring processing methods, equipment and personnel is to be provided to verify conformance with applicable documented instructions, procedures and drawings. Both inspection and process monitoring are to be provided when control is inadequate without both.

10.4 INSPECTION POINTS

10.4.1

Inspection hold points are established for non-routine maintenance procedures and design change packages (DCPs) by Plant Engineering and reviewed by the Plant Quality Control group for concurrence and possible assignment of additional inspection hold points to further assure conformance with applicable instructions, procedures, drawings and related documents or to meet appropriate code and regulatory requirements. Inspection hold points for work functions associated with activities other than non-routine maintenance and DCPs, are established by the originating department, by Quality Control or other responsible individuals.

10.4.2

Inspection hold points are inserted in procedures based upon safety significance, complexity of the item or activity, degree of standardization of the item or activity, past performance of the item or activity, procurement frequency, and the ability to verify quality by jobsite testing.

10.4.3

Inspection responsibilities, requirements, information and acceptance criteria for the work activity are to be identified in appropriate, approved plant documents (e.g. procedures, checklists, etc.)

10.4.4

For work involving the modification, repair, replacement or in-service inspection of ASME Code materials, parts and components, the work packages are to be made available to the Code Inspector prior to commencing work for his review and assignment of inspection hold points. The department responsible for the work activity is responsible for notifying the Code Inspector when the hold point is reached. Work is not to proceed past a Code Inspector's inspection hold point until signed or waived by the Code Inspector.

10.5 DOCUMENTATION

10.5.1

Inspections and process monitoring activities are to be performed and the results documented in accordance with approved procedures or instructions. Records are to: provide objective evidence that the

inspections and monitoring activities were performed in compliance with procedures, instructions or drawings to verify design requirements; show compliance with acceptance criteria or identify the cause of rejected items; and identify the appropriate inspection personnel approving the results.

10.5.2

Records are to be maintained in accordance with plant procedures and Section 17 of this manual. Inspection results on ASME code items are available to the Code Inspector for his review.

10.5.3

The results of all inspection and monitoring activities are periodically evaluated per plant procedures and the results documented to determine whether the individual inspection programs demonstrate that the plant can be operated safely and as designed.

10.6 NONCONFORMANCES

Noncomforming items found as a result of inspection and monitoring activities are identified, segregated and dispositioned in accordance with plant procedures and Section 15 of this manual. Rework, repair or replacement performed after completion of inspections are to require reinspection to the extent necessary to determine acceptability to established criteria.

11.0 TEST CONTROL

11.1 SCOPE

A test program is to be established to assure that testing required to demonstrate that an item will perform satisfactorily in service is identified, documented, and performed in accordance with written test procedures. These procedures are to incorporate or reference the requirements and acceptance criteria contained in applicable codes, standards and specifications and in the licensing documents. These activities include testing during the operational phases of the plant and those tests required as a result of modifications, repairs or maintenance. These activities are also to comply with the applicable provisions of Regulatory Guides 1.33, Rev. 2, unless otherwise noted in Table 1, and with the applicable sections of the ASME Boiler and Pressure Vessel Code for ASME designated items.

11.2 PROCEDURES

11.2.1

Written procedures/instructions are to be prepared to describe the requirements for conduct of the testing activities. These procedures/ instructions are to contain or reference the information required in Section 5 of this manual and in the applicable Regulatory Guides pertaining to Quality Assurance requirements for testing activities.

11.2.2

Test procedures/instructions and revisions thereto are to be subject to the same review and approval process as outlined in Section 5 of this manual.

11.3 TEST CONTROLS

11.3.1

Tests relating to plant start-up following a unit shut down or fuel loading are to be conducted per written procedures/instructions in order to evaluate plant performance as the start-up progresses. Initial start-up test programs are to be planned to permit safe fuel loading and start-up, to increase power in safe increments and to perform major testing at specified power plateaus.

11.3.2.

Surveillance tests during the operational phase of the plant are to be conducted per written procedures/instructions to assure that failures or substandard performances do not remain undetected and that the required operability is maintained to ensure they will continue to operate, keeping parameters within normal bounds, or will act to put the plant in a safe condition if they exceed normal bounds.

11.3.2.1

Mandatory inplant surveillance tests and inspections required to assure operation within the limiting conditions of operation are identified in the Technical Specifications applicable to each unit at the plant. To ensure that the required tests are performed as scheduled within the specified time interval, surveillance procedures are established and maintained for mandatory surveillances identified in the Technical Specifications. These procedures are to specify the component or system, type of surveillance activity, frequency of activity and the cognizant individual responsible for completion of the surveillance activity.

11.3.2.2

Inservice inspections required to meet the requirements of ASME Boiler and Pressure Vessel Code, Section XI, are to be identified in the In-Service Inspection (ISI) Programs applicable to each unit at the plant. Plant Engineering is to establish and maintain an ISI plan for each unit. The plan specifies the inspection items, inspection procedures, inspection intervals and type of inspections. Plant Engineering is to coordinate the implementation of the ISI plans at appropriate scheduled outages. The plans are also to be made available for review by the Code Inspector.

11.3.3

Tests following plant modifications, repairs, maintenance, or significant changes in operating procedures, are to be conducted to confirm that they are not detrimental to the safe and efficient operation of the plant and that the components or systems demonstrate satisfactory performance.

11.3.4

Requirements for the given test to be performed are to be identified in the test procedures/instructions. Evidence is to be available to assure the following minimum requirements are met:

a) test equipment and measuring devices are calibrated in accordance with the requirements of Section 12 of this manual and are functioning properly;
b) test personnel have been qualified to perform the test in accordance with the requirements of Section 2 of this manual;
c) appropriate witness and hold point notifications have been provided;

d) test perequisites completed; and

e) when accuracy requirements for tests exceed the accuracy of normally available process or measuring and test equipment, such additional accuracy requirements are to be specified within those test procedures.

11.3.5

Testing activities are to be subject to surveillance/inspections in accordance with Section 10 of this manual. Testing as a result of repair, modifications, replacement or scheduled inservice tests on ASME Code items is also subject to inspection by the Code Inspector. The assignment of inspection hold points is described in Section 10 of this manual.

11.3.6

Test results are to be documented in accordance with the applicable procedures/instructions. Test documents are to contain at least the following:

(1) Identity of item tested.
(2) Date of test.
(3) As-found condition.
(4) Identification of individuals performing test.
(5) Test results.
(6) Corrective actions performed if any.
(7) As-left condition.

11.3.7

Test results are to be evaluated by responsible plant personnel per plant procedures to assure that test objectives and inspection requirements

have been satisified. Non-conforming conditions, are to be identified and controlled in accordance with Section 15 of this manual.

11.4 RECORDS

Test results are to provide objective evidence that the testing was performed in compliance with approved procedures. Test records are to be maintained and transmitted to the plant Document Control Center for retention in accordance with Section 17 of this manual.

11.5 TEST STATUS

Inspection and test status is to be controlled in accordance with the provisions of Section 14 of this manual.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 SCOPE

12.1.1

A program is to be established to assure that devices used for measurements, tests and calibrations are identified, controlled and calibrated against reference standards to assure that accuracy is maintained within the limits specified by the inspection or test requirements. Control of measuring and test equipment is to comply with the applicable provisions of Regulatory Guide 1.33, rev. 2, pertaining to measuring and test equipment, unless otherwise noted in Table 1.

12.1.2

This section does not apply to rulers, tape measures, levels or other such devices where normal commercial practices provide adequate accuracy.

12.2 RESPONSIBILITIES

12.2.1

The cognizant Superintendents/group Supervisors at the plant are responsible for establishing and maintaining lists of measuring and test equipment under their control that require periodic calibration and for the calibration of this equipment, as assigned within plant procedures.

12.2.2

The cognizant Supervisor is responsible for identifying measuring and test equipment required for the activity and assures that the devices are used only by qualified personnel.

12.2.3

Plant personnel are to be responsible for utilizing only properly identified and calibrated measuring and test equipment when performing inspections and tests for record.

12.2.4

The Manager, Nuclear Quality Control and his staff are responsible for monitoring test equipment control and use in order to verify compliance with the program.

12.3 GENERAL

12.3.1

Calibration procedures are to be established for each type of measuring and test equipment. These procedures are to conform to recognized codes and standards and to local, state and federal regulations, and are to be referenced on the calibration reports.

12.3.2

Measuring and test equipment is to be properly controlled, calibrated and adjusted at specific intervals or prior to use to assure the necessary accuracy of calibrated equipment. Calibration intervals are to be based upon the type of equipment, manufacturer's recommendations, stability and reliability characteristics, required accuracies, use and other conditions affecting calibration.

12.3.3

Reference standards used in the calibration of measuring and test equipment are to be traceable to the National Bureau of Standards, or if

nonexistent, to accepted industry or AP&L standards. Reference standards are to have an accuracy at least four times that of the measuring and test equipment. In any instance where the four times criteria is unable to be met, standards are to have an accuracy level, acceptable calibration range, and precision equal to or better than those required for the ranges affected by the calibration. Accuracies less than four times will be acceptable when warranted by statistical analysis or limited by the state-of-the-art as authorized by responsible management. Reference standards are to be maintained in an environment with temperature, humidity and cleanliness controls compatible with maintaining accuracy and operating characteristics of the standards.

12.3.4

When measuring and test equipment are found to be out of calibration, an evaluation of the validity of previous inspection or test results and the acceptability of items previously inspected or tested is to be made and documented by written report in accordance with plant procedures. If any piece of measuring and test equipment is consistently found to be out of calibration, it is to be repaired or replaced.

12.3.5

Recalibration per plant procedures is to be performed when the accuracy of either installed or calibrated equipment is questionable.

12.4 EQUIPMENT IDENTIFICATION

12.4.1

The measuring and test equipment list is to contain sufficient information to uniquely identify each item listed and is to include as a minimum, calibration intervals, tolerances and storage locations. The

list is also to identify the group responsible for the control of each item.

12.4.2

Each item listed on the measuring and test equipment list is to be tagged, labeled or otherwise identified per plant procedures in such a manner that clearly identifies the equipment and its calibration status and provides traceability to the calibration records.

12.4.3

Measuring and test equipment found to be out of calibration is to be tagged and segregated from acceptable equipment in accordance with plant procedures until repaired and recalibrated.

12.5 RECORDS

Calibration documentation is to be maintained to verify calibration status, condition, accuracy and out of tolerance trends of the equipment.

13.0 HANDLING STORAGE AND SHIPPING

13.1 SCOPE

Activities for the handling, storage and shipping, including cleaning, packaging and preservation of materials and equipment are to be performed in accordance with established instructions, procedures or drawings, to prevent damage, deterioration or loss of the item. Activities are to comply with the provisions of Regulatory Guide 1.38 rev. 2 unless otherwise noted in Table 1.

13.2 GENERAL

13.2.1

Instructions for preservation are to be provided for items subject to deterioration or damage through exposure to air, moisture, or other environments during fabrication, processing, assembly, and interim storage periods. Items are to be cleaned, preserved and packaged as required to preclude deterioration and prevent damage. When maintenance of specific internal or external environments are necessary, they are to be included in special packaging instructions and maintenance procedures.

13.2.2

Procurement documents assure that any special cleaning, preserving, handling, packaging or shipping requirements for purchased material or equipment are taken into account.

13.2.3

For critical, sensitive, perishable or high value articles, recommendations for their handling, storage, packaging, shipping and preservation are to be requested from the supplier per the procurement

documents and furnished to the plant prior to or upon receipt of the item at the plant.

