ARKANSAS NUCLEAR ONE

QUALITY ASSURANCE MANUAL OPERATIONS

REVISION 18

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DIRECTOR, NUCLEAR SAFETY

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VICE PRESIDENT, OPERATIONS ANO

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ARKANSAS NUCLEAR ONE POLICY STATEMENT

QUALITY ASSURANCE PROGRAM FOR OPERATIONS

It is the policy at Arkansas Nuclear One, Units 1 & 2 (ANO) and its supporting organizations that the Quality Assurance Program for Operations (QA Program) meets the requirements of the Code of Federal Regulations, Title 10, Part 50, Appendix B, with respect to operation, maintenance, refueling, repair and modifications, and inservice inspection. The QA Program shall also meet the requirements of the ASME Boiler and Pressure Vessel Code with respect to items constructed, repaired or replaced to Code requirements.

The Entergy Operations President and Chief Executive Officer has the ultimate responsibility for the safe and reliable operation of the Entergy Operations Nuclear Sites.

Under the QA Program, the Vice President, Operations ANO is the final **onsite** management authority responsible for assuring that this policy statement and the QA Program are implemented within ANO. The Entergy Operations President and Chief Executive Officer; Executive Vice President and Chief Operating Officer; Entergy Operations Vice President, Operations Support; Entergy Operations Vice President, Engineering; and the Director, Human Resources; are responsible for the **offsite** procedural implementation of the QA Program within their assigned areas.

The General Manager, Plant Operations; Director, Engineering; Director, Nuclear Safety and Director, Support are responsible for the daily implementation of the QA Program's procedural requirements at ANO, in their respective areas.

The Director, Nuclear Safety is responsible for establishing the QA Program. Responsibility for approval of the QA Program shall be identified within this manual.

Quality personnel reporting to the Director, Nuclear Safety are responsible for auditing the QA Program as necessary and internal inspecting/monitoring activities required by the QA Program to assure compliance with its requirements. Disputes involving quality, arising from difference of opinions between Quality personnel and

other personnel, which cannot be settled interdepartmentally, shall be presented to the Vice President, Operations ANO for resolution. The Director, Nuclear Safety has direct access to the Entergy Operations President and Chief Executive Officer and the Entergy Operations Executive Vice President and Chief Operating Officer on matters concerning quality.

The Director, Nuclear Safety through the Supervisors, Quality Assurance is to provide for an annual review of the adequacy and overall effectiveness of the QA Program. Any defects in the implementation of either this policy or the QA 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 ANO. Each person involved in activities concerning ANO is to be responsible for assuring quality in his own work, and for compliance with the requirements of the QA Program. The QA Program policies, manuals, and procedures are mandatory requirements which must be implemented and enforced by all responsible organizations and individuals.

J. W. Yelverton

Vice President, Operations ANO

Date: 10/2/95

INTRODUCTION

This manual describes the Quality Assurance Program for Operations (QA Program) applied to Arkansas Nuclear One, Units 1 & 2 (ANO) and its supporting organizations. This manual is intended to serve as a standard reference for 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 the QA 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 QA 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 QA Program is designed to comply with the requirements of 10CFR50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, and also 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 QA 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 (9/75)
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 Structural 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 (6/76)
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 QA Program also complies with the following American National Standards 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	Qualification of Quality Assurance Program Audit Personnel for Nuclear Facilities
N18.1-1971	Selection and Training of Nuclear Power Plant Personnel
N18.7-1976	Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
N3.1-1981	Selection, Qualification, and Training of Personnel for Nuclear Power Plants

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

The following codes and standards are also utilized within the QA program as applicable to those activities to which they are referenced within various sections of this manual:

ASME Section III, Division 1 - 1989 Edition, No Addenda*
ASME Boiler and Pressure Vessel Code - Nuclear Power Plant Components

ASME Section XI - 1986 Edition, No Addenda (ANO Unit 2)**
- 1980 Edition, Winter 81 Addenda (ANO Unit 1)**
ASME Boiler and Pressure Vessel Code - Rules for Inservice Inspection of Nuclear Power Plant Components

ASNT SNT-TC-1A-1984 (Endorsed thru ASME Code Case N-445, dated 5/7/87)
Recommended Practice for Nondestructive Testing Personnel Qualification and Certification (This edition shall be used in lieu of earlier editions that might be referenced in other codes or standards to which ANO is committed).

AWS D1.1-1990
American Welding Society Structural Steel Welding Code

* In lieu of the original Construction Code, all or portions of later editions/addenda of the Code (through the 1989 edition) may be specified for repair or replacement (including system changes) of components or systems, within the rules of ASME Section XI. If later editions/addenda are selected, design, fabrication, and examination requirements shall be reconciled with the Owner's specification.

** Repair/replacement activities shall be to the 1986 Edition, No Addenda

Definitions of terms applicable to the QA 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 manual.

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.

Basic Component - A nuclear plant structure, system or component necessary to assure the nuclear safety criteria.

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, verifications 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 inservice inspection of ASME Boiler and Pressure 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; and (3) to be ordered on the basis of specifications set forth in manufacturer's published product description.

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.

Dedication - Designating a commercial-grade item for use as a basic component after receipt. This implies that all required inspections, examinations, testing, and documentation are completed to assure compliance with the Procurement Documents.

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.

F-List - A list of Non-Q fire protection equipment within the scope of the "Quality Program for Fire Protection" (Appendix B) - that is, those fire protection and detection systems, and those structures and components (such as fire doors, fire dampers, and penetration seals) which, as identified in the plant's fire hazards analysis report, are required to restrict the damage caused by a single exposure fire to safety-related equipment and equipment required to achieve and maintain safe plant shutdown to within those limits set forth in Section I of Appendix R to 10CFR50. This list is maintained current in the SIMS computer data base.

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-elated 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 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 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.

Nuclear Safety Criteria - (1) Integrity of the reactor coolant pressure boundary; (2) capability to shutdown the reactor and maintain it in a safe shutdown condition; and (3) capability to prevent or mitigate the consequences of accidents which could result in potential off-site exposures comparable to those referred to in 10CFR100.11.

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 monitoring activities necessary to sustain the power-generating capabilities of the plant after initial start-up.

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

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 equipment, 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 of safety-related structures, systems, and components - that is, those structures, systems and components that must remain functional during and following design basis events to ensure that the Nuclear Safety Criteria are satisfied.

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 knowledgeable 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 Suppliers List - A listing of vendors having quality assurance programs consistent with the requirements of applicable portions of 10CFR50, Appendix B. For vendors supplying ASME Code items, they shall also have a quality program consistent with the requirements of applicable portions of ASME Section III, Division 1, subsection NCA.

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.

S-List - A list of non-Q, non-F Components subject to one or more of the QA Program requirements of 10CFR50, Appendix B. This list is maintained current in the SIMS Computer Data Base.

Safety-Related (Q) - Safety-related structures, systems and components are those that must remain functional during and following design basis events to ensure that the Nuclear Safety Criteria are satisfied.

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 perform 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 Director, Nuclear Safety when used in this manual, assign the responsibility of performing the requirement to the noted individuals or their appointed designees.

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 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 Nuclear Organizational structure and responsibilities for establishing and executing the QA Program for Arkansas Nuclear One, Units 1 & 2 (ANO) in compliance with 10CFR50, Appendix B and applicable licensing commitments identified in the Introduction. It also includes a description of the interfaces with other organizations which may be delegated the work of establishing and executing portions of the QA Program. The Arkansas Power & Light Company's (AP&L) and Entergy Operations, Inc.'s (Entergy Operations) Corporate Organizations relevant to the operation of ANO are shown in Figure 1.

1.2 GENERAL RESPONSIBILITIES

The on-site responsibility for ANO, including quality assurance, lies with the Vice President, Operations ANO. He provides management assessment of the QA Program through review of reports generated by the Quality Organization and reports of NRC activities.

1.3 NUCLEAR ORGANIZATION

The Nuclear Organization, headed by the Vice President, Operations ANO is responsible for activities related to the operation of ANO. These activities include as a minimum: design, operation, maintenance, inservice inspection and test, modification and those additional activities discussed in Sections 2.0 through 18.0 of this manual. The Vice President, Operations ANO, who reports to the Entergy Operations Executive Vice President and Chief Operating Officer is responsible for the formulation, licensing, implementation and discharge of operating policies and procedures relative to nuclear plant operations, nuclear quality and training. The Nuclear Organization is shown in Figures 1 through 8. The Vice President, Operation ANO's duties include the following:

(1) Providing technical direction and administrative guidance to the:

a. General Manager, Plant Operations
b. Director, Nuclear Safety
c. Director, Support
d. Manager, Training & Emergency Planning
e. Manager, Modifications

(2) Providing priority of engineering tasks to the Director, Engineering

(3) Ensuring conformance to the QA Program by instituting the necessary procedures and instructions within the Nuclear Organization

(4) Providing for review and approval of design and engineering performed for ANO

(5) Providing for review and approval of procurement documents for equipment, material and services

(6) Providing for liaison between ANO and applicable regulatory agencies

(7) Providing and maintaining a qualified and suitable staff to carry out required departmental functions

(8) Assuming overall responsibility for the fire protection, emergency planning and radiation protection programs implemented at ANO

(9) Implementing the Entergy Operations, Inc. Welding Program

1.3.1 General Manager, Plant Operations

The General Manager, Plant Operations reports to the Vice President, Operations ANO and has direct responsibility for operating ANO in a safe, reliable and efficient manner. He is responsible for operating ANO in accordance with the provisions of the operating licenses. The Operations Department's organization is shown in Figure 2. The General Manager, Plant Operations has the authority to shut down either unit if required. The General Manager, Plant Operations provides technical direction and administrative guidance to the:

(1) Plant Manager, Unit 1
(2) Plant Manager, Unit 2
(3) Manager, Radiation Protection/Chemistry
(4) Manager, Standards

1.3.1.1 Plant Managers, Unit 1 & 2

The Plant Managers, Unit 1 & 2 report to the General Manager, Plant Operations and are responsible for the actual operation of their assigned nuclear unit, the maintenance of plant equipment and facilities and the planning/ scheduling of plant work activities. The Units' Operations organizations are shown in Figures 3 and 4. The Plant Managers, Unit-1 & 2 provide technical direction and administrative guidance to:

(1) Manager, Operations, Unit-1 & 2
(2) Manager, Maintenance, Unit-1 & 2
(3) Project Manager, Outages, Unit-1 & 2
(4) Manager, System Engineering, Unit-1 & 2

1.3.1.1.1

The Managers, Operations, Unit-1 & 2 are responsible for directing the actual day-to-day operations of their assigned unit. They supervise each unit's operating staff and interface with the respective Managers, Maintenance, Unit-1 & 2 to accomplish operation-related maintenance activities. They are responsible for coordination of the daily review of operating surveillance tests and coordination of operation-related maintenance activities. The Managers, Operations, Unit-1 & 2 are also responsible for supervision of core refueling, which includes advance planning for the outage, plant preparation, equipment checkout and the refueling operations. The Managers, Operations each hold an NRC Senior Reactor Operator License. The Managers, Operations, Unit-1 & 2 provide technical direction and administrative guidance to the Superintendents, Shift Operations of their assigned unit.

1.3.1.1.1.1

The Superintendents, Shift Operations report to the applicable Manager, Operations and are responsible for the actual operation of the unit and for the activities of the Operators during their assigned shifts. The Superintendent, Shift Operations is cognizant of operation activities being performed while on duty. The Superintendent, Shift Operations on duty has the authority to shut down the unit if, in his judgment, conditions warrant such action. The Superintendents, Shift Operations each hold an active Senior Reactor Operator License. The Superintendents, Shift Operations provide technical direction and administrative guidance to the:

(1) Control Room Supervisors (Holders of active Senior Reactor Operator License)
(2) Shift Engineers
(3) Control Board Operators (Holders of active Reactor Operator License)
(4) Waste Control Operators
(5) Auxiliary Operators

1.3.1.1.2

The Managers, Maintenance, Unit-1 & 2 report to the applicable Plant Manager and are responsible for the maintenance of plant equipment and facilities as defined by plant maintenance program implementing procedures and ensuring that maintenance of equipment is performed in compliance with applicable standards, codes, specifications and procedures. The Manager, Unit 2 Maintenance has responsibility for activities common to Unit 1 and Unit 2 administered by the Superintendent, Central Support Maintenance. The Managers, Maintenance, Unit-1 & 2 are also to coordinate operation-related maintenance activities with the applicable Managers, Operations, Unit-1 & 2 and are responsible to make repairs on any structure, system or component under their control. The Managers, Maintenance, ANO-1 & 2 provide technical direction and administrative guidance to the Maintenance Technical Staff.

1.3.1.1.3

The Project Managers, Outages Unit-1 & 2 report to the applicable Plant Manager and are responsible for management and direction of activities to prepare for and control scheduled and non-scheduled unit outages. The responsibilities include detailed planning, preparation and scheduling of refueling outages and other scheduled or forced outages requiring cold shutdown, and directing activities during outages.

1.3.1.1.4

The Managers, System Engineering, Unit-1 & 2, report to the applicable Plant Manager and are responsible for reactor, performance, and system engineering activities required for the safe and efficient production of electricity. These activities include resolving plant related engineering issues that do not alter the design bases of the respective plants.

1.3.1.1.5

The planning and scheduling of plant work activities are executed under the ANO Plant Manager for Unit 1 & 2, respectively. The unit outage manager reports to the respective unit plant manager and is responsible for scheduling outage and non-outage work activities for that unit, supervising the scheduling staff, and interfacing with the respective unit maintenance manager, who has responsibility for planning and execution of plant work activities.