13.3 SHIPPING CONTROLS

13.3.1

Shipping requirements are to be specified in the procurement documents. Suppliers compliance to these requirements are to include controls to assure that items are complete and assembled as required; items have been preserved and packaged in accordance with the procurement documents; items have been marked and identified in accordance with specifications and procurement documents; items have been loaded for shipment in such a manner as to prevent damage; and required documentation is complete and furnished in accordance with the procurement documents.

13.3.2

Special nuclear material and sources are to be shipped and stored as specified in the AP&L operating license and other appropriate regulatory documents. The Health Physics Supervisor is responsible for assuring that radioactive sources and instruments containing radioactive sources are shipped, stored and handled per these requirements and plant procedures. The Nuclear Support Supervisor is responsible for assuring that special nuclear material (SNM), as defined in plant procedures, are shipped, stored and handled per these requirements and plant procedures.

13.4 RECEIVING

13.4.1

Materials and equipment are to be received at the plant per plant procedures and subjected to a receipt inspection in accordance with Section 7 of this manual. As part of the inspection activity, received

materials and equipment are to be inspected for damage, deterioration, cleanliness and proper identification and markings per plant procedures for receipt inspection.

13.4.2

Results of the receiving inspection and disposition of the material or equipment are to be documented on receiving inspection records. Nonconforming items are to be handled in accordance with plant procedures and Section 15 of this manual.

13.5 STORAGE CONTROLS

13.5.1

Materials and equipment which have completed the receiving process are to be stored based on the classification level of storage specified on the procurement documents or related design documents.

13.5.2

Storage control procedures are to be established which include, as a minimum, provisions for the following: controlled access and usage of the storage area; cleanliness and good housekeeping controls; fire protection; protection from environmental hazards; segregation of hazardous materials; and control of those items which have a specified shelf life.

13.5.3

Only items which have completed the receiving process are to be placed in a controlled storage area. Records of the items' location are to be provided by the Materials Management Supervisor (see paragraph 13.3.2 for control of radioactive sources and SNM) to identify those items currently

in storage and to facilitate inspection and maintenance planning. Issuance of items from storage for installation or use are to be documented and controlled in accordance with plant procedures.

13.5.4

Items identified as requiring maintenance during storage are to be maintained in accordance with a documented maintenance program.

13.5.5

Storage areas are to be monitored by individuals responsible for the storage areas so that the integrity and security of stored items is effectively maintained. Inspections and examinations under the control of the Manager, Nuclear Quality Control are to be performed and documented on a periodic basis to assure that the integrity of the items and their containers are being maintained. Periodic audits under the control of the Quality Assurance Manager are also performed to assure compliance to storage requirements.

13.6 HANDLING CONTROLS

13.6.1

Special handling requirements are to be specified in the procurement documents and plant procedures to protect the quality of items susceptable to handling damage. Special tools and equipment are to be provided to handle these items and are to be controlled and maintained per written procedure to assure safe and adequate handling.

13.6.2

Special handling tools and equipment are to be inspected and tested at specific times in accordance with written procedures to verify that the

handling tools and equipment are adequately maintained. Inspection and test status of these handling tools and equipment are to be controlled in accordance with the applicable sections of this manual.

14.0 INSPECTION, TEST AND OPERATING STATUS

14.1 SCOPE

14.1.1

The removal from service, inprocess status and return to service of equipment, components and systems for maintenance, modifications, repair, test or inspection is to be controlled per established plant procedures. These controls are to assure that plant personnel are aware of equipment, structure or system conditions and to prevent their inadvertent use unless cleared by operation personnel.

14.1.2

Maintenance activities are to be performed in accordance with an established maintenance program to assure that equipment, systems and structures are maintained in a condition which allows them to perform their intended function.

14.2 EQUIPMENT CONTROL

14.2.1

Prior to removal of equipment, components or systems from service for maintenance, modification, repair, test or inspection activities, permission is to be received and documented from the Shift Supervisor. The Shift Supervisor is to assure that the item can be released without affecting plant safety.

14.2.2

The status of equipment, components and systems during these activities is to be identified in accordance with plant procedures/instructions, which contain, as a minimum, the following:

1) methods for control of equipment to maintain personnel and reactor safety and to avoid unauthorized operation of equipment or systems.

2) the use of markings or other suitable means to indicate the status of activities being performed upon individual items. Suitable means are to include identification numbers which are traceable to records or the status of these activities.

3) provisions for the identification of items which have satisfactorily passed the required activities. In cases where required documentary evidence is not available, the associated equipment or system is to be considered nonconforming and handled in accordance with Section 15 of this manual.

4) provisions for independent verifications to ensure that necessary measures (locking or tagging) to secure and identify equipment or systems in a controlled status, have been implemented correctly.

14.2.3

When entry into a closed system is required, control measures are to be established to prevent entry of extraneous material and to assure that foreign material is removed before the system is reclosed.

14.2.4

During maintenance or modification activities, certain portions of systems, as identified in plant procedures, may be subject to potential contamination with foreign materials. To prevent such contamination, control measures, including measures for access control, are to be established. Immediately prior to closure, an inspection is to be conducted to assure cleanness and the result of such inspection is to be documented.

14.2.5

If temporary modifications (such as temporary bypass lines, electrical jumpers, lifted electrical leads and temporary trip point settings) are required for a system or piece of equipment, they are to be performed in accordance with plant procedures. A status log is to be maintained by the Shift Supervisor, identifying the current status of such temporary modifications. Temporary modifications are to be verified by individuals independent of the group performing the activity and documented to assure the required actions are taken to return the equipment or system to its original operating configuration and status.

14.2.6

When equipment or a system is properly identified as being ready to be returned to service, the appropriate Shift Supervisor is notified and initiates the proper operation procedures. Testing of the equipment or system for functional acceptability is to be in accordance with Section 11 of this manual and documented to verify current status of the item.

14.2.7

Equipment, structures and systems found to be nonconforming as a result of an activity are to be handled in accordance with plant procedures and Section 15 of this manual.

14.3 MAINTENANCE CONTROL

14.3.1

In addition to the requirements and controls identified in paragraph 14.2 of this section, a maintenance program is to be planned and scheduled through the Maintenance Manager to assure that the safety of the plant is not compromised nor the Technical Specifications violated. Maintenance activities are to be performed per plant procedures and instructions and conducted in a manner to assure quality at least equivalent to that specified in the design documents, material specifications and inspection requirements. As experience is gained in operation of the plant, routine maintenance may be altered to improve equipment performance and procedures for repair of equipment are to be improved as directed by the Maintenance Manager.

14.3.2

A preventive maintenance program, including procedures and instructions for systems, structures and components, is to be established and maintained under the Maintenance Manager which prescribes the frequency and type of maintenance to be performed in order to preclude equipment malfunctions. The program is to be implemented by qualified maintenance personnel in accordance with written procedures and instructions which specify the work activities, acceptance requirements and the control measures to assure adequate quality. When equipment malfunctions occur, the cause is to be promptly determined, evaluated and recorded per plant procedures and Section 16 of this manual.

14.4 OVERALL PLANT STATUS

14.4.1

The Shift Supervisor is provided sufficient knowledge of the overall plant status of equipment, structures and systems to control operation of the plant in a safe manner. The Shift Operators are to maintain a ready reference of plant systems, equipment and components alignments, as well as a status board summary of their conditions.

14.4.2

The turnover of duties to personnel on succeeding shifts is conducted in accordance with approved plant procedures. These procedures include documented turnover action appropriate to the duty station acknowledging the status of the nuclear power plant, its structures, systems and components (including design changes/modifications which may affect the performance of their duties) and transfer of authority.

15.0 NONCONFORMING MATERIAL, PARTS AND COMPONENTS

15.1 SCOPE

Nonconforming items are to include materials, parts, components, processes, documents and as applicable, services (including computer codes) that do not conform to applicable regulations, codes, standards, specifications, drawings or licensing documents. Nonconforming items are to be controlled in accordance with approved procedures to prevent their inadvertant use or installation. These procedures are to contain measures to assure the prompt identification and notification, documentation, segregation, technical review, disposition and verification of a nonconforming item.

15.2 GENERAL

15.2.1

It is the responsibility of each individual to identify a nonconforming condition, whether related to a product, process or documentation, and to report it to their cognizant supervisor for review and concurrence. The initiator is to document the nonconformance on a Nonconformance Report (NCR) unless the nonconformance is determined to be a technical specification violation and/or reportable to the NRC. See paragraph 15.3 for reportable nonconformances.

15.2.2

Nonconforming items are to be tagged with a hold tag, or otherwise identified per plant procedures, to prevent inadvertant use or installation of the item. Nonconforming items are to be segregated from acceptable items unless they are currently installed or their size, weight, configuration, etc., makes it impractical to move to a segregated

area. Hold tags are to remain on the item until the disposition is complete per plant procedures.

15.2.3

Nonconformance Reports are to identify the group responsible for dispositioning the nonconformance. The assigned individual within the responsible group is to evaluate the nonconformance and confer, as appropriate, with interfacing groups to determine its cause and recommended disposition. The disposition, which may be reject, rework, repair or use-as-is, and the corrective action taken to prevent recurrence is to be documented on the NCR.

15.2.4

The initiator of the NCR and his department head are to review the disposition for acceptance prior to implementing corrective action. If they cannot agree with the assigned individual on the disposition, the plant General Manager is to decide. For a repair or use-as-is disposition, a cognizant engineer knowledgeable in the design requirements for the affected item is also to review the NCR for concurrence of the disposition. Written justification for the design change, repair or deviation that has been accepted is to be documented to denote the as-built condition and is to be made a part of the NCR.

15.2.5

The acceptability of rework or repair of materials, parts, components, systems and structures are to be verified by reinspecting the item as originally inspected or by a method which is at least equal to the original inspection method. The rework and repair inspection records are to be documented and become part of the permanent records for the item. Upon completion of the corrective action, the Manager, Nuclear Quality

Control is to verify completion of corrective actions in accordance with plant procedures and if acceptable, close the NCR.

15.2.6

For ASME Code, Section III, Division 1 materials, parts and components dispositioned repair or use-as-is, the NCR is to be subject to review and concurrence by the Code Inspector.

15.3 REPORTABLE NONCONFORMANCES

15.3.1

Nonconforming items or conditions which are reportable per the Technical Specifications to the NRC are to be documented by the initiator and forwarded to the Special Projects Manager so the appropriate report, per plant procedures, can be prepared.

15.3.2

Upon disposition of the report by the responsible group the PSC reviews the report for concurrence and possible assignment of additional corrective actions and forwards the report to the plant General Manager for final approval.

15.3.3

The LRGO Licensing section is to be responsible for transmitting approved reports to the NRC within the time period specified in the Technical Specifications and Licensing procedures.

15.4 SUPPLIER NONCONFORMANCES

15.4.1

Procurement documents are to contain requirements for the vendor/contractor to identify nonconforming conditions to AP&L which violate a technical or material requirement of the procurement document and which results in a disposition of repair or use-as-is. All such nonconformances are to be reported to AP&L for evaluations and acceptance. The vendor/contractor is to document such nonconformances on their applicable nonconformance report which is to be included in the final documentation package submitted to AP&L, in accordance with the procurement documents.

15.4.2

Upon receipt of items at the plant, a Quality Control Engineer is to review any nonconformance reports in the documentation package to assure the nonconforming conditions have been properly dispositioned and accepted by AP&L.

15.5 RECORDS

15.5.1

Upon completion of disposition and verification activities, the completed NCR's, reports, and related documents generated to ensure proper disposition and resolution of the nonconformance are to be forwarded to and maintained by the Document Control Center.