1.3.1.1.6

The Manager, Standards reports to the General Manager, Plant Operations and provides planning, direction, control and overall supervision to the Standards Department. The Manager, Standards also provides planning, direction, control and overall supervision to the Fire Prevention, and Safety Sections, in operating and maintaining ANO. Responsibilities involve the supervision of personnel and daily work activities involving the safe, efficient and reliable operation of ANO. Responsibilities involve the development and administration of programs which support the capability of ANO to meet or exceed industry standards and regulatory requirements. Responsibilities also involve the Chairpersonship of the Plant Safety Committee which reviews the various aspects of operation, maintenance, modification and support to assure the safety of ANO.

1.3.1.2 Manager, Radiation Protection/Chemistry

The Manager, Radiation Protection/Chemistry reports to the General Manager, Plant Operations and is responsible for implementing the Nuclear Organization chemistry, radiation protection and health physics policies, programs, and procedures. The Manager, Radiation Protection/Chemistry is directly responsible for implementing controls which will minimize personnel radiation exposure (ALARA), minimize personnel contamination, minimize radwaste volume, and establish uniform procedures and methods for contamination control and radiation protection. This position is also responsible for implementing contracts, as required to maintain chemistry and radiochemistry parameters in specification and establish chemistry and radiochemistry controls conducive to maximizing plant life.

1.3.2 Director, Nuclear Safety

1.3.2.1

The Director, Nuclear Safety reports to the Vice President, Operations ANO and has overall responsibility for the management and oversight of NRC inspection activities, industry and in-house operation experiences, safety assessments, and interactions with the NRC regional and Washington, DC offices. The Licensing Department's organization is shown on Figure 5.

The Director, Nuclear Safety provides technical direction and administrative guidance to the:

(1) Supervisor, Licensing - Region

(2) Supervisor, Licensing - NRR

(3) Supervisor, Industry Events Analysis

(4) Supervisor, In-House Events Analysis and Assessment

(5) Coordinator, Quality

(6) Supervisor(s), Quality Assurance

(7) Supervisor, Quality Control

(8) Supervisor, NDE

1.3.2.2 Supervisor, Licensing - Region

The Supervisor, Licensing - Region reports to the Director, Nuclear Safety and is responsible for the following duties:

(1) Interfacing with on-site and regional regulatory agencies and the Director, Nuclear Safety pertaining to Licensing and regulatory matters

(2) Providing evaluations and recommendations in meeting regulatory commitments

(3) Establishing and maintaining a system for monitoring Licensee Event Reports and NRC Inspection Reports

(4) Performing SAR updates

(5) Providing technical direction and administrative guidance to the Nuclear Safety and Licensing Specialists

1.3.2.3 Supervisor, Licensing-NRR

The Supervisor, Licensing-NRR reports to the Director, Nuclear Safety and is responsible for the following duties:

(1) Interfacing with NRC, Washington, DC offices and the Director, Nuclear Safety pertaining to Licensing and regulatory matters

(2) Establishing and maintaining programs for the maintenance of Licensing Base Documents (Operating License, SAR, Technical Specification, Emergency Plan, QA Manual Operations) with the assistance of other department's expertise

(3) Responding to Generic Letters and Bulletins

(4) Reviewing NRC Correspondence (incoming and outgoing) and related industry documents to remain cognizant of activities that may affect ANO

(5) Providing technical direction and administrative guidance to the Nuclear Safety and Licensing Specialists

1.3.2.4 Supervisor, Industry Events Analysis

The Supervisor, Industry Events Analysis reports to the Director, Nuclear Safety and observes the nuclear industry for indicators and lessons learned which can be of use to correct existing ANO problems or to avoid problems others have experienced. The section assesses applicability of current industry issues to ANO and develops proposed action plans for consideration and implementation by line management. Inputs to this function are SOERs, SERs, O&MRs, SEE-IN documents, NRC Information Notices and vendor notifications (including 10CFR21 reports). Additionally, this section is the interface for reporting to Nuclear Network concerning events that occur at ANO.

1.3.2.5 Supervisor, In-House Events Analysis and Assessment

The Supervisor, In-House Events Analysis and Assessment reports to the Director, Nuclear Safety and has the responsibility for administration of ANO's primary corrective action program, the Condition Reporting System. This responsibility includes:

(1) Reviewing identified conditions adverse to quality in order to recommend appropriate dispositions to plant management
(2) Assisting in the performance of root cause determinations to ensure their adequacy
(3) Reviewing the actions taken to resolve conditions and taking action to ensure resolution of the condition
(4) Maintaining a tracking system and reporting mechanism for identified conditions

Additionally, the Supervisor, In-House Events Analysis and Assessment is responsible for providing assessments of plant and industry operating experiences, oversight of plant experiences, oversight of selected key station programs, and assisting station management in monitoring and evaluating ANO performance to ensure that effective management programs are developed, implemented and maintained to achieve the goals and Standards of Excellence as prescribed by senior management. This responsibility is accomplished through a variety of methods including: evaluating plant programs or functional areas, independent investigations of selected plant events or conditions, and a periodic assessment of overall plant activities. The In-House Events Analysis and Assessment section provides independent, objective assessments (outside the traditional auditing role) of the overall effectiveness of nuclear programs to help assure that performance expectations are being met. The inputs to this process include the assessment of prior and current ANO performance contrasted against, comparable industry performance, the Standards of Excellence identified by INPO, and the evaluation of industry strengths and good practices for applicability to ANO, and other applicable nuclear industry requirements. The Supervisor, In-House Events Analysis and Assessment manages the plant operation experience review program in accordance with INPO guidelines.

The Director, Nuclear Safety, additionally has overall responsibility for the Quality Organization which performs reviews, analysis, surveillance, inspection, nondestructive examination and audit functions during the operational phase of ANO. The Quality Organization is also independent of plant operations and has sufficient independence from cost and schedule when opposed to safety considerations. The Director, Nuclear Safety has direct access to all management levels, which assures his staff the ability to: identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions. The Quality Department's Organization is shown on Figure 7.

Duties and responsibilities of the Director, Nuclear Safety include the following:

(1) Technical direction, administrative guidance and supervision to the Coordinator, Quality; Supervisors, Quality Assurance; Supervisors, Quality Control; and Supervisor NDE

(2) Approval of the QA Manual Operations and revisions thereto

(3) Approval of QA/QC and NDE procedures and revisions thereto as established within Quality procedures

1.3.2.6 Coordinator, Quality

The Coordinator, Quality reports to the Director, Nuclear Safety. Duties and responsibilities of the Coordinator, Quality include assisting the Director, Nuclear Safety with his duties and responsibilities.

1.3.2.7 Supervisors, Quality Assurance

The Supervisors, Quality Assurance report to the Director, Nuclear Safety. Duties and responsibilities of the Supervisors, Quality Assurance include the following:

(1) Developing the QA Program requirements for operation, maintenance, and modification activities related to safety-related (Q-listed) systems, structures and components

(2) Auditing of the quality activities as described in Section 18.0 of this manual

(3) Providing to the Director, Nuclear Safety, on an annual basis, the results of a review of the QA Program to determine the effectiveness and proper implementation of the QA Program

(4) Authority to stop work where conditions exist that prohibit effective quality programs, or if faulty materials, incorrect workmanship or procedures are detected

(5) Ensuring approval and control of quality assurance programs for outside organizations participating in the QA Program

(6) Providing and maintaining a qualified and suitably trained staff to carry out required staff functions

(7) Formulating programs for maintaining the professional competence of personnel within the Quality Assurance section and providing assistance in Quality Assurance training and indoctrination programs for management, engineering and plant personnel whose activities affect quality

(8) Providing technical direction and guidance to the Quality Assurance staff

(9) Inspecting, auditing or reviewing practices, records, files, instructions, directions or documents concerned with all areas affecting quality

(10) Scheduling and coordinating audits or surveillance efforts in the areas assigned, documenting findings and reporting results to the Director, Nuclear Safety and management of the audited area

1.3.2.8 Supervisors, Quality Control/ NDE

The Supervisors, Quality Control/ NDE report to the Director, Nuclear Safety and are responsible for verifying the implementation of the Quality Control program at ANO. The duties and responsibilities of the Supervisors include the following:

(1) Interface with plant staff in developing quality control requirements and inspection points for operation, maintenance and modification activities related to safety-related (Q-listed) and fire protection-related (F-listed) systems, structures and components

(2) Interface with the Supervisors, Quality Assurance or their representatives for technical assistance in resolving significant conditions adverse to quality

(3) Authority to stop unsatisfactory work and 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 SAR requirements

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

(5) Providing technical direction and guidance to their staffs

(6) Providing and maintaining a qualified and suitably trained staff to carry out required staff functions and formulate programs for maintaining the professional competence of personnel within the Quality Control/NDE sections

1.3.3 Director, Support

The Director, Support reports to the Vice President, Operations ANO and is responsible for managing the nuclear five-year business plan, including establishing the budget and managing the goals and objectives program for the Nuclear Organization. Management of payroll and accounting is also provided by the Director, Support. He also provides planning, direction, control and overall supervision to the Fitness for Duty Department and Plant Security Department. Additionally, the control and maintenance of ANO records are a responsibility of the Director, Support. The Nuclear Support Department's organization is shown in Figure 6. The Director, Support is responsible for providing direction and general supervision to the following technical and administrative individuals in support of the Vice President, Operations ANO:

(1) Manager, Site Business Services
(2) Manager, Support
(3) Medical Review Officer/Physician
(4) Superintendent, Administrative Services
(5) Superintendent, Plant Security
(6) Coordinators, Special Projects

1.3.3.1 Superintendent, Plant Security

The Superintendent, Plant Security reports to the Director, Support and is responsible for plant security including coordination of efforts of the security force and managing the operation of the security system.

1.3.4 Manager, Materials, Purchasing and Contracts - ANO

The Manager, Materials, Purchasing and Contracts - ANO reports to the Director, Materials, Purchasing and Contracts and has direct responsibility for procurement, receipt, storage and issue of materials, parts and components to be used in Plant maintenance and modification activities. The Materials Organization is shown in Figure 6. The Manager, Materials, Purchasing and Contracts establishes work priorities for Procurement Engineering. The Manager, Materials, Purchasing and Contracts provides technical direction and administrative guidance to the following:

1) Superintendent, Stores Operations
2) Superintendent, Inventory Control
3) Supervisor, Purchasing

1.3.5 Manager, Modifications

The Manager, Modifications reports to the Vice President, Operations ANO and provides direction, control and overall supervision to the Modifications Department in directing and overseeing the implementation of plant modifications and the performance of related support activities at ANO. Responsibilities include: directing the activities of the ANO Maintenance and Modifications Contractor and other contractors performing modification work at ANO; monitoring the effectiveness of the ANO Plant Modifications Program, and coordinating the resolution of related problems and the implementation of needed program improvements; and providing engineering services to support the review, preplanning, installation, testing, inspection, and closeout of Modification Packages. The Manager, Modifications provides technical direction and administrative guidance to the:

(1) Superintendent, Modifications
(2) Supervisor, Cost Estimating
(3) Supervisor, Startup
(4) Supervisor, Modifications Central Support

1.3.6 Manager, Training and Emergency Planning

The Manager, Training and Emergency Planning reports to the Vice President, Operations ANO and is responsible for the training and retraining of plant personnel and general office personnel as established by approved procedures. The Manager, Training and Emergency Planning is also responsible for the implementation and maintenance of the ANO Emergency Plan. The Manager, Training and Emergency Planning directs the activities of the ANO training staff and provides technical direction and administrative guidance to the:

(1) Supervisor, Operations Training
(2) Supervisor, Simulator Training
(3) Supervisor, Simulator Support
(4) Supervisor, Emergency Planning
(5) Supervisor, Maintenance Training
(6) Supervisor, Technical Training
(7) Coordinator, INPO Accreditation
(8) Technical Assistant to Manager, Training & Emergency Planning

1.3.7 Director, Design Engineering

The Director, Design Engineering reports **offsite** to the Vice President, Engineering. The responsibilities of this position include the development and maintenance of engineering programs, policies and procedures; providing engineering services in support of design, evaluation, analysis, installation, testing, inspection, and operation of Arkansas Nuclear One; effective design modifications to correct deficiencies in plant systems and equipment, improve plant availability, efficiency, safety or productivity and assure thorough and complete design documentation to support effective configuration management for Arkansas Nuclear One.

The Director, Design Engineering provides technical direction and administrative guidance to others who direct activities in the areas of plant modifications, operability assessments, maintenance of the design bases of Arkansas Nuclear One, nuclear safety analyses, environmental qualifications, technical assistance in the resolution of Operations and Maintenance concerns, engineering standards, technical manuals, fire protection, engineering databases, on-site engineering programs, inservice inspection, inservice testing, and on-site welding.

1.3.8 Independent Review Organizations

In addition to the responsibilities of key individuals within the Nuclear Organization who are involved with the overall quality program, the following committees have been established as management tools to independently review activities occurring during the operational phase of ANO.

1.3.8.1 Safety Review Committee (SRC)

1.3.8.1.1

The Safety Review Committee shall function to provide independent review and audit of designated activities in the areas of:

a. Nuclear power plant operations
b. Nuclear engineering
c. Chemistry and radiochemistry
d. Metallurgy

e. Instrumentation and control

f. Radiological safety

g. Mechanical and electrical engineering

h. Quality assurance practices

1.3.8.1.2 Composition

1.3.8.1.2.1

The SRC shall be composed of a chairman and eight to twelve members whose collective qualifications satisfy the requirements of paragraph 2.6.6 of this manual.

1.3.8.1.2.2

The Vice President, Operations ANO shall designate, in writing, the Chairman and all SRC members.

1.3.8.1.2.3

The Chairman shall designate, in writing, the alternate Chairman in the absence of the SRC Chairman.

1.3.8.1.2.4

All alternate members shall be appointed in writing by the SRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in SRC activities at any one time.

1.3.8.1.2.5

Consultants shall be utilized as determined by the SRC Chairman to provide expert advice to the SRC.

1.3.8.1.3 Review Function

1.3.8.1.3.1

The SRC shall meet at least once per calendar quarter during the initial year of unit operation following fuel loading and at least once per six months thereafter. The minimum quorum of the SRC necessary for the performance of the SRC review and audit functions of these technical specifications shall consist of the Chairman or his designated alternate and at least a majority of the SRC members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the unit.

1.3.8.1.3.2

The SRC shall report to and advise the Vice President, Operations ANO on those areas of responsibility specified in paragraph 1.3.8.1.3.3 below.

1.3.8.1.3.3

The SRC shall review:

a. The safety evaluations for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of 10 CFR 50.59 to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in 10 CFR 50.59.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in 10 CFR 50.59.

d. Proposed changes to Technical Specifications or Operating Licenses.

e. Violations of applicable statutes, codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.

g. All REPORTABLE EVENTS pursuant to Technical Specification 6.6.2 and 6.6.1 (for Unit 1 and Unit 2 respectively).

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.

i. Reports and meetings minutes of the Plant Safety Committee.

j. Proposed changes to the ODCM and PCP.

k. Audits of facility activities as specified in paragraph 18.3.2 of this manual.

1.3.8.1.4

Records of SRC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each SRC meeting shall be prepared, approved and forwarded to the Vice President, Operations ANO within 14 days following each meeting.

b. Reports of reviews encompassed by paragraph 1.3.8.1.3.3 above shall be prepared, approved and forwarded to the Vice President, Operations ANO within 14 days following completion of the review.

c. Audit reports encompassed by paragraph 18.3.2 of this manual shall be forwarded to the Vice President, Operations ANO and to the management positions responsible for the areas audited within 30 days after completion of the audit.

1.3.8.2 Plant Safety Committee (PSC)

1.3.8.2.1

The Plant Safety Committee for each operating unit shall function to advise the General Manager, Plant Operations and applicable Plant Manager on all matters related to nuclear safety.

1.3.8.2.2 Composition

1.3.8.2.2.1

The Plant Safety Committee for each operating unit shall be composed of eight members of ANO onsite management organization whose selection is described in internal procedures and whose qualifications satisfy the requirements of paragraph 2.6.6 of this manual.

1.3.8.2.2.2

The General Manager, Plant Operations shall designate in writing a PSC Chairman and at least one Alternate Chairman.

1.3.8.2.2.3

All alternate members shall be appointed in writing by the PSC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in PSC activities at any one time.

1.3.8.2.2.4

For Unit 2 PSC, if Core Protection Calculator (CPC) Software is being reviewed a nuclear software expert shall be present as a voting member. If one of the members of the Plant Safety Committee meets the qualification requirements for this position, the requirement to have this member is satisfied. This membership may be filled by two appropriately qualified individuals who shall ballot with a single combined vote. Generic qualifications for this membership shall be as follows:

One Individual

The Nuclear Software Expert shall have as a minimum a Bachelor's degree in Science or Engineering, Nuclear preferred (in accordance with ANSI N18.1). In addition, he shall have a minimum of four years of technical experience, of which a minimum of two years shall be in Nuclear Engineering and a minimum of two years shall be in Software Engineering. (Software Engineering is that branch of science and technology which deals with the design and use of software. Software Engineering is a discipline directed to the production and modification of computer programs that are correct, efficient, flexible, maintainable, and understandable, in reasonable time spans, and at reasonable costs.) The two years of technical experience in Software Engineering may be general software experience not necessarily related to the software of the Core Protection Calculator System. One of these two years of experience shall be with certified computer programs.

Two Individuals

One of the individuals shall meet the requirements of the Nuclear Engineering portion of the above. The second individual shall have a Bachelor of Science degree (digital computer specialty) and meet the Software Engineering requirements of the above.

The membership (the Nuclear Software Expert or the Digital Computer Specialist) shall be knowledgeable of the Core Protection Calculator System with regard to:

a. The software modules, their interactions with each other and with the data base.

b. The relationship between operator's module inputs and the trip variables.

c. The relationship between sensor input signals and the trip variable.

d. The design basis of the Core Protection Calculator System.

e. The approved software change procedure and documentation requirements of a software change.

f. The security of the computer memory and access procedures to the memory.

1.3.8.2.3 Review Function

1.3.8.2.3.1

The PSC for each operating unit shall meet at least once per calendar month and as convened by the PSC Chairman or his designated alternate. The minimum quorum of the PSC necessary for the performance of the PSC responsibilities designated in this manual shall consist of the Chairman or his designated alternate and four members including alternates. The PSC Chairman shall ensure that adequate expertise is present during meetings to evaluate material before the PSC.

1.3.8.2.3.2

The Plant Safety Committee shall be responsible for:

a. Review of 1) all station administrative procedures recommended in Appendix A of Reg Guide 1.33 (November, 1972 for Unit 1 and Revision 2, February, 1978 for Unit 2) and changes in intent thereto, 2) changes to the Emergency Operating Procedures for each operating unit required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter 82-33, 3) changes to Core Protection Calculator (CPC) Software (for Unit 2), and 4) any other proposed procedures or changes thereto as determined by the General Manager, Plant Operations or applicable Plant Manager.

b. Review of all proposed tests and experiments that affect nuclear safety.

c. Review of all proposed changes to Appendix "A" Technical Specifications for each operating unit.

d. Review of all proposed changes or modifications to unit systems or equipment that affect nuclear safety.

e. Investigation of all violations of the Technical Specifications, including the preparation and forwarding of reports covering evaluation and recommendation to prevent recurrence to the applicable Plant Manager, General Manager, Plant Operations and the Chairman of the Safety Review Committee.

f. Review of all REPORTABLE EVENTS.

g. Review of facility operations to detect potential nuclear safety hazards.

h. Performance of special reviews, investigations or analyses, and reports thereon as requested by a Plant Manager, General Manager, Plant Operations or the Safety Review Committee.

i. Review of the Plant Security Plan and submittal of recommended changes to the General Manager, Plant Operations and Safety Review Committee.

j. Review of the Emergency Plan and submittal of recommended changes to the General Manager, Plant Operations and Safety Review Committee.

k. Review of changes to the Offsite Dose Calculation Manual and Process Control Program.

l. Review of changes to the Fire Protection Program and submittal of recommended changes to the General Manager, Plant Operations and Safety Review Committee.

m. Review of proposed procedures and changes to procedures which involve an unreviewed safety question as defined in 10CFR50.59.

n. Review and documentation of judgment concerning extended operation (longer than 48 hours) with a PPS trip channel in bypass. Review shall determine whether to leave the trip channel in bypass, place the channel in trip, and/or repair the defective channel.

1.3.8.2.3.3

The Plant Safety Committee shall:

a. Recommend in writing their approval or disapproval of items considered under paragraph 1.3.8.2.3.2(a) through (d) above.

b. Render determinations in writing with regard to whether or not each item considered under paragraph 1.3.8.2.3.2(a) through (e) above constitutes an unreviewed safety question.

c. Provide written notification within 24 hours to the Vice President, Operations ANO and the Safety Review Committee of disagreement between the PSC and a Plant Manager or the General Manager, Plant Operations; however, the General Manager, Plant Operations shall have responsibility for resolution of such disagreements pursuant to Technical Specification 6.1.1 for each operating unit.

1.3.8.2.4

The Plant Safety Committee shall maintain written minutes of each PSC meeting that, at a minimum, document the results of all PSC activities performed under paragraphs 1.3.8.2.3.2 and 1.3.8.2.3.3 above. Copies shall be provided to the applicable Plant Manager, General Manager, Plant Operations and Chairman of the Safety Review Committee.

1.4 ENTERGY OPERATIONS OFFSITE ORGANIZATION

1.4.1 President & Chief Executive Officer

The President & Chief Executive Officer has the ultimate responsibility for the safe and reliable operation of the Entergy Operations' nuclear sites. He provides guidance with regard to quality assurance and internal audit policy, coordinates foreign visits, interfaces with World Association of Nuclear Operations, interfaces with the state public service commissions, and oversees strategic planning.

He delegates authority and responsibility for the operation and support of ANO through the Executive Vice President & Chief Operating Officer; the Director, Business Services; the Director, Nuclear Fuels; and the Director, Total Quality.

1.4.2 Executive Vice President & Chief Operating Officer

The Executive Vice President & Chief Operating Officer has the responsibility to oversee all operations and engineering functions of Entergy Operations. He delegates authority and responsibility for the operation and support of ANO through the Vice President, Operations ANO; the Vice President, Engineering; and the Vice President, Operations Support. It is the responsibility of the Executive Vice President & Chief Operating Officer to assure that all safety-related activities under his direction are performed following the guidelines of the Echelon Quality Assurance Program and the ANO QAMO.

The organization is shown on Figure 1.

1.4.2.1 Vice President, Operations Support

The Vice President, Operations Support reports directly to the executive Vice President and Chief Operating Officer and is responsible for administering corporate support functions in the areas of radiological protection, radioactive waste management, chemistry, environmental services, operations, maintenance, outage management, security, emergency planning, technology transfer, licensing; plant assessments, information technology, material requirements and materials, purchasing and contracts. It is the responsibility of the Vice President, Operations, Support to assure that these functions performed for ANO are performed in accordance with the requirements of the ANO Quality Assurance program.

1.4.2.1.1 Director, Materials, Purchasing & Contracts

The Director, Materials, Purchasing and Contracts reports to the Vice President, Operations Support and is responsible for the oversight and development of purchasing policies and procedures consistent across Entergy's nuclear sites and Echelon and providing the direction and administration necessary relative to quality responsibilities as they relate to the ANO Quality Assurance Program.

1.4.2.1.1.1 Manager, Material Requirements

The Manager, Material Requirements reports to the Director, Materials, Purchasing and Contracts and is responsible for:

1. Evaluating quality assurance programs and activities of ANO suppliers and contractors of quality-related items, spare parts, and services through reviews, surveillances, and audits;

2. Conducting pre-award evaluations for quality requirements of vendors, suppliers, and contractors, where applicable.

3. Maintaining a Qualified Suppliers List (QSL) for use in procuring safety-related items, spare parts, and services; and

4. Performing design review and fuel fabrication audits as necessary to ensure that nuclear fuel procured for use by Entergy Operation is designed and fabricated in accordance with applicable codes, standards, and regulations.

The authority for the accomplishment of the above activities is delegated to the incumbent's staff.

1.4.2.2 Director, Nuclear Fuels

The Director, Nuclear Fuels reports to the Executive Vice President and Chief Operating Officer and is responsible for the procurement of nuclear fuel for ANO, the provision of nuclear fuel cash flow and cost projections for use in company business plan and fuel financing activities, the maintenance of the Official Entergy Operations Nuclear Operating Schedule, and the oversight of nuclear fuel accounting activities.

1.4.2.3 Vice President, Engineering

The Vice President, Engineering reports to the Executive Vice President and Chief Operating Officer and is responsible for providing nuclear engineering services for ANO, as requested. The incumbent is responsible for Design Engineering, fuel design and core design. In addition, the incumbent has overall administrative, programmatic and operational control of the Entergy Operations, Inc. Welding Program.

1.4.3 Vice President, Human Resources & Administration

The Vice President Human Resources & Administration reports to the Executive Vice President and Chief Operating Officer and is responsible for the administration of functions associated with Corporate Services and Human Resources. He delegates authority and responsibility for the accomplishment of the above activities through the Director, Human Resources. It is the responsibility of the Vice President, Human Resources & Administration to assure that the safety-related activities under his direction are performed following the guidelines of the Echelon Quality Assurance Program and the ANO QAMO.

1.4.3.1 Director, Human Resources

The Director, Human Resources reports to the Vice President, Human Resources and Administration and is responsible for functions associated with programs dealing with employees compensation, benefits, employee and labor relations, affirmative action, recruitment, industrial safety, succession planning and human resource development. He delegates authority and responsibility for employee relations activities at ANO through the Manager, Human Resources-ANO.

1.5 ORGANIZATIONAL INTERFACES AND RESPONSIBILITIES

AP&L and Entergy Operations are joint licensees under the facility operating license condition, each responsible for specific areas and jointly responsible for regulatory compliance and response. AP&L is licensed to possess the facility and Entergy Operations is licensed to possess, use and operate the facility.

Each supplier of equipment, material or services and each maintenance or modification contractor is responsible for administering the applicable quality assurance/quality control functions as required by ANO. The Quality Organization is responsible for assuring by surveillance, inspection, audit or review of objective evidence that onsite functions are accomplished for systems, structures and services that affect the safety and integrity of the plant.

2.0 QUALITY ASSURANCE PROGRAM

2.1 SCOPE

This QA Program is to assure that ANO is 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 quality procedures cross-referenced to each criterion of 10CFR50, Appendix B, is included in Table 2 to this manual.

2.2 GENERAL

2.2.1

This QA 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 and components are identified in the summary level and component level Q-lists for each nuclear unit. The Summary Level Q-Lists (SLQL) are located in the SARs and information for the Component Level Q-lists (CLQL) is maintained current in the Station Information Management System (SIMS) for each nuclear unit. When structures, systems and components as a whole are on the SLQL or CLQL, 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: weld rods, boric acid, and diesel fuel.

2.2.2

Expendable and/or consumable items where quality is necessary for the performance of Q-listed structures, systems and components are identified and controlled in accordance with Technical Specifications and/or procedures.

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 ensured by applicable provisions/tests required by the Technical Specification for each operating nuclear unit.

(2) Welding Rod - Service quality is ensured by procurement from an evaluated source, requiring material test results when specified by the ASME Code or applicable design document, and controlling the rod on-site prior to use to prevent degradation.

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

2.2.3

The quality program for transport packages containing radioactive materials is addressed in Appendix A of this manual and implemented through appropriate approved procedures. The effectiveness of this quality program is verified through scheduled audits conducted by the Quality Organization under the cognizance of the SRC.

2.2.4

The quality program for fire protection is addressed in Appendix B of this manual and in the applicable section of the SAR for each operating nuclear unit and implemented through appropriate approved procedures. The effectiveness of the fire protection program is verified through scheduled audits conducted by the Quality Organization under the cognizance of the SRC.