15.5.2

The Manager, Nuclear Quality Control is to maintain and issue a monthly report to the plant General Manager, identifying the current status of all open NCR's for management review.

16.0 CORRECTIVE ACTION

16.1 SCOPE

A corrective actions system is to be established to assure that conditions adverse to plant safety, such as failure, malfunctions, deficiencies, deviations, defective material and equipment, abnormal occurrences and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to safety, this system is to assure that the cause of the condition is determined and corrective action taken documented and reported to appropriate levels of management for independent review.

16.2 GENERAL

16.2.1

When deviations, deficiencies, malfunctions or other abnormal occurrences or conditions are encountered, they are to be reported to responsible authorities for review and disposition in accordance with Section 15 of this manual.

16.2.2

Cognizant supervisors are to review discrepancies discovered during the course of station operations, and in the case of significant conditions adverse to safety, initiate action to identify their cause and take necessary corrective action to prevent their recurrence. Corrective action measures to resolve the discrepancies and to prevent their recurrence are to be documented in accordance with Section 15 of this manual.

16.2.3

The appropriate plant department head is to review recorded nonconformances and may specify the need for additional corrective action. The plant's General Manager is to review the monthly status reports concerning "open" nonconformance reports and takes appropriate action to ensure corrective action is both prompt and prevents recurrence. If the nonconformance is of a significant condition adverse to safety, the plant's General Manager may request assistance from technical support groups at the plant and/or LRGO to evaluate the nonconformance for final disposition.

16.2.4

Adverse quality or safety conditions discovered by QA or QC personnel during their document review, inspection, audit or surveillance activities, which appear to be of a repetitive nature, are to be documented on an appropriate report form in accordance with applicable QA and QC procedures.

16.2.4.1

The responsible organization to which the corrective action document is addressed is to evaluate the adverse condition and document the action taken to resolve the condition. In the case of significant conditions adverse to safety, documentation is to include action initiated to determine cause and to prevent recurrence.

16.2.4.2

The response is to be evaluated by the initiating organization (QA or QC) to determine the adequacy and completeness of the corrective action

commitments. If the response is acceptable, the initiating organization is to perform follow-up action to verify implementation of the corrective action commitments, document their findings and when acceptable, close out the corrective action document.

16.2.4.3

If the initiating and responding organizations cannot agree upon a resolution, it is to be referred to the next level of management for resolution. The General Manager at the plant and the Senior Vice President, Energy Supply at LRGO are to have the final decision regarding resolution of QC and QA initiated corrective action documents, respectively.

16.2.5

When vendors furnish products or services that do not conform to the requirements of the applicable purchase contract and, in the opinion of the Manager, Nuclear Quality Control, the vendor warrants consideration for reappraisal, the Manager, Nuclear Quality Control is to submit a vendor reappraisal request to the Manager, Quality Assurance for determination of action to be taken. Results of the reappraisal, together with a request for specific corrective actions, are to be transmitted to the vendor. If the vendor does not improve his quality assurance system and products as requested, the Manager, Quality Assurance is to remove the vendor from the Qualified Vendor List (QVL) in accordance with departmental procedures.

16.3 SIGNIFICANT CONDITIONS

16.3.1

Significant conditions are to include, as a minimum, the following:

(1) Conditions that have a direct adverse affect on the safety of the plant or personnel.
(2) Conditions that have caused the uncontrolled release of radioactive materials (liquid, solid, gaseous or air particulate) to the environs.
(3) Trends indicated by nonconformances which could lead to unsafe plant operations.
(4) Any condition the plant's General Manager considers to be of major consequence.

16.3.2

When significant conditions adverse to safety are discovered, the responsible supervisor and management personnel are to evaluate the condition and determine if it is a reportable occurrence. Reportable occurrences are to be handled as described in Section 15 of this manual and are to be submitted to the PSC and SRC for review.

16.4 VERIFICATION

Verification by surveillance or audit of the effective implementation of corrective actions is to be periodically performed and documented by Quality Assurance personnel. Audits are to be performed in accordance with Section 18 of this manual.

17.0 QUALITY ASSURANCE RECORDS

17.1 SCOPE

17.1.1

Documentation covering design, construction, procurement, fabrication, inspection, maintenance, nonconformance and corrective action, test and audit activities is to be filed and stored to provide objective evidence of quality-related activities and to assure the ability to reconstruct significant events. Control of records is to be in accordance with Regulatory Guide 1.88, Rev. 2 (10/76) unless otherwise noted in Table 1.

17.1.2

Quality assurance records are to include operating logs, results of reviews, inspections, tests, audits, material analyses; monitoring of work performance; qualification of personnel, procedures, and equipment; historical drawings, specifications, engineering reports, calculations, procurement documents, calibration procedures and reports, nonconformance reports, corrective action reports, correspondence and related records pertinent to quality as defined in plant procedures for records management.

17.2 RESPONSIBILITY

17.2.1

The Plant Administrative Manager is responsible for the establishment, implementation and maintenance of the records management program to be used throughout the operational life of the plant and for ensuring that documentation retention requirements comply with applicable technical specifications, codes and regulations.

17.2.2

AP&L personnel, other than plant staff, and outside firms that perform work on the plant in the areas of design, procurement, maintenance, modification, testing, quality assurance and special nuclear materials are to provide documentation/certification records to the plant for subsequent storage and retention by the Plant Administrative Manager.

17.2.3

Quality Assurance personnel are to periodically audit quality-related records and records filing and storage procedures to assure that the records management program is being properly implemented. Audits are to be performed as outlined in Section 18 of this manual.

17.3 DOCUMENTATION RETENTION

17.3.1 Lifetime Quality Assurance Records

17.3.1.1

Lifetime records are defined as those which meet one or more of the following criteria:

(1) Those which would be of significant value in demonstrating capability for safe operation.
(2) Those which would be of significant value in maintaining, reworking, repairing, replacing or modifying the item.
(3) Those which would be of significant value in determining the cause of an accident or malfunction of an item.
(4) Those which provide required baseline data for inservice inspection.

17.3.1.2

Lifetime quality-related records are to be maintained for the life of the particular item while it is installed in the plant or stored for future use as prescribed in applicable plant procedures for document retention and disposition.

17.3.2 Non-Permanent Quality Assurance Records

17.3.2.1

Non-permanent records are defined as those which meet all of the following criteria:

(1) Those of no significant value in demonstrating capability for safe operation.
(2) Those of no significant value in maintaining, reworking, repairing, replacing or modifying the item.
(3) Those of no significant value in determining the cause of an accident or malfunction of an item.
(4) Those which do not provide baseline data for inservice inspection.

17.3.2.2

Non-permanent records are to provide evidence that an activity was performed in accordance with applicable requirements and be retained for specified periods as directed by the applicable plant procedures for document retention and disposition.

17.3.3

Categories of permanent and non-permanent records to be maintained and their appropriate retention periods are described in plant procedures.

17.3.4

The Manager, Nuclear Quality Control is responsible for receiving, inspecting and authenticating such documents as directed by plant procedures for turnover of quality assurance documents from suppliers to AP&L. When approved for receipt by Quality Control, such records are to be transmitted to the Plant Administrative Manager for filing and storage.

17.4 STORAGE

17.4.1

Permanent records are to be microfilmed and stored within a controlled area at the nuclear power plant per plant procedures. A duplicate set of microfilm is also made and stored at a remote location.

17.4.1.1

For storage of film and other special processed records, humidity and temperature controls are to be provided to maintain an environment as recommended by the manufacturer and plant procedures.

17.4.1.2

A list is to be prepared by the Plant Administrative Manager designating those personnel who have access to the storage files.

17.4.2

Plant storage systems are to provide for the accurate retrieval of information without undue delay and be sufficient to control and account for records removed from the storage facility.

17.5 RECORDS INDEXING AND RECEIPT CONTROL

17.5.1

Indexing methods and systems for quality-related records are delineated in plant procedures for plant records management.

17.5.2

Records submitted for storage in either lifetime or temporary files are to be subject to the following requirements for receipt control:

(1) Establishment of a records check list designating the required quality-related records.
(2) Establishment of a system designating criteria for document inspection to assure that records are accurately completed, legible and received in good condition.
(3) A file system to indicate which quality-related documents have been received.

17.5.2.1

Implementation of receipt control requirements for storage is the responsibility of the Plant Administrative Manager.

17.6 FINAL DISPOSITION

The plant Administrative Manager is responsible for disposal of quality-related records in accordance with plant procedures for document retention and disposition, which permits periodical purging of records retained past their required retention date.

18.0 AUDITS

18.1 SCOPE

18.1.1

A comprehensive system of planned and periodic audits are to be provided to assure and verify compliance with all aspects of the administrative controls and quality assurance program. Audits are to be planned and performed in accordance with written procedures, plans and checklists and are to conform to the applicable portions of Regulatory Guides 1.144, rev. 1 (9/80) and 1.146, rev. 0 (8/80), unless otherwise noted in Table 1.

18.1.2

The audit program is to include provisions to determine the compliance with and effectiveness of the quality assurance program in controlling structures, systems, components and activities in accordance with the rules set forth in the codes, standards and regulations identified in the Introduction of this manual.

18.2 AUDIT PERSONNEL

18.2.1

The Quality Assurance Manager is assigned auditing responsibility within this quality program and is responsible for the selection and assignment of auditors. Auditors are to be independent of any direct responsibility for performance of the activity which is to be audited and are not to report to a management representative who has direct responsibility for the activity being audited.

18.2.2

Auditors assigned auditing responsibilities are to have experience and training commensuate with the scope, complexity and/or special nature of the activities to be audited. When audit assignments are made, considerations are given to special abilities, specialized technical training, prior pertinent expertise, personal characteristics, education and capability. If no one within the QAO meets these prerequisites completely, technical specialists are to be used to assist in the auditing of the activity. Technical specialists are to meet the requirements of paragraph 18.2.1 of this section.

18.2.3

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

(1) Regular, active participation in the audit process.
(2) Review and study of codes, standards, procedures and instructions.
(3) Participation in training or orientation programs.

18.3 AUDIT SCHEDULE

18.3.1

Audits are to be performed on a planned and periodic basis in accordance with an audit schedule. Audit schedules are to be prepared at the beginning of each year by the QAO and approved by the Quality Assurance Manager and SRC.

18.3.2

Audit schedules assure that as a minimum, the following areas are audited, under the cognizance of the SRC, at the indicated frequencies within AP&L:

(1) The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.

(2) The performance training, qualifications, and retraining of all members of the facility management and operations staff, and the performance, training, and qualifications of new members of the entire facility staff at least once per 12 months.

(3) The results of all actions taken to correct deficiencies occurring in facility equipment, structure, systems or methods of operation that affect nuclear safety at least once per six months. (A portion of this activity is performed as a part of each internal quality audit.)

(4) The Facility Emergency Plan and implementing procedures at least once per 12 months.

(5) The Facility Security Plan and implementing procedures at least once per 12 months.

(6) Any other area of facility operation considered appropriate by the SRC or the Nuclear Operations Vice President.

(7) The Facility Fire Protection Program and implementing procedures at least once per 24 months.

18.3.3

Audits of vendor/contractor activities are to be scheduled as identified in Section 7, paragraph 7.3.3 of this manual. These audits are to evaluate and verify their quality assurance program, procedures and

activities, to assure compliance with the procurement documents, and to verify they periodically review and audit their suppliers quality assurance program.

18.3.4

Periodic reviews of the audit programs are to be performed by the SRC or their appointed management representative at least semi-annually to assure that audits are being accomplished in accordance with the requirements of the technical specifications, this manual and Regulatory Guide 1.33, rev. 2 (2/78), unless otherwise noted in Table 1.