2.2.5

The SLQL (as part of the SAR) is under the control of the Director, Nuclear Safety. The Licensing Department ensures that reviews, approvals, and changes thereto are performed in accordance with approved procedures. Changes to the SLQL require review/approval by the applicable Manager, Engineering; and Director, Nuclear Safety. ANO Document Control shall make distributions to the SAR in accordance with approved procedures.

2.2.6

The CLQL is maintained on a computer data base (SIMS) and is controlled in accordance with approved procedures. Engineering is responsible for the technical adequacy of the CLQL and the administrative controls of the CLQL within SIMS. Evaluations, reviews and approvals to changes to the CLQL are performed in accordance with applicable procedures.

2.2.7

The Component Level F-list (CLFL) is maintained on the SIMS component data base by Engineering. Components classified as "F" on this list fall under the requirements of Appendix B of this manual. The controls for this list are similar to the controls utilized for the Q-list.

2.2.8

Components that are not Q-listed or F-listed and which are subject to ASME code requirements or similar design standards, regulatory requirements or licensing commitments or other ANO commitments are classified as "S" in the SIMS component data base. The controls for this list are similar to controls for the Q-list. This list is also referred to as the Component Level S-list (CLSL).

2.3 RESPONSIBILITIES

2.3.1

ANO 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 Entergy Operations President and Chief Executive Officer to all workers whose activities may influence quality). The QA Program designates responsibilities and duties of specific individuals, which may be performed by their appointed designees.

2.3.2

The QA 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

The QA Program also includes provisions that require suppliers, contractors, subcontractors, consultants, etc. to maintain and use quality assurance programs reviewed and approved by the Manager, Material Requirements. Audits or surveillances by Material Requirements provide assurance of compliance with applicable procedures.

2.3.4

On-site quality control of nuclear fuel is the responsibility of System Engineering and is implemented through the use of plant administrative procedures. These procedures include the receipt, inspection, handling, storage and accountability of Special Nuclear Material (SNM). Individuals who perform receipt inspections are qualified in accordance with paragraph 2.6.3 of this manual. The Director, Nuclear Safety or designee maintains a listing of those individuals qualified to perform receipt inspection on nuclear fuel.

2.4 PROCEDURES

2.4.1

Activities which affect quality are defined in appropriate procedures, which are developed to cover administration and control. The procedures state the policies and instructions necessary to fulfill the intent of the QA Program. Procedures provide for standard forms, lists, and checkoffs used in documenting the inspections, certifications, reviews, surveillances and audits. Programs and procedures are 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 cleanness and assurance that required prerequisites for the given activity have been satisfied. Administrative procedures also assure that the need for special controls, processes, tests and equipment to attain the required quality and the need for verification of quality by inspections, evaluations or tests is taken into account.

2.5 PROGRAM REVISION AND CONTROL

2.5.1

Program revision and control shall be the responsibility of the Director, Nuclear Safety.

2.5.2

Proposed changes to this manual are to be submitted by the Director, Nuclear Safety to affected 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 a Supervisor, Quality Assurance; Director, Nuclear Safety; and the Vice President, Operations ANO.

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 Director, Nuclear Safety, or his designee, is to determine if changes do or do not reduce the commitments of the QA Program.

2.6 PERSONNEL

2.6.1

Employees whose duties and responsibilities are related to the QA Program activities at or in support of ANO 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 (badged personnel only), discussion of the overall company policies, procedures and instructions which establish the QA Program, an explanation of the quality organization and a discussion of those procedures which implement the QA Program related to the employee's specific job-related activity.

2.6.2

The education, experience and responsibility requirements of individuals involved in the QA 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 approved 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 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. Personnel involved with nondestructive examination of materials, components or systems are to meet the qualification requirements of the American Society Nondestructive Testing Recommended Practice SNT-TC-1A or ASME Section III and XI for ASME Code materials, components or systems. Personnel are to be certified to perform these tasks in accordance with these codes and standards.

2.6.5

Personnel performing audits of the QA 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

Personnel appointed to the SRC shall collectively have the experience and competence required by ANSI/ANS 3.1-1981 to review problems in the areas specified in paragraph 1.3.8.1 of this manual. Onsite management personnel appointed to the PSC shall have the technical experience and competence required by ANSI/ANS 3.1-1981 for Managers, Professional-Technical, or Engineering and Technical Support personnel.

2.6.7

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 Director, Nuclear Safety through the Supervisors, Quality Assurance is responsible for a review of the QA Program on an annual basis to determine the effectiveness and proper implementation of the QA Program.

2.7.2

Management reviews of the status and adequacy of the QA Program are accomplished through regular reports and presentations by the Quality Organization and through reviews of quality assurance reports. Quality Assurance reports supply data on the status of outstanding audit and corrective action items and may identify the status of other significant QA 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 is 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 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, accessibility for inservice inspection, and the specification of test and inspection criteria. Those design activities performed by individuals within Engineering are controlled by the use of Plant Modification Process (PMP) control procedures and by applicable administrative and departmental 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 sections within Engineering, between Engineering and other Nuclear Organizations, and between Engineering and firms/suppliers outside the Nuclear 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 a procedure applicable to the design activity. Design information between interfacing organizations is to be documented and retained for permanent records.

3.4 DESIGN VERIFICATION

3.4.1

To assure the design is adequate and the above requirements and procedures are implemented, Engineering is 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 engineering section 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 engineering section. 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 the use of Supervisors as design verifiers is to be verified by Quality personnel 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 design 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 irreversible.

3.4.4

Design work performed by organizations outside of the Nuclear Organization is to receive a documented review and approval by engineering personnel in accordance with PMP control procedures and applicable 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 PMP control procedures and departmental procedures for Engineering. Design changes are subject to review and verification by the same engineering section which reviewed and verified the original design unless otherwise specified in departmental procedures for design control. If changes to an approved design are required to meet plant requirements or conditions, Field Change Requests (FCR) may be issued or otherwise documented by a cognizant engineer and transmitted with the changes for review and approval in accordance with PMP control procedures and applicable departmental 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 PMP control procedures and applicable departmental procedures.

3.5.3

During preparation of a design change, the responsible engineering section is to perform a review per 10CFR50.59 to verify compliance with the SAR and to determine if NRC approval of the design change is required. The documented 50.59 review is to be reviewed and approved by the PSC. In addition, any 10CFR50.59 evaluations shall also be reviewed and approved by the SRC.

3.5.4

The conformance of design changes to regulatory and license commitments, quality codes and standards, and design specifications from initiation through installation/implementation is verified by Quality personnel through audit, surveillance, or inspection activities.

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 root cause and to institute appropriate changes in the design process and/or QA 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 Superintendent, Administrative Services is responsible for maintaining permanent records of the design documents for the construction and testing phases, and 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 17.0 of this manual. These records provide the historic reference necessary for the safe and reliable operation of ANO.

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. Procurement document control activities are to be in accordance with approved 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 are 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 are to be in accordance with applicable procurement and contract administration procedures. Purchase Orders for items are issued through the Procurement section. Contracts for items and/or services are issued through the Contracts Administration Section.

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 item's 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 will result 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 inspections, 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 10CFR5O, Appendix B, the appropriate ANSI standards and/or the appropriate ANO-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

4.3.1 The appropriate sections within the ANO organization, as identified in the applicable procedures for procurement and contract administration activities, are to review safety-related procurement documents to assure that the required quality requirements (including source surveillance and/or inspection) are imposed on suppliers/contractors.

4.3.2 The incorporation of appropriate quality requirements in procurement documents is verified by Quality through periodic review in audits, surveillances or inspection activities.

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 Procurement or Contract Administration personnel, as appropriate, after concurrence from the originator or organization which originated 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 ANO. 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, quality assurance, quality control, quality engineering and off-site activities in support of ANO. 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, Rev. 2 (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, inspection and audit by the Quality Organization.

5.3 REVIEW OF INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.3.1

Instructions, procedures and drawings are prepared, reviewed and approved in accordance with applicable administrative procedures.

5.3.2

Procedures required by Technical Specifications 6.8.1 (for Unit 1 and Unit 2) which affect nuclear safety, as determined by the General Manager, Plant Operations, and changes thereto, shall be reviewed as follows:

a. Each procedure or change shall be independently reviewed by a qualified individual knowledgeable in the area affected other than the individual who prepared the procedure or procedure change. This review shall include a determination of whether or not additional cross-disciplinary reviews are necessary. If deemed necessary, the reviews shall be performed by the review personnel of the appropriate discipline(s).

b. Individuals performing these reviews shall meet the applicable qualifications of ANSI/ANS 3.1-1981, Section 4.0, excluding subsections 4.3.2 and 4.5, and by approved to perform these reviews in a given area by the General Manager, Plant Operations.

c. Those procedures and programs specified by QAMO Section 1.3.8.2.3.2 and changes in intent thereto, shall be reviewed by the PSC and approved by the General Manager, Plant Operations, or the applicable Plant Manager prior to implementation.

d. Those procedures and programs specified by Technical Specification 6.8.1, and changes in intent thereto, with the exception of those specified in QAMO Section 1.3.8.2.3.2 shall be approved by the appropriate Department Head as specified in station administrative procedures.

e. Review of the procedure or procedure change will include a determination of whether or not an unreviewed safety question is involved. This determination will be based on the review of a written safety evaluation prepared by a qualified individual, or documentation that a safety evaluation is not required. PSC review, SRC review, and NRC approval of items involving unreviewed safety questions shall be obtained prior to station approval for implementation.

f. Overall Administrative Procedures (OP-1000.XXX and OP-6000.XXX Series) and Engineering Administrative Procedures (OP-5000.XXX Series) are also reviewed by the Quality Organization to verify compliance to the QA program.

g. Written records of reviews shall be prepared and maintained in accordance with Technical Specifications 6.9 and 6.10 (for Unit 1 and Unit 2 respectively) and Section 17.0 of this manual.

5.3.3

Procedures and instructions are to be reviewed upon identification of new or revised source material potentially affecting the content of procedures, or prior to use if the procedure/instruction is not used routinely to determine if changes are necessary or desirable. Audits by the Quality Assurance Department are performed on at least a biennial basis to verify the effectiveness of controls used to maintain procedures current. 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 3.0 and 6.0 of 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 ANO procedures, and controlled in the same manner as the original.

5.4.2

Temporary changes to approved procedures may be made in accordance with either the applicable Technical Specifications or approved procedures for those procedures which are not Technical Specifications related. In the event of an emergency not covered by an approved procedure, Operations personnel may take action, without obtaining approvals, 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, QA Manual Operations, SAR, 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 Quality Organization and/or by the appropriate reviewer as described in approved procedures.

6.2.3

The Superintendent, Administrative Services is responsible for the control and issuance of procedures and revisions thereto to assure distribution in accordance with approved procedures. The Superintendent, Administrative Services is also responsible for the storage and control of approved historical plant documents and the storage of historical drawing records. The Superintendent, Administrative Services is responsible for the control and issuance of drawings and revisions thereto to ensure 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 a document is 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 17.0 of this manual.

6.7 VERIFICATION

Quality personnel through their various levels of quality review, surveillance, audit, and inspection 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 Suppliers List (QSL) is to be maintained and controlled under the direction of the Manager, Material Requirements. The QSL identifies those vendors/contractors that have been evaluated and approved by Material Requirements to furnish material, equipment or services, and identifies any restrictions imposed on the vendor/contractor as a result of their evaluation.

7.2.2

Vendors/Contractors are evaluated and placed on the QSL by any of the following methods, as approved by the Manager, Material Requirements:

(1) Source survey by Material Requirements personnel to verify compliance to applicable 10CFR5O, Appendix B requirements or to applicable ASME Section III quality assurance program requirements.

(2) Evaluation and acceptance of source surveys performed by others (e.g., NUPIC, other utilities, NSSS suppliers, and prime contractors) indicating a program meeting the appropriate requirements of 10CFR5O, Appendix B.

(3) A review of the vendor's/contractor's 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.

(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.

(5) In addition to the above, for ASME Code Suppliers, verification that a vendor is a holder of an ASME Certificate of Authorization issued as a result of an ASME survey.

7.2.3

Vendors/contractors listed on the QSL are to be selected for procurement of material, equipment or services except for items designated "commercial-grade" per approved procedures and as noted in paragraph 7.2.4. Standard catalog items may be procured from a vendor/contractor not listed on the QSL provided the manufacturer of the item is on the QSL and all requested documentation originates from the manufacturer. The QSL is periodically reviewed and updated per applicable procedures to ensure it is maintained current. The list of qualified vendors/contractors is available to personnel involved in the procurement process.

7.2.4

Services by contractors which provide only technical guidance/support or which require work activities to be performed under the scope of the QA Program may be furnished by contractors not listed on the QSL. The contractor's work activities and personnel are to be controlled in accordance with approved 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 Material Requirements 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

The need for source surveillance/verification is determined by Material Requirements. Source surveillance/verification may also be requested by the originator of the PR/Contract, or the Quality Organization. Source surveillance is to be performed by Material Requirements personnel or their appointed representative in accordance with surveillance plans approved by the Manager, Material Requirements 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 Manager, Material Requirements to verify implementation of a satisfactory quality program on the items or services being procured. Audits performed by others (e.g., NUPIC, other utilities, or prime contractors), as evaluated and approved by the Manager, Material Requirements, may be used as an alternative to audits by Material Requirements personnel to verify the vendor/contractor is implementing a satisfactory quality program. Audits are to be conducted in accordance with Section 18.0 of this manual.

7.4 RECEIPT INSPECTION

7.4.1

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

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. If a source surveillance has been performed on material and equipment received at ANO, requirements identified in procurement documents that have been addressed in the Source Surveillance report do not have to be re-verified during receipt.

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 prior to installation or use of such material or equipment and the results documented unless otherwise specified in approved 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/verification and audit activities or through independent testing of the item by ANO.

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 approved 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 approved 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 ANO 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 are to be clearly identified, segregated from acceptable items and dispositioned per approved procedures and as described in Section 15.0 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 approved procedures and Section 13.0 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 approved 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 approved 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 approved procedures. These tags identify the status of and provide traceability to the item throughout storage and release for 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 approved 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 audit, surveillance and inspection activities ensure compliance to requirements and also ensure 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 15.0 of this manual and approved 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 approved 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 approved procedures which meet the requirements of applicable codes, specifications, standards and other criteria stipulated in ANO licensing documents.

9.2 GENERAL

9.2.1

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

9.2.2

Technically qualified personnel are to establish the procedural and qualification requirements for those special processes not covered by existing codes or standards or where the QA Program 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 Recommended Practices (SNT-TC-1A and supplements). The requirements for cleaning and flushing of fluid systems are to comply with 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 ensure compliance with 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 approved 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 ensure that the appropriate documents are up-to-date and personnel are periodically re-qualified and/or re-certified in accordance with approved procedures.

9.4 RECORDS

The results of special processes are to be documented, reviewed, approved and stored in accordance with appropriate approved 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 approved procedures is verified by Quality personnel through performance of their audit, review, surveillance and inspection 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 on-site operating organization

(4) Non-routine maintenance activities and minor modifications made by the on-site 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

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 (8/72); R.G. 1.37, (3/73); R.G. 1.38, Rev. 2 (5/77); R.G 1.39, Rev. 2 (9/77); R.G. 1.94, Rev. 1 (4/76); and R.G. 1.116, Rev. 0-R (6/76).

10.2.3

Personnel performing inspection activities to verify quality are to be qualified as stated in Section 2.0 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 instructions or 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

(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 approved procedures.

10.3.2.3

If individuals performing inspections are not part of the ANO Organization, 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 Director, Nuclear Safety or designee 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 within non-routine maintenance procedures and Plant Modification Packages (PMPs) by Engineering and reviewed by Quality Control personnel 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 PMPs are established by the originating department, Quality personnel or other responsible individuals and reviewed by Quality Control personnel for concurrence and possible assignment of additional inspection hold points.

Work is not to proceed past a designated inspection hold point until signed by a qualified inspector or waived, in writing, by the Director, Nuclear Safety or designee.

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 and the ability to verify quality by job-site testing.

10.4.3

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

10.4.4

For work involving the modification, repair, replacement or inservice 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 approved procedures and Section 17.0 of this manual. Inspection results on ASME Code items are available to the Code Inspector for his review.

10.5.3

The results of inspection and monitoring activities are periodically evaluated per approved 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

Nonconforming items found as a result of inspection and monitoring activities are identified, segregated and dispositioned in accordance with approved written procedures and Section 15.0 of this manual. Rework, repair or replacement performed after completion of inspections requires re-inspection 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 Guide 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 5.0 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 5.0 of this manual.

11.3 TEST CONTROLS

11.3.1

Tests relating to plant start-up following a unit shutdown 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 in-plant surveillance tests and inspections required to assure operation within the limiting conditions of operation are identified in the SAR and Technical Specifications applicable to each unit. 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 SAR and 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 Inservice Inspection (ISI) Programs applicable to each unit. Engineering Programs is to establish and maintain an ISI plan for each unit. The plan specifies the inspection items, inspection procedures, inspection intervals and types of inspections. Engineering Programs 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:

(1) Test equipment and measuring devices are calibrated in accordance with the requirements of Section 12.0 of this manual and are functioning properly.

(2) Test personnel have been qualified to perform the test in accordance with the requirements of Section 2.0 of this manual.

(3) Appropriate witness and hold point notifications have been provided.

(4) Test prerequisites are completed.

(5) 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 10.0 of this manual. Testing as a result of repairs, 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 10.0 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, qualified personnel per approved procedures to assure that test objectives and inspection requirements have been satisified. Nonconforming items are to be identified and controlled in accordance with Section 15.0 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 Document Control Center for retention in accordance with Section 17.0 of this manual.

11.5 TEST STATUS

Inspection and test status is to be controlled in accordance with the provisions of Section 14.0 of this manual.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 SCOPE

12.1.1

A program is 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 is generally applicable to chemical and radiochemical equipment, except for paragraphs 12.3.3, 12.3.4 and 12.4.2. The controls for the calibration of chemical and radiochemical measuring equipment are to comply with the provisions of Regulatory Guide 1.33, Rev. 2, Appendix A, Section 10.0, and performed in accordance with chemical and radiochemical control procedures.

12.1.3

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 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 approved 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

Personnel performing the activity are responsible for utilizing only properly identified and calibrated measuring and test equipment when performing inspections and tests for record.

12.2.4

The Quality Organization is 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/logs.

12.3.2

Measuring and test equipment are 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 Institute of Standards and Technology, or if nonexistent, to accepted industry or ANO 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 approved procedures. If any piece of measuring or test equipment is consistently found to be out of calibration, it is to be repaired or replaced.

12.3.5

Re-calibration per approved procedures is to be performed when the accuracy of either installed or calibrated equipment is questionable.

12.4 EQUIPMENT IDENTIFICATION

12.4.1

Measuring and test equipment lists are to contain sufficient information to uniquely identify each item listed and is to include, as a minimum, calibration intervals, tolerances and storage locations. The lists are also to identify the group responsible for the control of each item.

12.4.2

Items listed on measuring and test equipment lists are to be tagged, labeled or otherwise identified per approved procedures in such a manner that clearly identifies the equipment and their calibration status and provides traceability to the calibration records.

12.4.3

Measuring and test equipment found to be out of calibration are to be tagged and segregated from acceptable equipment in accordance with approved procedures until repaired and/or re-calibrated.

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 is necessary, it is 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 items at the plant.

13.3 SHIPPING CONTROLS

13.3.1

Shipping requirements are to be specified in the procurement documents. Suppliers' compliance with 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 operating licenses and other appropriate regulatory documents. The Manager, Radiation Protection/Chemistry is responsible for assuring that radioactive sources and instruments containing radioactive sources are stored and handled per these requirements and approved procedures. The Manager, Radiation Protection/Chemistry is also responsible for assuring that low-level waste material is stored and shipped per these requirements and approved procedures. The Managers, System Engineering, ANO-1 & 2 are responsible for assuring that special nuclear material (SNM), as defined in approved procedures, is shipped, stored and handled per these requirements and the approved procedures.

13.4 RECEIVING

13.4.1

Materials and equipment are to be received at the plant per approved procedures and subjected to a receipt inspection in accordance with Section 7.0 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 approved 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 approved procedures and Section 15.0 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(s) are to be provided by the Manager, Materials Purchasing and Contracts (see paragraph 13.3.2 for control of radioactive sources, low-level waste material 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 is to be documented and controlled in accordance with approved 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 are effectively maintained. Inspections and examinations under the control of the Supervisor, Quality Control are to be performed and documented on a periodic basis to assure that the integrity of the items and their containers is being maintained. Periodic audits under the control of the Supervisors, Quality Assurance are also performed to assure compliance with storage requirements.

13.6 HANDLING CONTROLS

13.6.1

Special handling requirements are to be specified in the procurement documents and approved procedures to protect the quality of items susceptible 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 approved 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 Operations 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 appropriate Superintendent, Shift Operations. The Superintendents, Shift Operations are 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 approved 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 to 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 15.0 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 approved 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 cleanliness 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 approved procedures. Procedures that control such temporary modifications shall delineate requirements to:

(1) Maintain appropriate status logs of temporary modifications

(2) Perform independent verification of temporary modifications, by an individual cognizant of the purpose and effect of the temporary modification

(3) Document temporary modifications to assure the required actions are taken to return the equipment or system to its original operating configuration and status

Additionally, temporary modifications which constitute temporary changes to plant configuration due to routine tasks such as additions of temporary jumpers or gauges as part of maintenance, calibration, or troubleshooting, may be installed and removed by use of approved procedures or work plans, providing (2) and (3) above are satisfied. These changes are not maintained on a status log since removal of the temporary change is controlled by the same procedure or work plan which installed it.

14.2.6

When equipment or a system is properly identified as being ready to be returned to service, the appropriate Superintendent, Shift Operations is notified and initiates the proper operation procedures. Testing of the equipment or system for functional acceptability is to be in accordance with Section 11.0 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 approved procedures and Section 15.0 of this manual.

14.3 MAINTENANCE CONTROL

14.3.1

In addition to the requirements and controls identified in subsection 14.2 of this manual, a maintenance program is to be planned and scheduled through the appropriate Manager, Maintenance to assure that the safety of the plant is not compromised nor the Technical Specifications violated. Maintenance activities are to be performed per approved 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 appropriate Manager, Maintenance.

14.3.2

A preventive maintenance program, including procedures and instructions for systems, structures and components, is to be established and maintained, which prescribes the frequency and type of maintenance to be performed in order to preclude equipment malfunctions. The preventive maintenance program requirements, including associated procedures and task instructions will be maintained by the appropriate Manager, Maintenance as applicable based on the specific maintenance discipline. The associated engineering evaluations for each unit will be maintained under the applicable Manager, Maintenance. Implementation of the program is the responsibility of the General Manager, Plant Operations and is implemented by qualified maintenance personnel in accordance with approved 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 approved procedures and Section 16.0 of this manual.

14.4 OVERALL PLANT STATUS

14.4.1

The Superintendents, Shift Operations are 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 component 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 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 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 inadvertent use or installation. These procedures are to contain measures to assure the prompt identification and notification, documentation, segregation, technical review and disposition of a nonconforming item.

15.2 GENERAL

15.2.1

It is the responsibility of each individual to identify a nonconformance and to report it to their cognizant supervisor for review and concurrence. The initiator is to document the nonconformance as identified within approved procedures. If the nonconformance is determined to be a Technical Specification violation and/or reportable to the NRC, see subsection 16.5.

15.2.2

Nonconforming items are to be identified by tagging, marking or as otherwise identified per approved procedures to control further processing or, when physical segregation is not practical, to prevent inadvertent 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. Tags and/or markings are to remain on the item until the disposition is complete per approved procedures.

15.2.3

Reports of nonconforming items 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 a recommended disposition. The disposition for materials, parts, components and as applicable, services (including computer codes), which may be reject, rework, repair or use-as-is, and any actions taken/required to be taken as a result of the disposition are to be documented on the report.

15.2.4

Review of the disposition for concurrence is to be performed by the individual/group identified within approved procedures. If the review group or individual cannot agree with the assigned individual on the disposition, either the General Manager, Plant Operations or the appropriate Director or Manager, is to decide. For a repair or use-as-is disposition, a cognizant individual knowledgeable in the design requirements for the affected item is also to review the report 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 report.

15.2.5

The acceptability of rework or repair of materials, parts, components, systems and structures is to be verified by re-inspecting 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.

15.2.6

Upon completion of the disposition, the nonconformance report is to receive an independent review in accordance with approved procedures, for concurrence or possible assignment of additional actions pertaining to the disposition.

15.2.7

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

15.3 SUPPLIER NONCONFORMANCES

15.3.1

Procurement documents are to contain requirements for the vendor/contractor to identify to ANO those items 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 ANO for evaluation and acceptance. The vendor/contractor is to document such nonconformances on its applicable nonconformance report which is to be included in the final documentation package submitted to ANO, in accordance with the procurement documents.

15.3.2

Upon receipt of items at the plant, ANO Receipt Inspection personnel are to review any nonconformance reports in the documentation package to ensure the nonconforming items have been properly dispositioned and accepted by ANO.

15.4 RECORDS

15.4.1

Upon completion of disposition and verification activities, the completed nonconformance report, 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 DEFICIENCY TRENDING

The Director, Nuclear Safety or designee is to maintain and issue a trending report, at least quarterly, of nonconformances to the Vice President, Operations ANO for review.

16.0 CORRECTIVE ACTION

16.1 SCOPE

A corrective action system is established to assure that conditions adverse to plant safety, such as failures, malfunctions, deficiencies, deviations, defective materials and equipment, 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 is documented and reported to appropriate levels of management for independent review.

16.2 GENERAL

16.2.1

When deviations, deficiencies, malfunctions, nonconformances or other conditions are encountered, they are to be reported to responsible authorities for review and disposition in accordance with approved procedures.

16.2.2

Cognizant supervisors are to review discrepancies discovered during the course of plant operations and take appropriate action to resolve the discrepancies. For significant conditions adverse to safety, they are to initiate action to identify their root causes and take necessary corrective action to preclude repetition.

16.2.3

Evaluation of the corrective action is to be performed by the individual/group identified within approved procedures to determine its adequacy and completeness and to assure the need for additional corrective action. If the corrective action is acceptable, follow-up action to verify implementation, documentation and close-out of the corrective action commitments is to be performed per approved procedures.

16.2.4

If agreement upon the resolution cannot be achieved, the condition is to be referred to the appropriate level of management as specified in approved procedures.

16.3 SUPPLIER DEFICIENCIES

When vendors furnish products or services that do not conform to the requirements of the applicable purchase contract and, in the opinion of Material Requirements, warrants additional evaluation, Material Requirements will evaluate the vendor's past performance using available information such as audits, receiving inspection reports, industry notices, etc. Results of the evaluation will be used to determine the status of the vendor.

16.4 SIGNIFICANT CONDITIONS

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

(1) Conditions that have a direct adverse effect on the safety of the plant per the plant Operating License and Technical Specifications

(2) Conditions that have caused the uncontrolled release of radioactive materials (liquid, solid, gaseous or air particulate) to the environs

(3) Adverse quality trends which could lead to unsafe plant operations

16.5 REPORTABLE EVENTS

16.5.1

When significant conditions adverse to safety are discovered, the Licensing Department is to evaluate the condition and determine if it is an event reportable to the NRC.