18.3.5

Regularly scheduled audits may be supplemented, as required, to cover unforeseen events or changed requirements.

18.4 AUDIT IMPLEMENTATION

18.4.1

Audit plans and checklists are to be prepared by the auditor and approved by the Quality Assurance Manager prior to performing the audit. Checklists are to be used during the audit to assure that all requirements of the activities audited are addressed during the audit and that those procedures and instructions issued to control the audited activity are adequate.

18.4.2

Upon completion of an audit, a written report is to be prepared which includes at least the following items:

(1) Description of audit scope and date.

(2) Identification of the auditor(s).

(3) A summary of audit results.

(4) Details of nonconformances or programmatic deficiencies.

(5) Recommendations for correcting nonconformances or improving the Quality Assurance Program, as appropriate.

18.4.3

Deficiencies identified as a result of an internal audit are to be recorded on an Audit Finding Report (AFR) by the auditor and issued to the department head responsible for the area audited for corrective action. The department head or their assigned designee is to provide prompt corrective action to the deficiencies identified and document on the AFR the action taken or to be taken to prevent recurrence. Appropriate follow-up including re-audits by the assigned audit group is conducted in the deficient areas to verify proper and timely implementation of corrective action commitments. Follow-up actions are to be documented on the AFR.

18.4.4

Audit reports pertaining to plant activities are to be independently reviewed by the PSC and the SRC to determine if additional corrective actions need to be initiated to assure continued safe operation of the plant. Audit reports pertaining to LRGO activities are to be independently reviewed by the SRC. In addition to these reviews, the audit reports are to be distributed, as a minimum, to the Nuclear Operations Vice President, Quality Assurance Manager and appropriate levels of management having responsibility in the area audited to assure their awareness of the findings.

18.4.5

Audit results and findings related to external audits conducted by QA personnel are to be recorded and distributed to the Quality Assurance Manager and a designated representative of the audited organization. Deficiencies are to be recorded on an AFR, and the audited organization is to describe actions taken to correct deficiencies and prevent recurrence on the AFR. Corrective actions are to be verified by QA personnel and documented on the AFR.

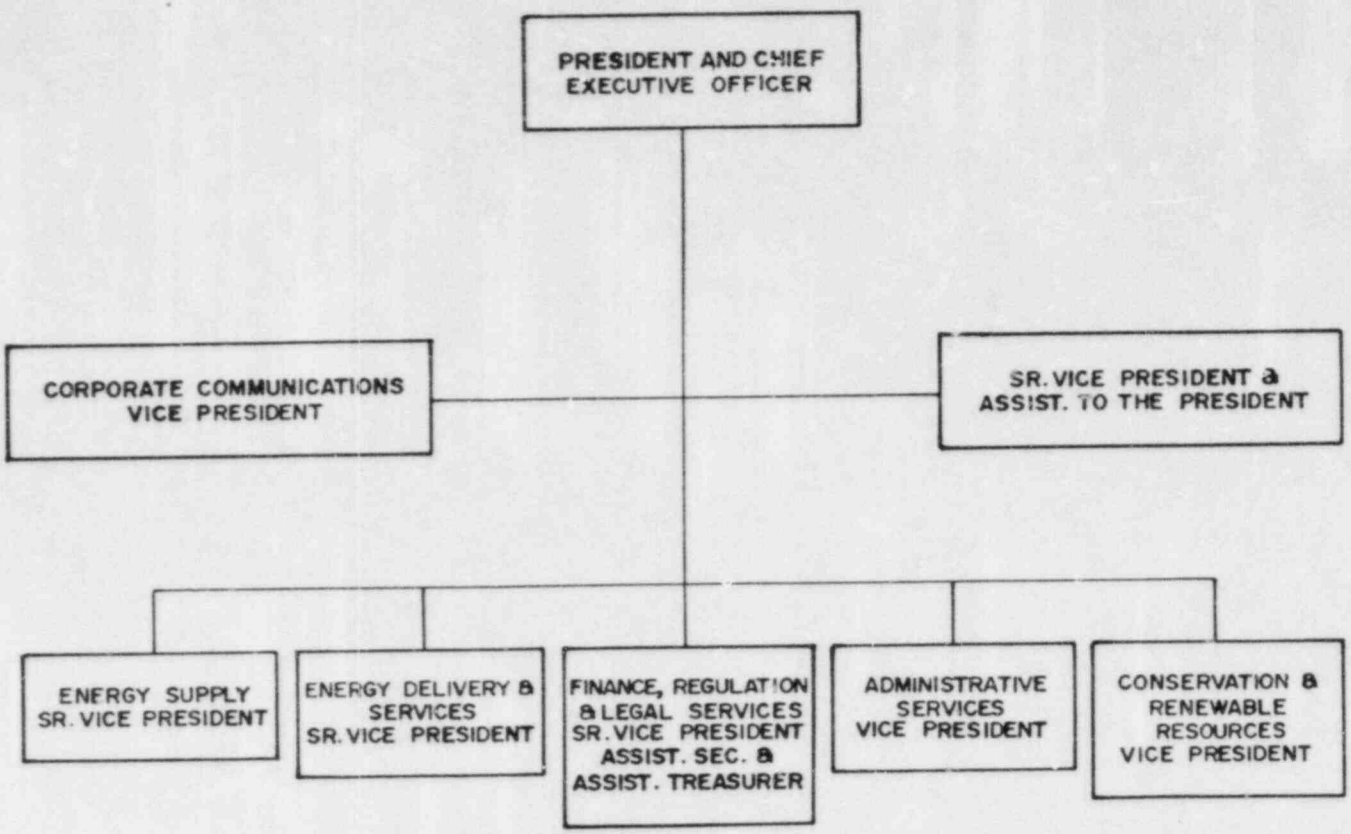
18.5 RECORDS

Written internal audit reports, including checklists, AFR's and related documentation supporting the follow-up activities are to be forwarded to the Administrative Manager for storage in accordance with Section 17 of this manual. External audit reports are to be maintained/stored in the applicable vendor/contractor file maintained by the Quality Assurance Manager.

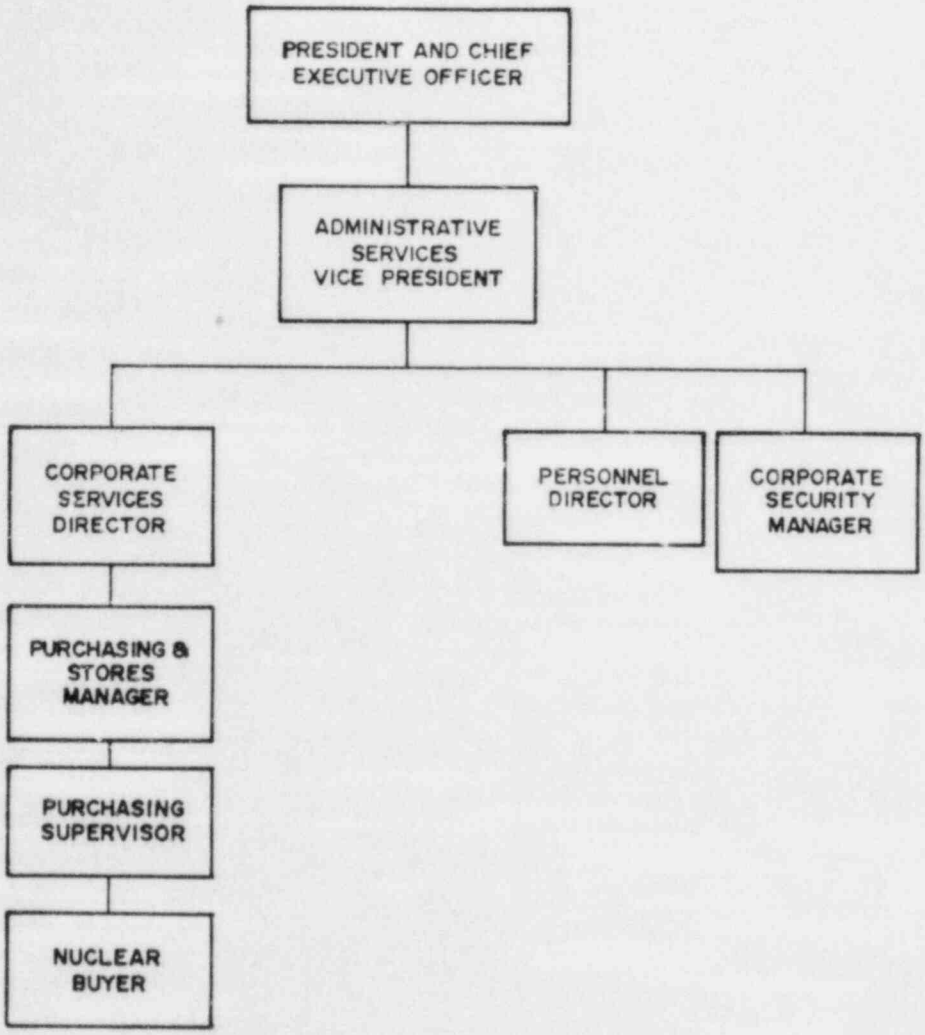
18.6 NUCLEAR FUEL AUDITS

Arkansas Power & Light Company delegates to Middle South Services, Inc., a wholly owned subsidiary of Middle South Utilities, Inc., the responsibility for performing those quality assurance functions necessary to assure that its nuclear fuel is designed and fabricated in accordance with regulatory requirements and accepted codes, standards and specifications. The MSS Quality Assurance section monitors the design and fabrication of the fuel through a program of audits of the fuel fabricator, including both design review audits and fuel fabrication audits. MSS also conducts audits of component suppliers as deemed necessary by the Manager, Qualtiy Assurance (MSS), to ensure the quality of the fuel. Formal audit reports are issued by MSS to document their

audit activities and to identify nonconformances or other items requiring action by the fuel fabricator. Resolution of nonconformances or other items requiring action is verified by MSS and documented in follow-up reports. The AP&L Quality Assurance Manager is on distribution for all audit and follow-up reports.