16.5.2

Upon determination that a significant adverse condition is reportable, the Director, Nuclear Safety ensures that the appropriate report is initiated and subsequently transmitted to the NRC.

16.5.3

The PSC reviews Root Cause and Corrective Action plans for reportable events through its review of Licensee Event Reports (LERs).

16.5.4

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

16.6 VERIFICATION

Verification by surveillance or audit of the effective implementation of corrective actions is to be periodically performed and documented by responsible Quality personnel. Audits are to be performed in accordance with Section 18.0 of this manual.

17.0 QUALITY ASSURANCE RECORDS

17.1 SCOPE

17.1.1

Documentation covering design, construction, procurement, fabrication, inspection, operation, 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, maintenance, audits, material analyses; monitoring of work performance; qualification of personnel, procedures, and equipment; historical drawings, specifications, personnel exposure, engineering reports, calculations, procurement documents, calibration procedures and reports, nonconformance reports, corrective action reports, correspondence and related records pertinent to quality as defined in approved procedures.

17.2 RESPONSIBILITY

17.2.1

The Superintendent, Administrative Services is responsible for the establishment, implementation and maintenance of the records management program to be used throughout the operational life of ANO and for ensuring that documentation retention requirements comply with applicable Technical Specifications, codes and regulations.

17.2.2

Personnel, other than plant staff, and outside firms who perform work on ANO in the areas of design, procurement, maintenance, modification, testing, quality assurance and special nuclear materials are to provide documentation/certification records to ANO for subsequent storage and retention by the Document Control Center.

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 18.0 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 or stored for future use as prescribed in approved procedures.

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 approved 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 approved procedures.

17.3.4

Quality Assurance documents received from suppliers are inspected and approved as directed by approved procedures for procurement of material, equipment and services.

17.4 STORAGE

17.4.1

Permanent records are to be microfilmed and the microfilm stored within a controlled area at ANO per approved 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 approved procedures.

17.4.1.2

A list is to be prepared in accordance with approved procedures designating those personnel who have access to the storage files.

17.4.2

Records 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 approved procedures for records management.

17.5.2

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

(1) Establishment of a records list designating the required quality-related records

(2) Establishment of a system designating criteria for document inspection to assure that records are complete, 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 Superintendent, Administrative Services.

17.6 FINAL DISPOSITION

The Superintendent, Administrative Services is responsible for disposal of quality-related records in accordance with approved procedures for document retention and disposition, which permits periodic 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 is provided to ensure 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 QA 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 Supervisors, Quality Assurance and the Manager, Material Requirements have assigned auditing responsibility within the QA Program and are 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 commensurate 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 Quality Organization

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 manual.

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 Quality Organization and approved by the Supervisors, Quality Assurance; Director, Nuclear Safety; and the 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:

a. The conformance of each unit's operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.

b. The performance, training, and qualifications of the entire staff at least once per 12 months.

c. The results of actions taken to correct deficiencies occurring in unit equipment, structure, systems, or method of operation that affect nuclear safety at least once per 6 months.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of 10 CFR 50, Appendix B at least once per 24 months.

e. The Offsite Dose Calculation Manual and Process Control Program and implementing procedures at least once per 24 months.

f. The radiological environmental monitoring program and the results thereof at least once per 12 months.

g. Any other area of unit operation considered appropriate by the SRC or the Vice President, Operations ANO.

18.3.3

Audits of vendor/contractor activities are to be scheduled as identified in 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 programs. Audit schedules for vendor/contractor audits are approved by the Manager, Material Requirements.

18.3.4

Periodic reviews of the audit programs are to be performed by the SRC or their appointed management representative at least semiannually 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 responsible Quality management, or designee, prior to performing the audit. Checklists are to be used to ensure depth and continuity of audits in order to verify 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 QA Program, as appropriate

18.4.3

Deficiencies identified as a result of an internal audit are to be recorded on a Condition Report (CR) by the auditor and issued to the Department Head responsible for the corrective action. The Department Head or the assigned designee is to provide prompt corrective action to the deficiencies identified and for significant deficiencies, document on the CR the action taken or to be taken to preclude 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 CR.

18.4.4

Internal audit reports pertaining to plant operations activities are to be independently reviewed by the SRC to determine if additional corrective actions need to be initiated to assure continued safe operation of ANO. Internal audit reports pertaining to other than plant operations activities are to be independently reviewed by the SRC. In addition to this review, the audit reports are to be distributed, as a minimum, to the Director, Nuclear Safety; Supervisors, Quality Assurance; 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 Material Requirements personnel are to be recorded and distributed to ANO Records and to a designated representative of the audited organization as a minimum. Deficiencies are to be recorded and the audited organization is to describe actions taken to correct deficiencies and prevent recurrence. Corrective actions are to be verified by Material Requirements personnel and documented.

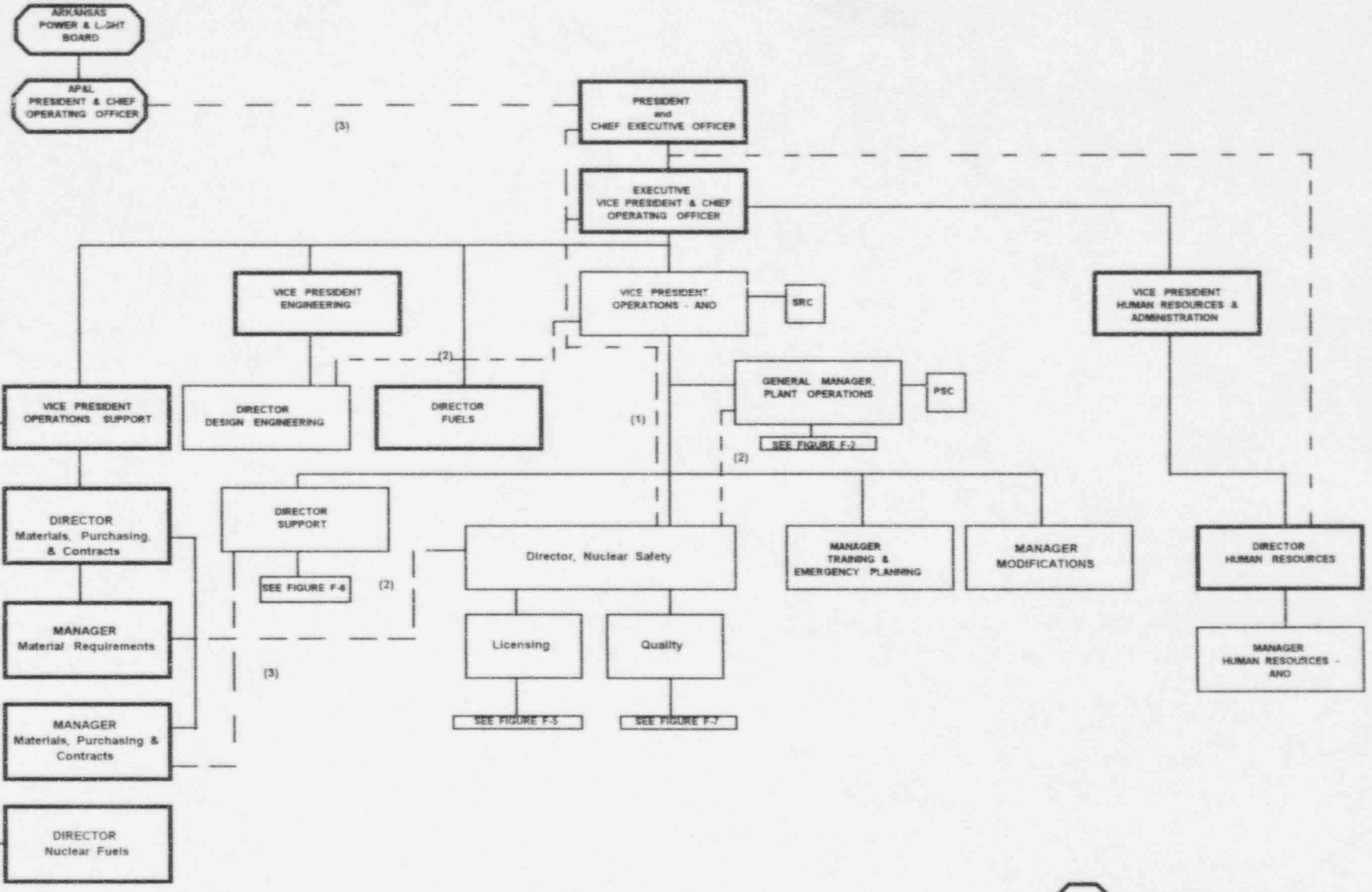
18.5 RECORDS

Written internal/external audit reports, including checklists, CRs, vendor/contractor findings, and related documentation supporting the follow-up activities are to be forwarded to the Document Control Center for storage in accordance with Section 17.0 of this manual.

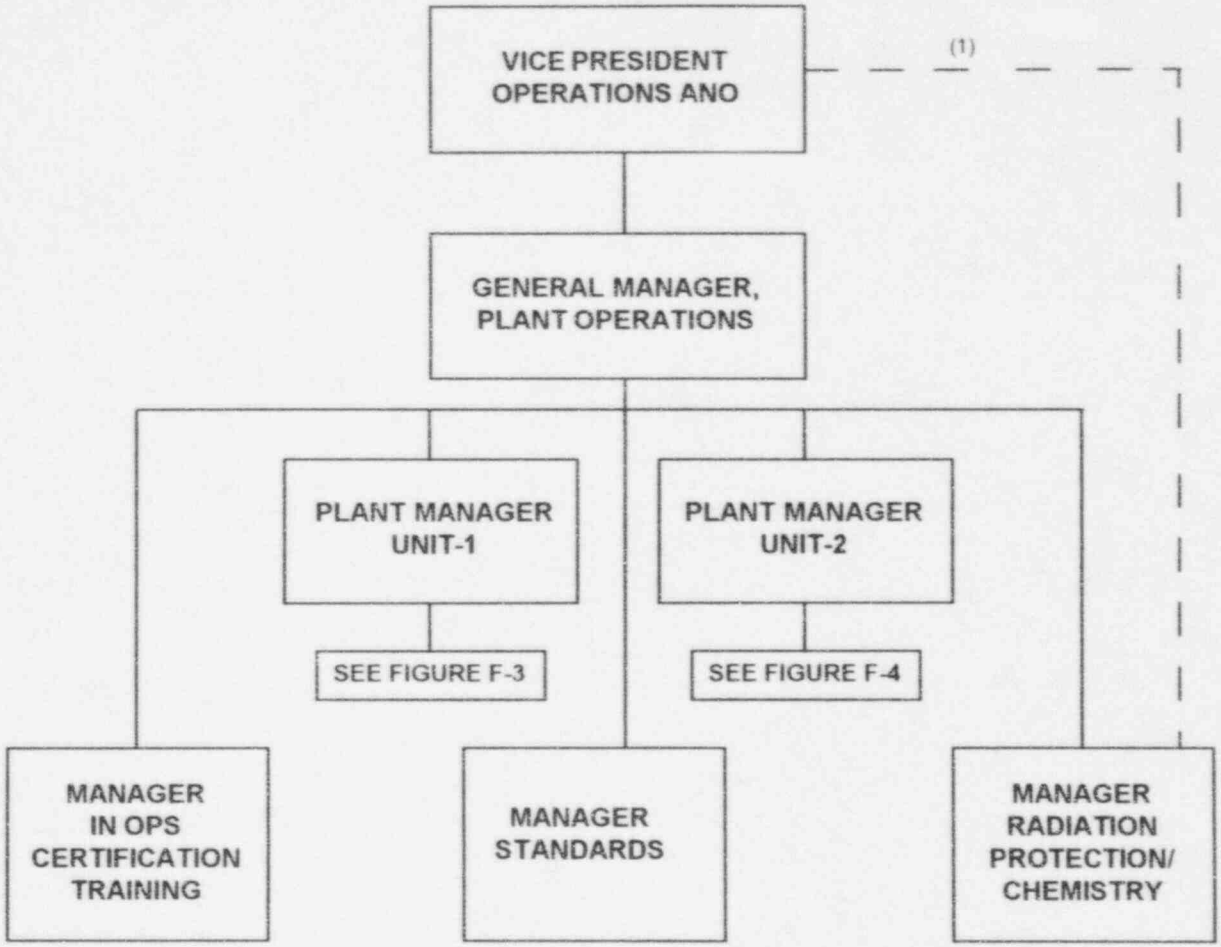
18.6 NUCLEAR FUEL AUDITS

The Manager, Material Requirements has 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. Material Requirements 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. Material Requirements also conducts audits of component suppliers as deemed necessary to assure the quality of the fuel and issues formal audit reports to document 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 Material Requirements and documented in follow-up reports. These audit reports are to be forwarded to ANO Records and stored in accordance with Section 17.0 of this manual.