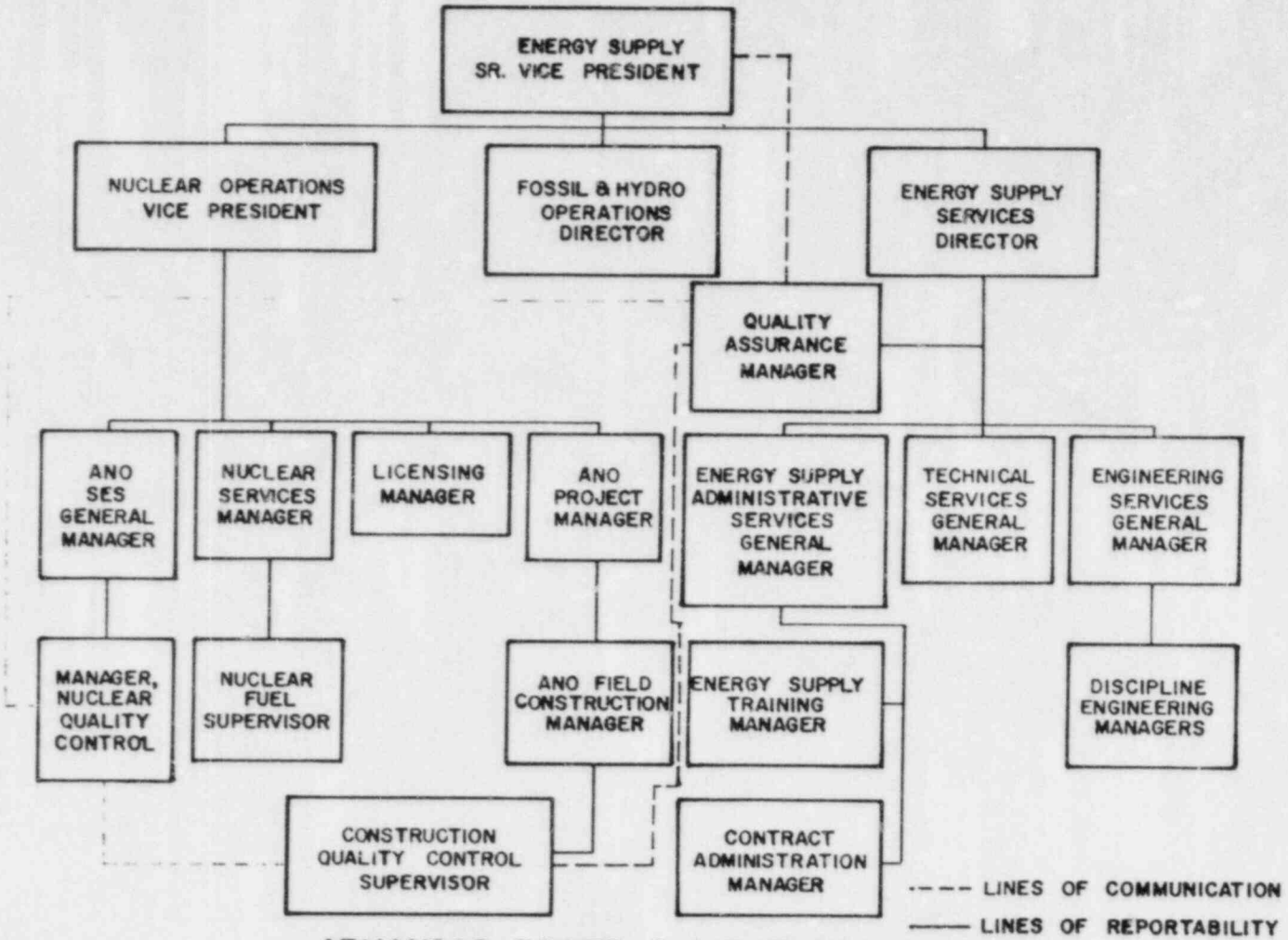


ARKANSAS POWER & LIGHT CO.
CORPORATE ORGANIZATION



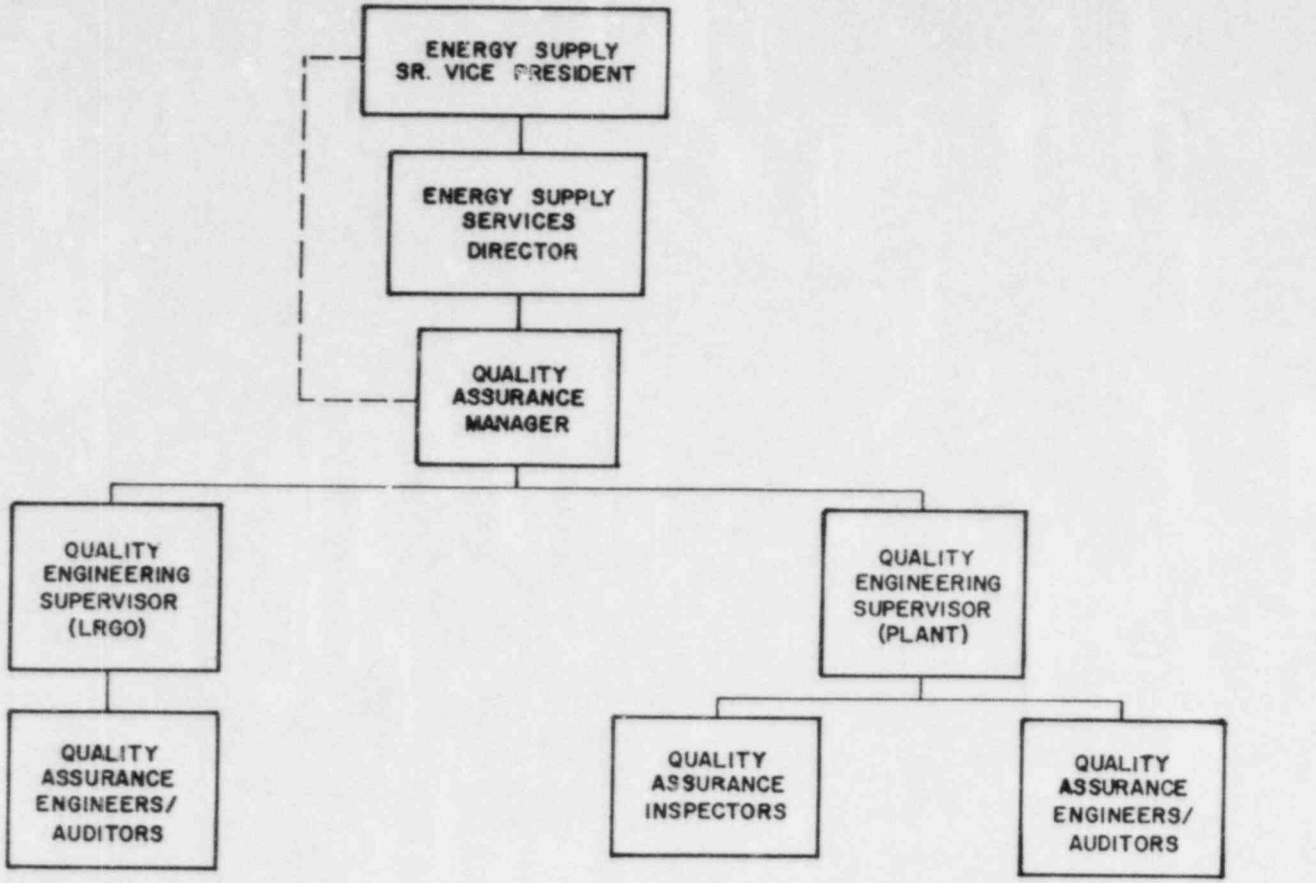
ARKANSAS POWER & LIGHT CO.
CORPORATE SERVICES

FIGURE 2. AP&L CORPORATE SERVICES

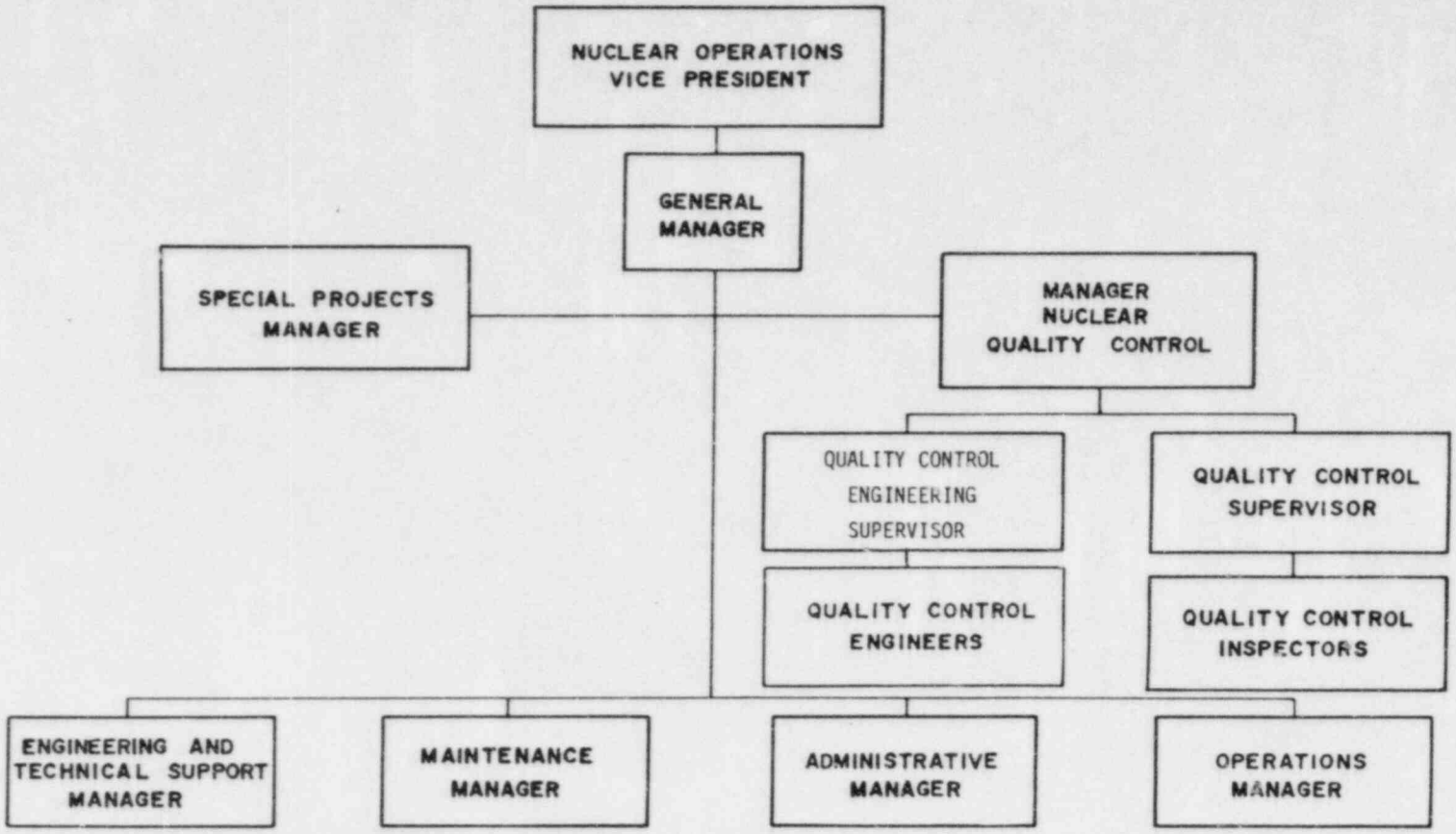


ARKANSAS POWER & LIGHT CO.
ENERGY SUPPLY ORGANIZATION

FIGURE 3. AP&L ENERGY SUPPLY ORGANIZATION

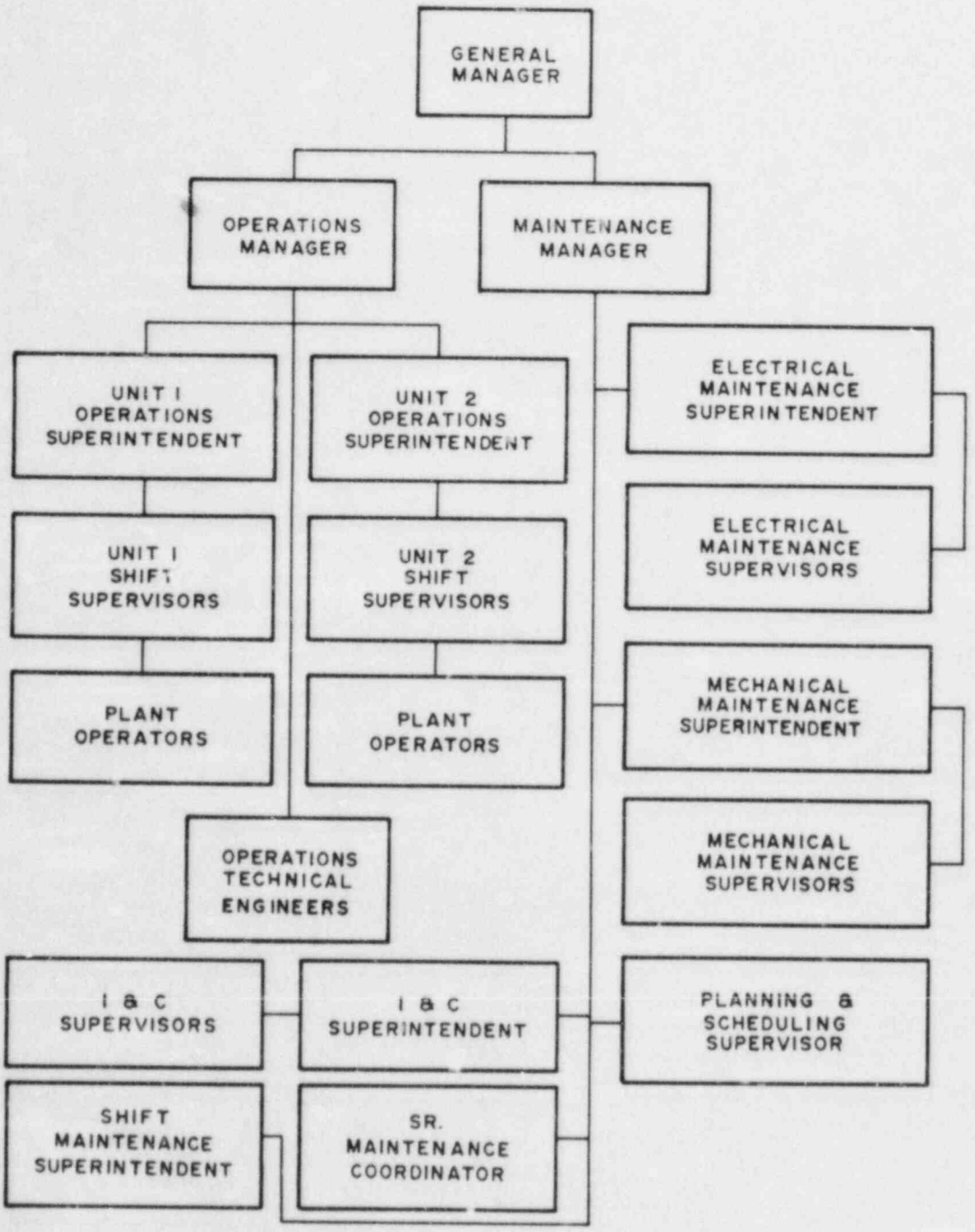


ARKANSAS POWER & LIGHT CO.
QUALITY ASSURANCE ORGANIZATION



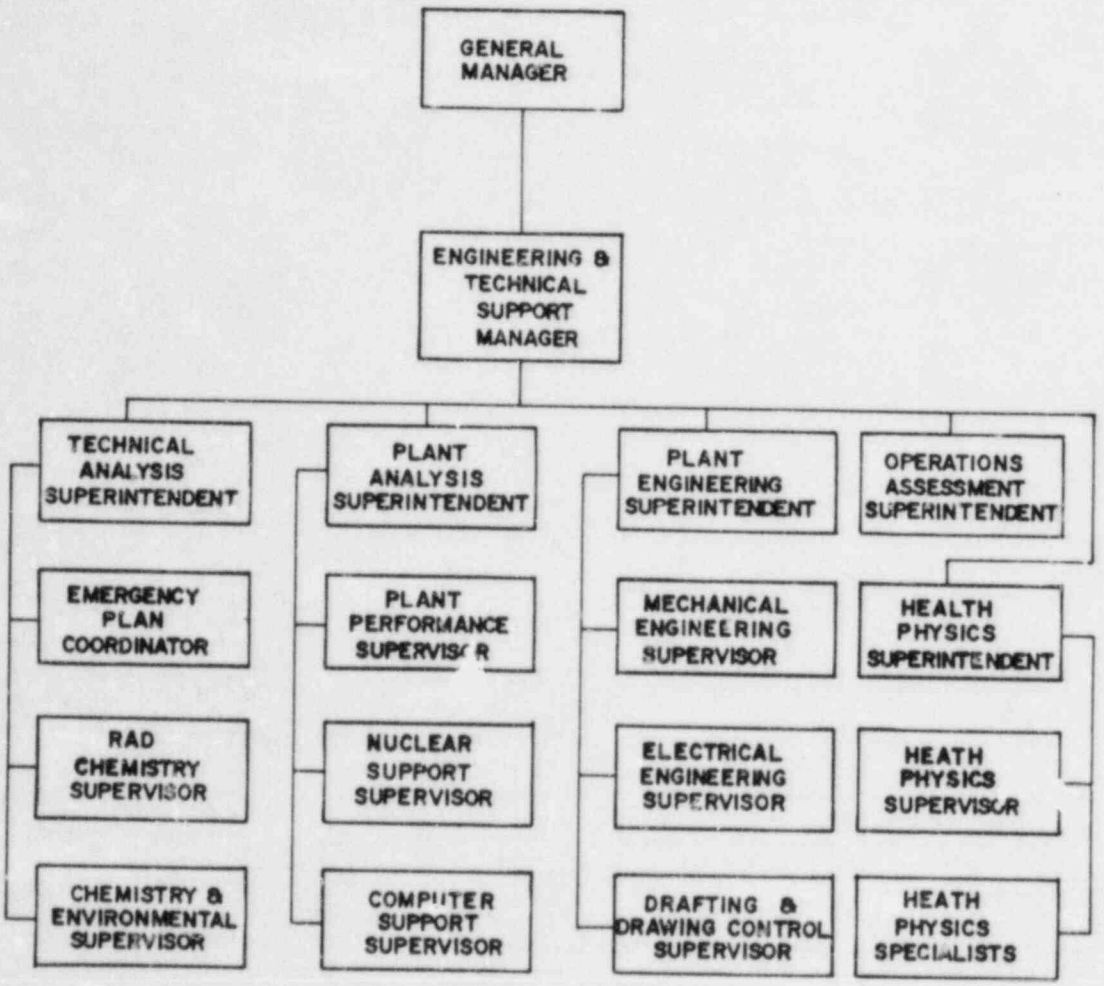
ARKANSAS POWER & LIGHT CO.
NUCLEAR PLANT ORGANIZATION

FIGURE 5. AP&L NUCLEAR PLANT ORGANIZATION

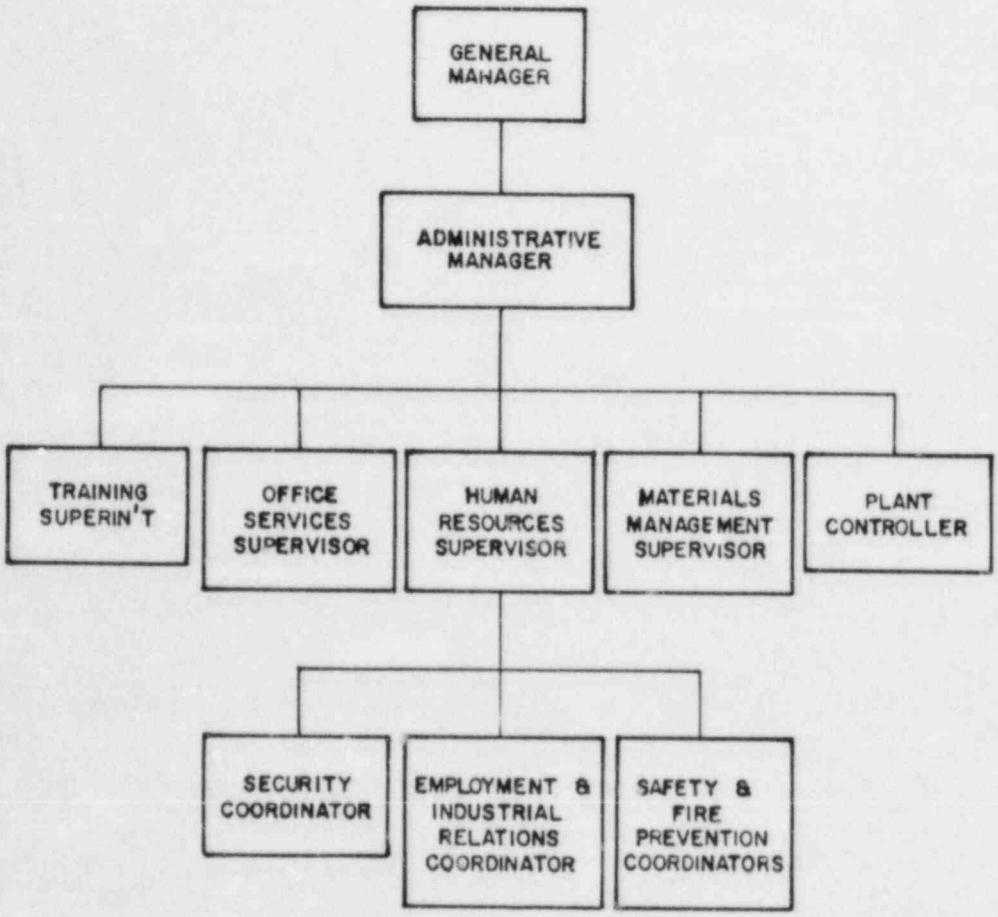


ARKANSAS POWER & LIGHT COMPANY
NUCLEAR PLANT ORGANIZATION

A P & L	TOPICAL REPORT FIGURE 6. AP&L NUCLEAR PLANT ORGANIZATION (PLANT OPERATIONS & MAINTENANCE)	REV. 6 DATE 5/30/84 PAGE F-6



ARKANSAS POWER & LIGHT COMPANY
NUCLEAR PLANT ORGANIZATION



ARKANSAS POWER & LIGHT CO.
NUCLEAR PLANT ORGANIZATION

TABLE 1

ARKANSAS POWER & LIGHT'S EXCEPTIONS/INTERPRETATIONS
OF REGULATORY GUIDES AND ANSI STANDARDS APPLICABLE
TO THIS QUALITY ASSURANCE PROGRAM

Regulatory Guide/ ANSI Standard	Requirement	Exceptions/ Interpretation
General	Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses. Certain ANSI Standards invoke or imply additional standards.	The AP&L commitment refers to the Regulatory Guides and ANSI Standards, specifically identified in this TOPICAL. Additional Regulatory Guides, ANSI Standards, Guides and similiar documents implied or referenced in those specifically identified in this TOPICAL are not part of this commitment.
General	Certain ANSI Standards and/or Regulatory Guides extend the scope of applicability to include systems, structures, and components whose satisfactory performance is required for a plant to operate reliably on "high-value	Our commitment to those standards applies only to those systems, structures, and components whose satisfactory performance is required to prevent postulated accidents that could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents. Reliable operation of the plant may depend upon

	articles."	other systems, structures and components which are not covered by this commitment.
ANSI N18.7 (Section 5.2.13.1)	Where changes are made to procurements, they shall be subject to the same degree of control as was used in the preparation of the original documents.	Consistent with the requirements of ANSI N45.2.11, paragraph 7.2, minor changes to (procurement) documents, such as, inconsequential editorial corrections, or changes to commercial terms and conditions may not require that the revised (procurement) document receive the same review and approval as the original documents.
ANSI N45.2.1 (Section 3.2)	Fresh water criteria for chlorides, and Jackson Turbidity Units.	The turbidity requirement on fresh water is deleted and the chloride requirement is revised to read "less than 250 ppm." The turbidity requirement for demineralized water is deleted.
ANSI N45.2.2 Subsection 5.2.1	"Preliminary visual inspection or examination shall be performed prior to unloading..."	Inspection after unloading is sufficient to determine the condition of many items. In special instances, pre-unloading examination is performed.