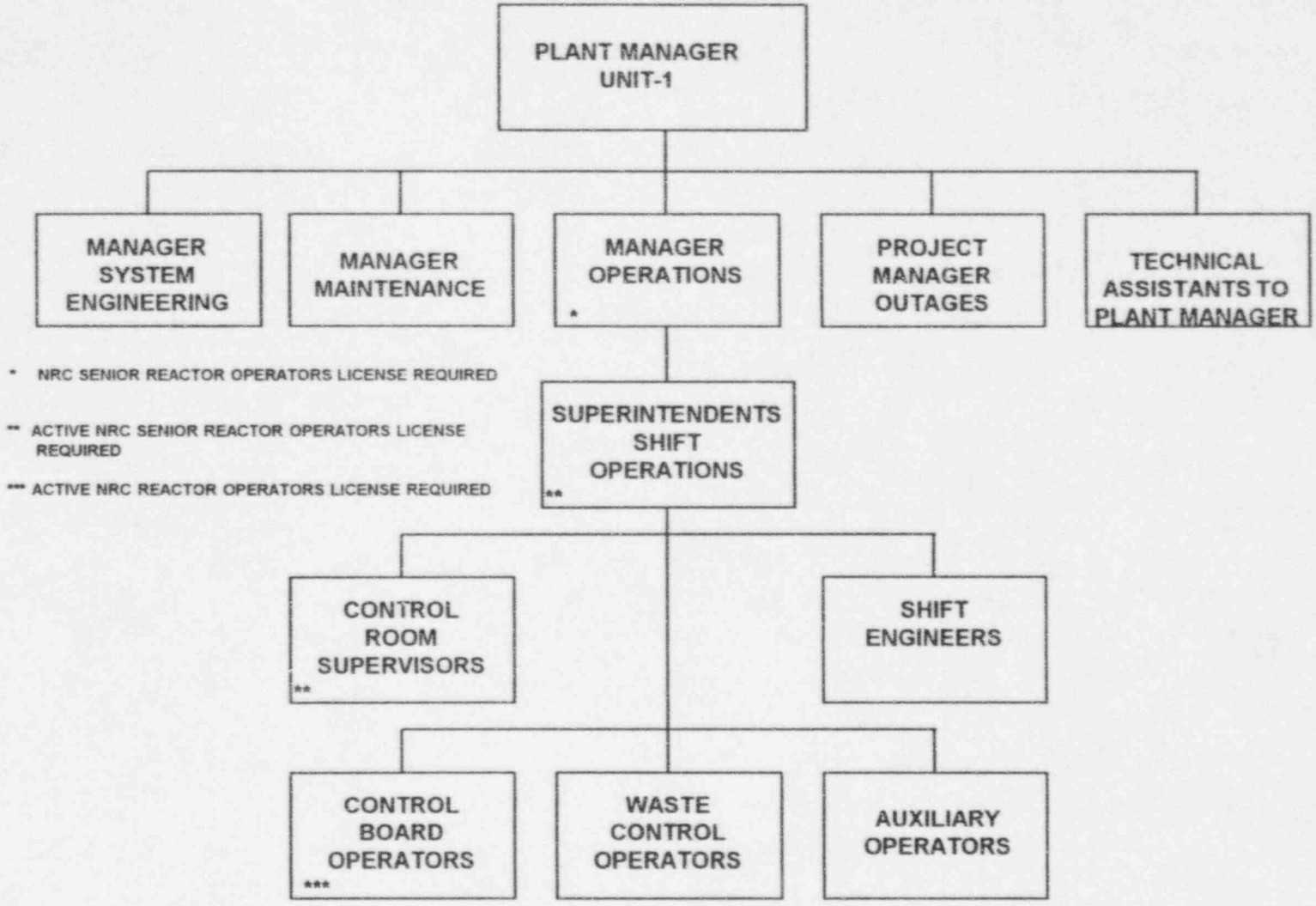


ENTERGY OPERATIONS - ANO & CORPORATE ORGANIZATIONS

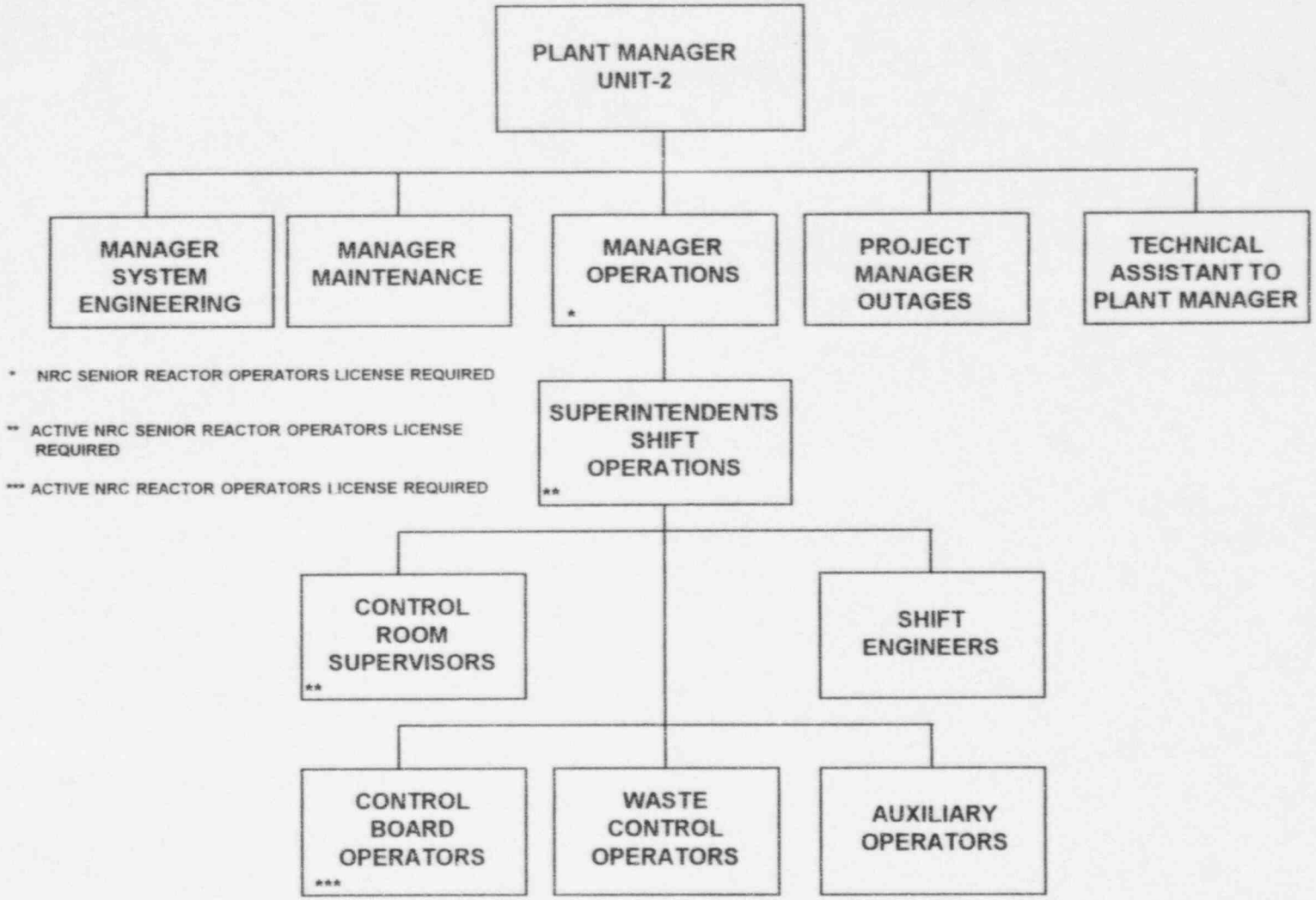


(1) THE MANAGER, RADIATION PROTECTION/CHEMISTRY REPORTS TO THE GENERAL MANAGER, PLANT OPERATIONS IN ADMINISTRATIVE MATTERS AND ROUTINE RADIATION PROTECTION AND RADWASTE CONCERNS AND TO THE VICE PRESIDENT, OPERATIONS ANO IN MATTERS OF RADIOLOGICAL HEALTH SAFETY AND POLICY.