ANSI N45.2.2 Section 5.2.2	The (receiving) inspections shall be performed in an area equivalent to the level of storage requirement for the item.	Receiving inspection is performed in a manner and in an environment which does not endanger the requisite quality of an item. The receiving inspection area environmental controls may be less stringent than storage environmental requirements for that item, however, the short time spent in the less stringent receiving inspection area shall be of such duration that will not adversely affect the item being received.
ANSI N45.2.2 Paragraph 5.2.3	..."The 'Special Inspection' procedure, complete with documentation instructions shall be attached to the item or container..."	The "Special Inspection" procedure shall be readily available to inspection personnel and may be attached to the item or container.
ANSI N45.2.2 Subsection 6.2.4	The use or storage of food, drinks, and salt dispensers in any storage area is prohibited.	People working in storage areas have a right of access to water dispensers per OSHA requirements. Additionally, due to the location and layout of the building, personnel may temporarily store lunches in the work-place.

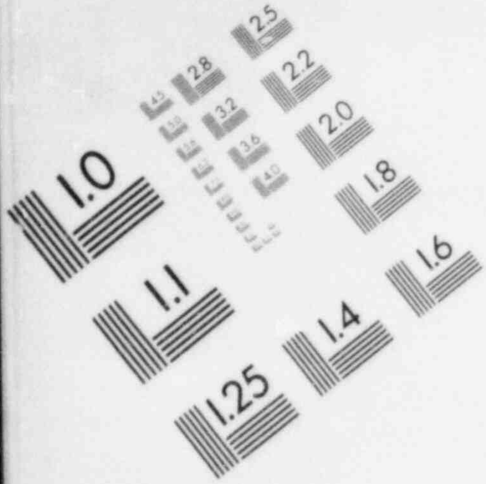
		This area is policed for sanitation.
ANSI N45.2.2 Appendix (A-3) A.3.9 (1) Second Group	"Container markings shall appear on a minimum of two sides of the container, preferably on one side and one end."	Containers are adequately marked for storage, identification, and retrieval. Multiple marking requirements are imposed, where necessary.
ANSI N45.2.2 Appendix (A-3) A.3.9 (4) Second Group	"Container markings shall be...no less than 3/4" high container permitting."	Container markings are of a size which permits easy recognition.
ANSI N45.2.2 Appendix (A-3) A.3.9	"Container marking shall include the following information..."	The information required in container marking is evaluated on a case-by-base basis. Marking is adequate in each case.
ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (1)	"Non-metallic plugs and caps shall be brightly colored."	Non-metal plugs and caps are of a suitably visible color.
ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (5)	Plugs or caps shall be secured with tape or other means as necessary to prevent accidental removal.	In cases where plugs or caps do not snugly fit, additional securing devices or measures which will not be detrimental to the item will be used.

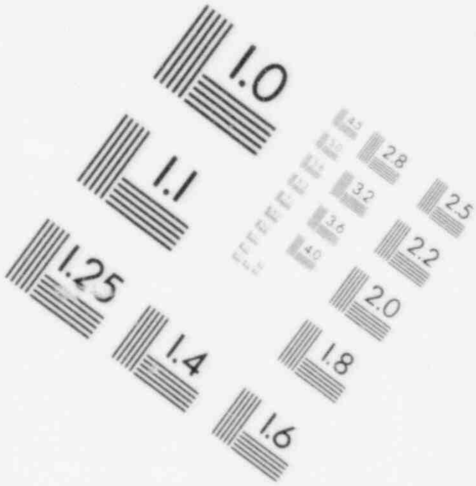
ANSI N45.2.2 Appendix (A-3) Section A 3.9	Marking of items not within a container.	The last paragraph of Section A.3.9 could be interpreted as prohibiting any direct marking on bare austenitic stainless steel and nickel alloy metal surfaces. In lieu thereof, paragraphs A.3.9. (1) and (2) will be used to control marking on the surface of austenitic stainless steels and nickel base alloys subject to the following limitations: "Marking materials containing sulfur, lead, zinc, mercury, copper and low melting alloys as a basic chemical constituent shall not be brought in contact, or shall not be used on surfaces of corrosion resistant alloys. Low sulfur, low fluorine and/or low chlorine compounds may be used on austenitic stainless steels." The maximum limits for the above mentioned marking materials will be as follows: (a) Total inorganic and organic halogen content shall not exceed one (1) percent. (b) The sulfur content shall not exceed one (1) percent.

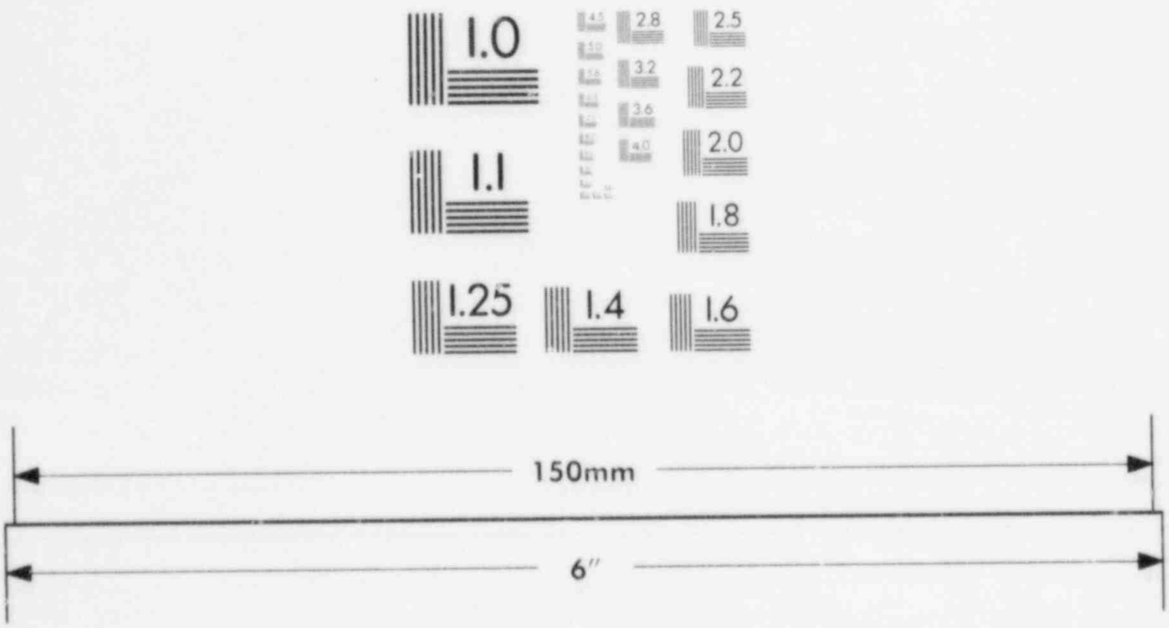
ANSI N45.2.2	Inert Gas Blankets	There may be cases involving large or complex shaped items for which an inert or dry air purge is provided, rather than a static gas blanket, in order to provide adequate protection due to difficulty of providing a leak proof barrier. In these cases, a positive pressure purge flow may be utilized as an alternate to a leak proof barrier.
ANSI N45.2.2 Appendix A, A.3.5.2, (1), (a)	Limits halogen and sulphur content of tape.	Engineering may allow the use of tapes containing greater amounts of halogens after appropriate evaluation, however, the quantities shall not be such that harmful concentrations could be leached or relased by breakdown of the compounds under expected environmental conditions.
Regulatory Guide 1.39 ANSI N45.2.3	General	Alternative equivalent requirements may be utilized to cover those situations not included in the subject Standard; for example, situations in which shoe covers

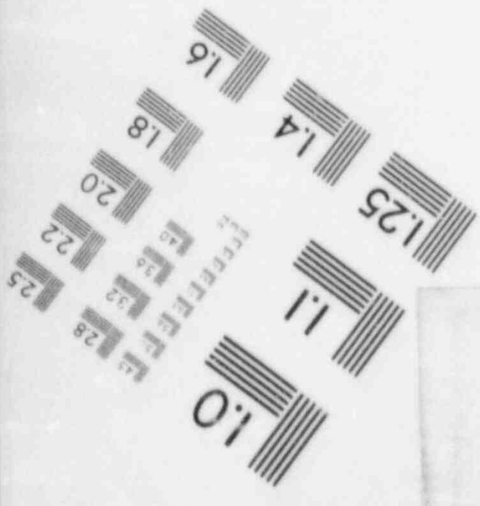
		and/or coveralls are required but material accountability is not. In addition, zones might be combined into the next more restrictive category in order to reduce total number of zones.
ANSI N45.2.3	Identifies various housekeeping requirements, including cleanliness, fire prevention, and fire protection which must be accomplished during the progress of construction.	When this standard is applied, its requirements are implemented in those areas affected by work activities associated with modifications, operations, or maintenance as determined necessary by Plant Staff.
Regulatory Guide 1.30/ANSI N45.2.4 Regulatory Guide 1.116/ANSI N45.2.8	Pre-Construction/ Installation Verification	This section required verification that items are in satisfactory condition for installation and have not suffered since initial receipt inspection. Upon receipt, items are inspected and stored in an environment which will not adversely affect the item. Documented routine inspections and periodic audits of the storage

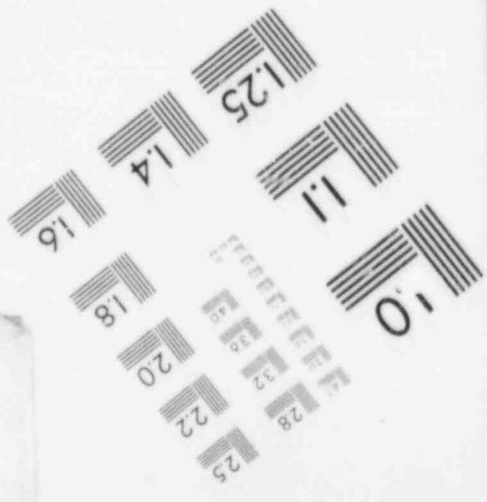
IMAGE EVALUATION
TEST TARGET (MT-3)











		areas assure that stored items are maintained in satisfactory conditions. Documentation of pre-construction verification in addition to documentation of initial receipt inspection, periodic storage inspections, and audits of storage is not required.
ANSI N45.2.4	Identifies various tests to be performed.	These tests will be performed as determined by Engineering or Nuclear Operations based upon the significance of change or modification.
R.G. 1.58 (Section C.6)	In addition... the candidate should be a high school graduate or have earned the General Education Development (GED) equivalent of a high school diploma.	AP&L takes exception to this requirement. AP&L's education and experience requirements are in accordance with ANSI N45.2.6-1978.
R.G. 1.74/ ANSI N45.2.10	Definitions of Certificate of Conformance and Certificate of Compliance."	Based upon the guidance of ANSI N45.2.13, 10.2, the definitions of these two terms will be exchanged.

R.G. 1.94/ ANSI N45.2.5 (Section 1.4)	Section 1.4 defines inprocess tests and states: "...samples of these tests must be taken from the lot or batch of materials supplied to the site for use."	This requirement for reinforcing steel will be interpreted to permit taking the rebar test specimen at the fabrication shop, prior to start of fabrication of the rebar from the heat or fraction thereof represented by the test specimen. For these tests performed at the fabrication shop, certification shall be available to provide objective evidence that the test specimens represent the material supplied for use at the site.
ANSI N45.2.5 (Section 4.5)	Requirement: Section 4.5, Concrete Placement, references American Concrete Institute (ACI) standards ACI-305-72, "Recommended Practice for Hot Weather Concreting" and ACI-306-66, "Recommended Practice for Cold Weather Concreting."	

Interpretation:
In order to clarify use of these ACI standards, we will apply the following requirements:

PLACING TEMPERATURES OF CONCRETE:

A. During hot weather concreting:

Placing temperatures of concrete will be limited to the following:

1) Concrete members less than 3 feet in least dimension will not exceed 90°F.

2) Concrete members from 3 feet to 6 feet in least dimension will not exceed 70°F.

3) Concrete members more than 6 feet in least dimension will have placing temperature as near 50°F as can be obtained by use of ice as necessary up to 100 percent of adding mixing water; and by shading aggregate and sprinkling the coarse aggregate the day it is to be used. Care will be taken so that no unmelted ice remains in the concrete at the end of the mixing period.

B. During cold weather concreting:

In heating the water and aggregate, live steam to heat the fine and coarse aggregate shall not be used. The permissible range for concrete temperature shall be as follows:

1) Sections less than 3 feet in least dimensions: 55 to 75°F.

2) Mass concrete 3 feet or more in least dimension: 45 to 65°F.

The mixing water and aggregate will be purchased as required. The materials will be free of ice, snow and frozen lumps before they enter the mixer.

ANSI N45.2.5 (Section 4.8)

Requirement:

Section 4.8, "In-process Test on Concrete and Reinforcing Steel" states, "Samples for in-process test of concrete shall be taken at the sampling point in accordance with ASTM C172. This point may be at the truck mixer discharge if the last piece of conveying equipment is a chute, bucket, conveying system, or similar equipment. Pump concrete must be sampled from the pump line discharge."

Interpretation:

For performance of correlation tests, the requirements of ANSI N45.2.5-1974 shall be followed.

ANSI N45.2.5 (Section 4.8)

Requirement:

Section 4.8, "In-process Tests on Concrete and Reinforcing Steel" contains Table B entitled, "Required In-process Tests." The following modifications to this table will be applied:

Interpretation:

REINFORCING STEEL

In-process testing or reinforcing steel will include the mechanical properties of yield strength, tensile strength and percent elongation on full size specimens for each bar size for each 50 tons or fraction thereof from each mill heat. Bend tests are performed during material qualification testing only, except as noted below for bar sizes #14 through #18.

Table A, "Required Qualification Tests" as applied to reinforcing steel will include bend tests as required by ASTM A615 and summarized below:

a) For bar sizes #3 through #11, one full size specimen from largest bar size rolled from each mill heat, unless material from one heat differs by three or more disignation numbers. When this occurs, one bend test shall be made from both the highest and lowest designation number of the deformed bars rolled.

b) For bar sizes #14 through #18, Supplementary Requirements S1 of ASTM A615 will be applied. One full size specimen for each bar size for each mill heat. If supplementary requirements are not followed for mill tests, they will be applied as in-process tests.

The above interpretation is consistent with Regulatory Guide 1.15, "Testing Reinforcing bars for Category I Concrete Structures," Revision 1, December 1972.

In-process test specimens may be selected at the rebar fabrication shop, prior to start of fabrication of the rebar from the heat or fraction thereof represented by the test specimen.

Acceptance criteria for any failed test (qualifications as well as in-process) may be the same as that for tensile tests specified in Subarticle CC-2331.2 of ASME Section III, Div. 2 Code (1975). This states that if a test specimen fails to meet the specified strength requirements,

two (2) additional specimens from the same heat and of the same bar size would be tested, and if either of the two additional specimens fails to meet the specified strength requirements, the material represented by the tests would be rejected for the specified use. Alternative use of rejected material under strict control may be subject to evaluation by the Project Engineer.

ANSI N45.2.5
(Section 4.9)

Requirement:

Section 4.9, Mechanical (Cadweld) Splice Testing states in paragraph 4.9.4 "Separate test cycles shall be established for mechanical splices in horizontal, vertical and diagonal bars, for each bar size and for each splicing crew..."

Interpretation:

The terms "horizontal, vertical and diagonal bars" will be interpreted to apply respectively to the following types of splice positions:

a. Hozizontal, including 10° to horizontal
b. Vertical, including 10° to vertical
c. 45° angle, including 10° to 80° angle

The words "splicing crew" will be interpreted to refer to all members on the project that are activitely engaged in preparing and assembling cadweld mechanical splices at the final spiice location. Separate test cycles will be established for each bar size and each splice position.

ANSI N45.2.12 (Paragraph 4.2.1)	An individual audit plan describing the audit to be performed shall be developed and documented by the auditing organization. This plan shall identify the audit scope, the requirements, the activities to be audited, organizations to be notified, the applicable documents, the schedule, and written procedures or checklists.	For those routine audits conducted during operations, a written procedure(s) covering each audit may be utilized. Procedure(s) will identify the audit scope, a requirement that individual checklists be utilized listing requirements which are to be audited and notification of the audited group.
ANSI N45.2.13 (Section 10.2.d)	The certificate should be attested to by a person who is responsible for this quality assurance function and whose function and position are described in the Purchaser's/ Supplier's quality assurance program.	The person attesting to a certificate shall be an authorized and responsible employee of the supplier, and shall be identified by the Supplier.

R.G. 1.64 (Section C.2)/ANSI N45.2.11	"While design verification by the designer's immediate supervisor is encouraged, it should not be construed that such verification constitutes the required independent design verification, ..."	Consistent with the requirement of ANSI N45.2.11, paragraph 6.1, design verification may be performed by the originator's supervisor, if the supervisor is the only individual in the organization competent to perform the verification.

TABLE 2

QUALITY ASSURANCE PROCEDURES MATRIX

AND TECH SPECS	ORGANIZATION	ORGANIZATION	QA PROGRAM	DESIGN CONTROL	PROCUREMENT DOCUMENT CONTROL	INSTR., PROC. & DRAWINGS	DOCUMENT CONTROL	CONT. OF PURCHASED ITEMS	IDENT. & CONTROL OF ITEMS	CONT. OF SPECIAL PROCESSES	INSPECTION	TEST CONTROL	CONT. OF MEASUR. & TEST EQUIP.	HANDLING, STORAGE & SHIPPING	INSP., TEST & OPER. STATUS	NONCONFORMING ITEMS	CORRECTIVE ACTION	QA RECORDS	AUDITS
PP-1000.01	PLANT ORGANIZATION AND RESPONSIBILITY	x																	
QAA-1	QA ORGANIZATION	x																	
QAA-2	QA TRAINING		x																
PP-1000.15	STATION TRAINING PROGRAM		x																
ESP-112	GENERAL TRAINING		x																
QAA-4	DISTRIBUTION OF CONTROLLED QA DOCUMENTS		x					x											
PP-1000.13	CONTROL OF STATION MODIFICATIONS			x															
ESP-201	DESIGN CHANGE PACKAGE CONTROL			x															
ESP-202	DESIGN PROCESS			x															
PP-1000.10	CONTROL OF PROCUREMENT				x														
PP-1000.12	CONTROL OF SITE CONTRACTORS				x			x											
ESP-102	PROCUREMENT CONTROL				x														
ESP-107	CONTRACTING				x														
PP-1000.04	PROCEDURAL PROGRAM REQUIREMENTS					x													
PP-1000.06	PROCEDURE CONTROL					x	x												
ESP-100	PROCEDURE DEVELOPMENT					x													
ESP-101	DRAWING CONTROL					x	x												
ESP-210	DRAWING CONTROL INTERFACE					x													
PP-1000.16	DOCUMENT CONTROL REQUIREMENTS						x												
ESP-203	DOCUMENT PREPARATION, CHANGE AND REVIEW						x												
PP-1033.01	RECEIPT INSPECTION							x											
QAA-8	VENDOR QUALIFICATION PROGRAM							x											
QAA-5	QA SURVEILLANCE							x											x
PP-1033.02	CONTROL OF MATERIAL								x					x					
PP-1000.37	CONTROL OF WELDING									x									
PP-1000.23	QUALITY CONTROL PROGRAM										x								
PP-1000.09	SURVEILLANCE TEST CONTROL											x							
PP-1000.34	SECTION XI PROGRAM											x							
PP-1000.14	CONTROL OF MEASURING AND TEST EQUIPMENT												x						
PP-1000.24	CONTROL OF MAINTENANCE														x				
PP-1000.27	HOLD AND CAUTION CARD CONTROL														x				
PP-1000.07	DEVIATIONS, FAILURES AND NONCONFORMANCES															x	x		
PP-1000.08	NRC REPORTING AND COMMUNICATION															x	x		
ESP-204	DESIGN DEFICIENCY/CORRECTIVE ACTION																x		
QAA-9	CORRECTIVE ACTION																x		
PP-1000.17	RECORDS MANAGEMENT																	x	
QAA-10	QA RECORDS																	x	
QAA-6	QA AUDITS		x																x
PP-1000.28	JUMPER AND LIFTED LEAD CONTROL															x			
PP-1000.05	PROCEDURE FORMAT AND CONTENT					x													
PP-1000.11	PURCHASE REQUISITION PREPARATION AND CONTROL				x														

TABLE 3

QUALITY PROGRAM POLICIES, PROCEDURES AND INSTRUCTION MANUALS LIST

1. Quality Assurance Program for Operations

The Quality Assurance Program for Operations establishes the policies and guidelines of the AP&L quality assurance program for its operating nuclear plants. This program is to be followed by all organizations involved in safety-related work applicable to operating nuclear plants.

2. Energy Supply Procedures Manual

The Energy Supply Department - Little Rock General Office (LRGO) employes a system of procedures designated as Energy Supply Department Procedures (ESP) in order to implement Program requirements for the control of design, engineering, nuclear fuel, licensing, training and procurement activities in support of the operating plant.

The ESP's and revision thereto are prepared by Energy Supply LRGO personnel, reviewed and approved by the Quality Assurance Manager, the Energy Supply (LRGO) Procedures Task Force and the responsible department head.

3. Quality Assurance Procedures Manual

The Quality Assurance Organization employes a system of procedures designated as Quality Assurance Procedures (QAP) in order to assure proper implementation of the program. The QAP's and revisions

thereto are prepared by the Quality Assurance Organization, reviewed and approved by the Quality Assurance Manager and approved by the Energy Supply Services Director and the Sr. Vice President, Energy Supply

4. Quality Assurance Administrative Procedures Manual

The Quality Assurance Organization also employes a system of procedures designated as Quality Assurance Administrative Procedures (QAA). These procedures provide technical and administrative instructions to the Quality Assurance staff to aid in implementing their responsibilities within the quality program.

5. Overall Plant Adminstrative Procedures Manual

The plant operation organization employes a system of procedures designated as Overall Plant Administrative Procedures. These procedures implement Quality Assurance Program requirements and control on site activities. Overall Plant Administrative Procedures and changes thereto are prepared by the plant staff, reviewed by the Plant Safety Committee and approved by the plant's General Manager. The procedures and revisions are also reviewed by the Manager, Nuclear Quality Control to assure that Quality Assurance Program commitments are met.

6. Departmental Plant Administrative Procedures

Each department (operations, maintenance, engineering and technical support, training, quality control, etc.) at the plant has developed procedures in support of the Overall Plant Administrative Procedures and this Quality Assurance Program. These procedures provide technical and administrative instructions to the various departments

to aid in implementing their responsibilities within the quality program. Each department head is responsible to perform a QA review of their procedures to assure conformance with the Quality Assurance Program. These procedures are reviewed by the Plant Safety Committee and approved by the Plant's General Manager.