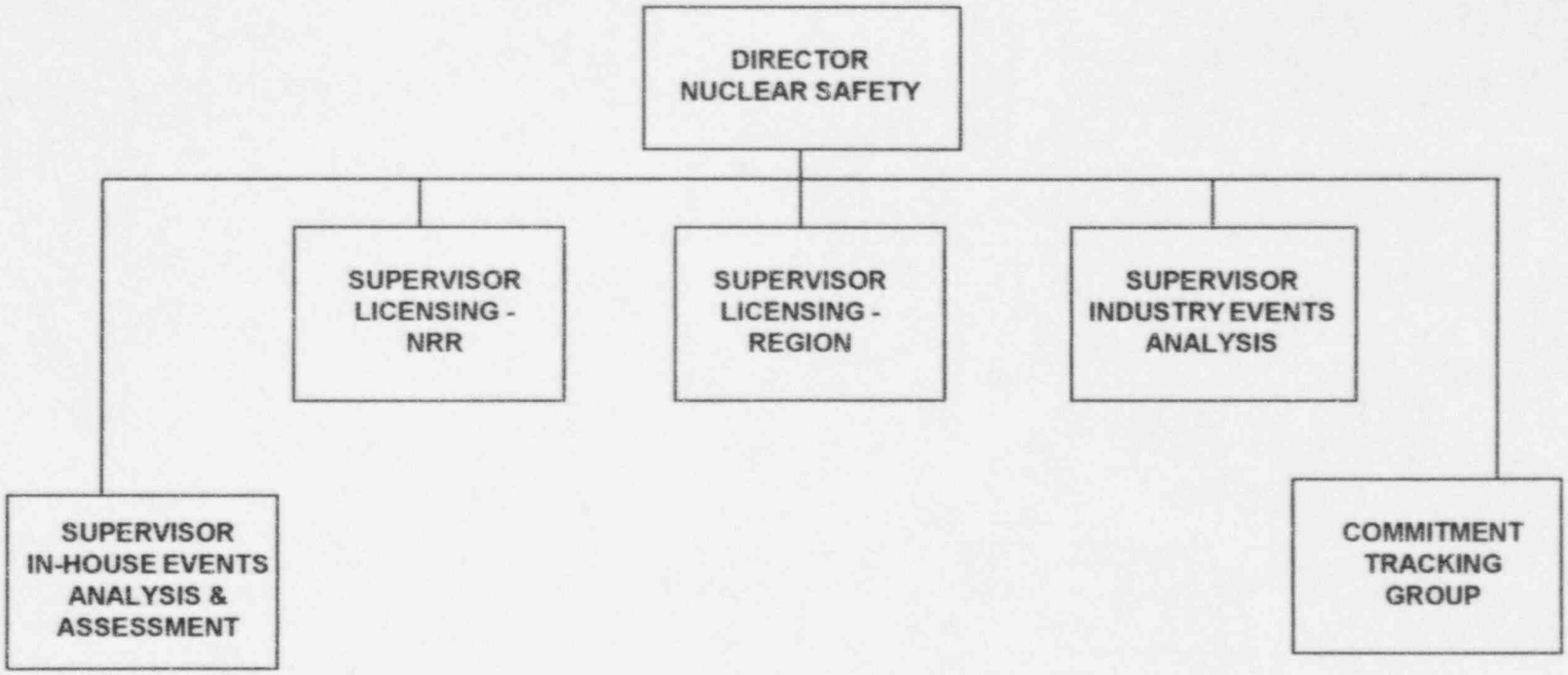
PLANT OPERATIONS DEPARTMENT



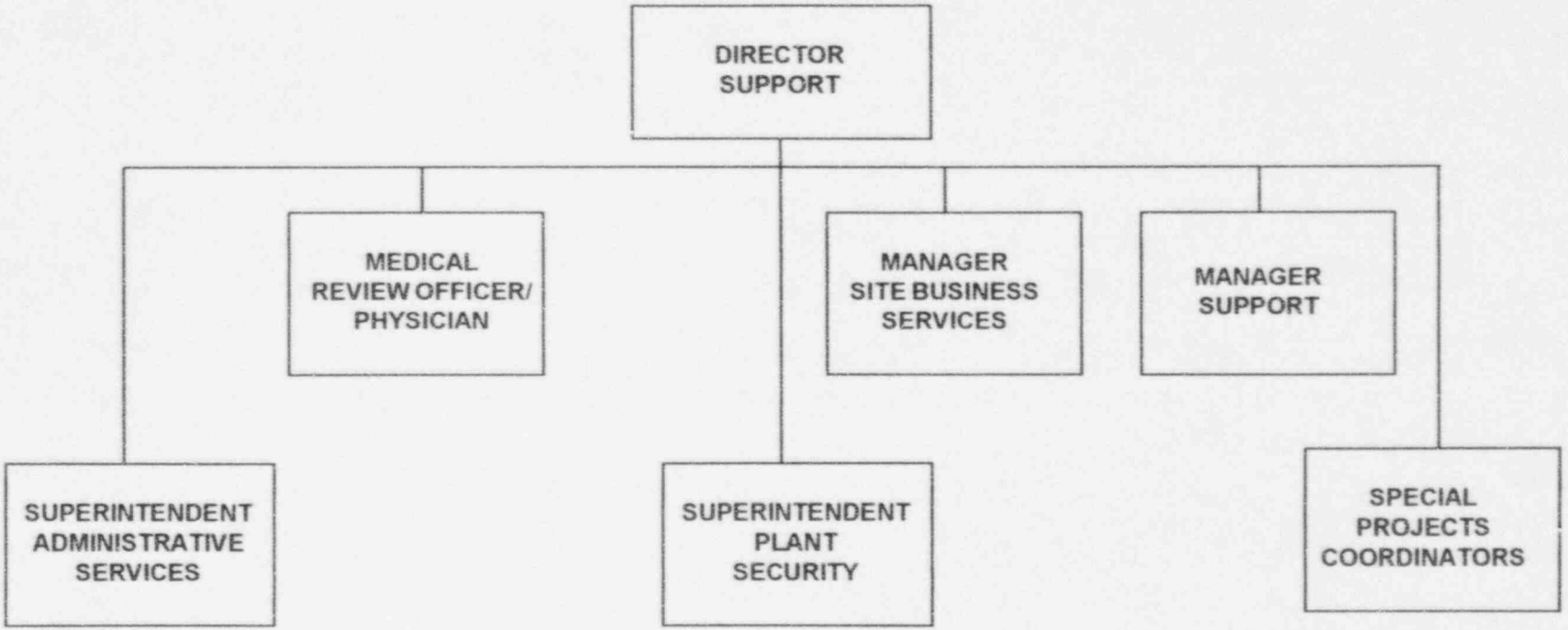
UNIT 1 OPERATIONS ORGANIZATION



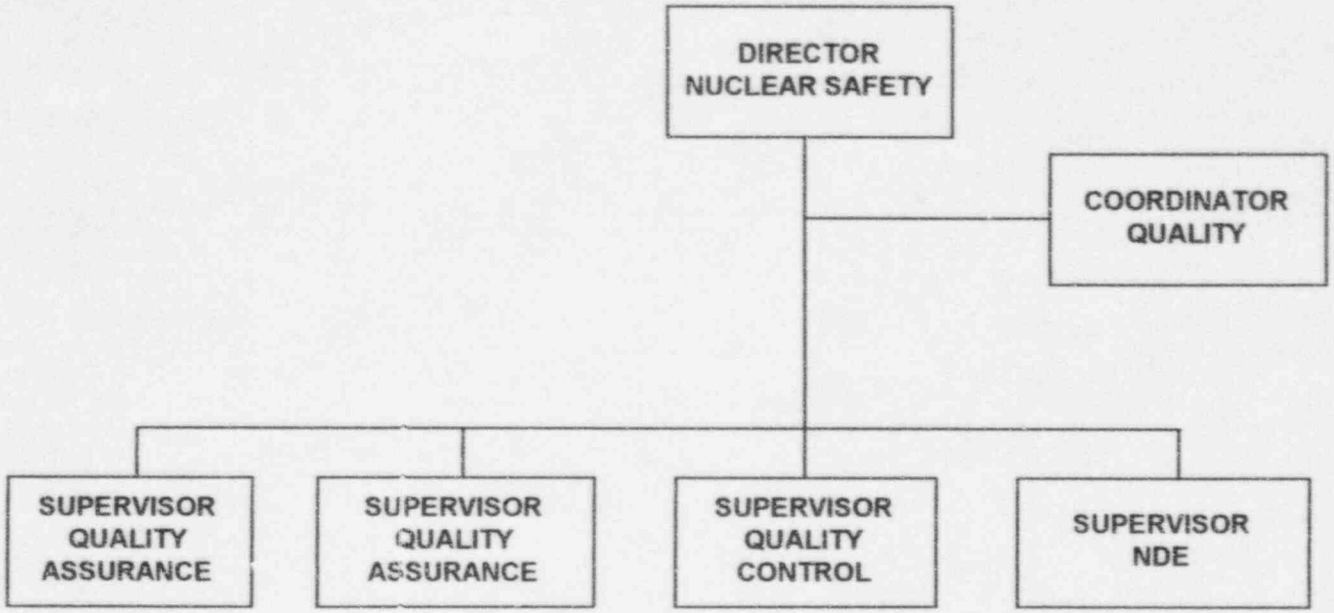
UNIT 2 OPERATIONS ORGANIZATION



LICENSING DEPARTMENT



SUPPORT DEPARTMENT



QUALITY DEPARTMENT

TABLE 1

ARKANSAS NUCLEAR ONE EXCEPTIONS/INTERPRETATIONS
OF REGULATORY GUIDES AND ANSI STANDARDS APPLICABLE
TO THE QA 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 ANO commitment refers to the Regulatory Guides and ANSI Standards, specifically identified in this manual. Additional Regulatory Guides, ANSI Standards, Guides and similiar documents implied or referenced in those specifically identified in this manual 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	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

	"high-value articles."	of the plant may depend upon other systems, structures and components which are not covered by this commitment.
ANSI N18.7 (Section 5.2.7)	The following standards contain .....during initial plant design and construction. AWS Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants, N45.2.6-1973...	ANO has committed to R.G. 1.58, Rev. 1/ANSI N45.2.6 - 1978 which shall be used in lieu of 1973 edition.
ANSI N18.7 (Section 5.2.7.1)	The causes of the malfunctions shall be promptly determined, evaluated, and recorded.	ANO will comply with this requirement, where applicable. This clarification is needed since it is not always possible to promptly determine the cause of the malfunction.
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	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

	of the original documents.	may not require that the revised (procurement) document receive the same review and approval as the original documents.
ANSI N18.7 (Section 5.2.15)	Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable.	Programmatic controls that are equivalent to or better than the biennial review process have been implemented at ANO. These programmatic controls are effected in an effort to ensure that procedures are reviewed for possible revision upon identification of new or revised source material potentially affecting the content of procedures, thereby maintaining the procedures current. Entergy Operations believes that this approach better addresses the intent of ANSI N18.7-1976 and is more acceptable from both a technical and practical perspective than a static two-year review process.

ANSI N18.7 (Section 5.2.17)	Records shall be kept in sufficient detail to permit adequate confirmation of the inspection program. documents with the procedure or document serving as the record. However, records of inspections will be identifiable and retrievable.	Not all inspections will require generation of a separate inspection report. Inspection requirements may be integrated into appropriate procedures or other
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 (Section 6.4.2)	Care of items in storage shall be exercised in accordance with	Types of components that could require maintenance while in storage shall be identified and evaluated

	the following:	for specific maintenance requirements. Maintenance activities 6.4.2(6) through (8) listed in this requirement shall be considered during this evaluation and any deviations shall be justified and documented.
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 released 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 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.	ANO takes exception to this requirement. ANO'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 those 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 of 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 designation 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, i.e., 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 splice location. Separate test cycles will be established for each bar size and each splice position.	
ANSI N45.2.9 (Section 4.3)	As a minimum, a receipt control system shall include procedures for receipt and inspection of incoming records.	When records are submitted for storage, personnel receiving the records are not subject to the requirements of ANSI N45.2.6-1978 nor Section 10.0 of this Manual for inspection of incoming records.
ANSI N45.2.12 (Section 4.2.1)	An individual audit plan describing	For those routine audits conducted during operations,

	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.	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 N45.2.12 (Section 4.5.1)	Management ...shall review and investigate any adverse audit findings to determine and schedule appropriate corrective action to including action to prevent recurrence... The response shall clearly state the corrective action taken or planned to prevent recurrence. In the event that corrective action cannot be completed within thirty days, the	In concert with Appendix B, Criterion XVI (Corrective Action) and Section 16.0 of this manual, only those audit findings classified as significant under the site corrective action system will require recurrence control and action within thirty days; non-significant findings will be resolved in a timely fasion consistent with site corrective action system requirements.

	audited organization's response shall include a scheduled date for the corrective action.	
ANSI N45.2.12 (Section 4.5.2)	Followup by auditing organization. Followup action can be accomplished through ...other appropriate means.	The followup actions prescribed in this paragraph will be administered through the procedural requirements of the site Corrective Action System. Corrective action plan review will only be performed for significant audit findings.
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 en-	Consistent with the requirement of ANSI N45.2.11, paragraph 6.1, design verification may be performed by

	couraged, it should not be construed that such verification constitutes the required independent design verification, ...	the originator's supervisor, if the supervisor is the only individual in the organization competent to perform the verification.
ANSI N45.2.23 (Section 2.3.1.3)	Certification of competence in engineering, sciences, or quality assurance specialties issued and approved by a State Agency, or National Professional or Technical Society, score two (2) credits.	ANO considers holders of NRC-issued Reactor Operator/ Senior Reactor Operator License to comply with the requirements of the section and may award two (2) credits to those individuals.

TABLE 2
QUALITY ASSURANCE PROCEDURES MATRIX

		ORGANIZATION	QA PROGRAM	DESIGN CONTROL	PROCUREMENT DOC CONT	INSTR PROC & DRAWINGS	DOCUMENT CONTROL	CONT OF PURCHASED ITEMS	IDENT OF CONTROL OF ITEMS	CONT OF SPECIAL PROCESSES	INSPECTION	TEST CONTROL	CONTROL OF M&TE	HAND STORAGE & SHIP	INSP TEST & OPER STATUS	NONCONFORMING ITEMS	CORRECTIVE ACTION	QA RECORDS	AUDITS
QAMO-FIGURES	ORGANIZATION CHARTS	X																	
OP-1000.001	ORGANIZATION AND RESPONSIBILITY	X																	
QAD-1	NUCLEAR QUALITY ORGANIZATION	X																	
QAD-2	INDOCTRINATION AND TRAINING OF QUALITY PERSONNEL		X																
OP-1000.015	STATION TRAINING PROGRAM		X																
QAD-3	DISTRIBUTION OF CONTROLLED NQ DOCUMENTS		X					X											
QAO-6	INTERNAL AUDITS		X																X
OP-1000.103	PLANT MODIFICATION PROCESS			X															
OP-5010.001	DCP DEVELOPMENT			X															
OP-1000.012	CONTRACT ADMINISTRATION				X			X											
OP-5010.006	DESIGN ENGINEERING PROCUREMENT REQUESTS				X														
OP-1033.005	CONTROL AND USE OF MATERIAL/REQUESTS PROCEDURE CONTROL				X														
OP-1000.006	PROCEDURE CONTROL					X	X												
OP-5510.100	DRAWING PREPARATION AND REVISION					X													
OP-1000.016	DOCUMENT CONTROL REQUIREMENTS						X												
OP-5010.015	CONTROL OF CALCULATIONS						X												
OP-5010.016	CONTROL OF SPECIFICATIONS						X												
OP-5010.017	CONTROL OF ENGINEERING REPORTS						X												
QAD-3	PREPARATION AND ISSUE OF NQ DOCUMENTS						X												
OP-1033.001	RECEIPT INSPECTION							X											
SQAP-07,02,03,04,05	VENDOR QUALIFICATION PROGRAM							X											
SQAP-07,01	VENDOR SURVEILLANCE							X											
OP-1033.002	CONTROL OF MATERIAL								X					X					
OP-5000.008	WELDING PROGRAM ADMINISTRATION									X									
OP-5000.009	REPAIR/REPLACEMENT PROGRAM ADMINISTRATION									X									
QCO-7	NDE (VT) EXAMINATION									X									
QCO-6	WELDING INSPECTION										X								
QCO-8	MAINTENANCE & MODIFICATION QC INSPECTION										X								
OP-1000.009	SURVEILLANCE TEST CONTROL											X							
OP-1092.028	ISI PROGRAM REQUIREMENTS											X							
OP-1000.014	CONTROL OF M&TE STANDARDS												X						
OP-1000-024	CONTROL OF MAINTENANCE														X				
OP-1000.027	HOLD AND CAUTION CARD CONTROL														X				
OP-1000-028	TEMPORARY MODIFICATION CONTROL														X				
OP-1000-104	CONDITION REPORTING AND CORRECIVE ACTIONS															X	X		
QAO-10	CORRECTIVE ACTION																X		
OP-1013.005	RECEIPT AND PROCESSING OF RECORDS																	X	
OP-5010.005	QUALITY ASSURANCE RECORDS MANAGEMENT																	X	
SQAP-18,04,07,09,10	VENDOR/CONTRACTOR AUDITS																		X
OP-1013.006	MICROGRAPHICS																	X	

TABLE 3

QUALITY PROGRAM POLICIES, PROCEDURES AND INSTRUCTION MANUALS LIST

1. Quality Assurance Manual Operations

The Quality Assurance Manual Operations establishes the policies and guidelines of the QA Program for ANO. This program is to be followed by all organizations involved in safety-related work applicable to ANO.

2. Overall Adminstrative Procedures

The Nuclear Organization employs a system of procedures designated as Overall Administrative Procedures (OP-1000.XXX or OP-6000.XXX series). These procedures implement the QA Program requirements and control safety-related activities. Overall Administrative Procedures and changes thereto are prepared by the responsible department, reviewed by the Plant Safety Committee and approved by the Vice President, Operations ANO. The procedures and revisions are also reviewed by a Supervisor, Quality Assurance to assure that the QA Program commitments are met. Review and approval of Quality administrative procedures is described in paragraph 4 below.

3. Departmental Procedures

Each department (excluding Quality) within the Nuclear Organization has developed procedures in support of the Overall Administrative Procedures and the QA Program. These procedures provide technical and administrative instructions to the respective departments to aid in implementing their responsibilities within the QA Program. Each Department Head is responsible to perform a review of their procedures to assure conformance with the QA Program.

Procedures required by the Technical Specifications are reviewed and approved as described in paragraph 5.3.2 of this manual.

4. Quality Procedures

The Quality Organization employs a system of procedures developed to assure proper implementation of the QA Program. These procedures provide technical and administrative instructions to the Quality staff to aid in implementing their responsibilities within the QA Program. These procedures are reviewed/approved by a Supervisor, Quality Assurance, Supervisor, Quality Control, or Supervisor, NDE and the Director, Nuclear Safety.

The Materials Requirements organization employs a system of procedures developed to assure implementation of their responsibilities within the QA Program. Materials Requirements management assures conformance with the QA Program.

APPENDIX A

QUALITY PROGRAM FOR TRANSPORT PACKAGES

1.0 INTRODUCTION

1.1 The quality program for transport packages containing radioactive material is designed to comply with the requirements of this manual and with the quality assurance guidelines identified in 10CFR71, Subpart H - Quality Assurance, subject to exceptions noted in Attachment A to this Appendix.

1.2 Attachment A to this Appendix identifies the applicability of each section of the Quality Assurance Manual Operations to the Quality Program for Transport Packages.

1.3 Attachment B to this Appendix contains the Quality Assurance Program Approval document which shows NRC approval of this program on August 20, 1991.

ATTACHMENT A

10CFR71 Appendix H

The following sections of the most currently approved revision of the QA Manual Operations will be applied as stated below (Note specific paragraphs are to revision 10 paragraph numbers which could change during subsequent revisions).

Section 1 - Applicable

Section 2 - Applicable

Section 3 - Not applicable. ANO will use only licensed packaging which has been designed under a QA program which has been submitted to the NRC for approval.

Section 4 - Applicable

Section 5 - Applicable

Section 6 - Applicable

Section 7 - Applicable

Section 8 - Generally applicable except for paragraph 8.2.2 and 8.2.3. Due to size, uniqueness, low volume and the method of supplier identification of each package, ANO tagging of each package is not necessary.

Section 9 - Not applicable. We do not consider this subject as a "Special Process" in the context of 10CFR71, Appendix H Section 71.119 which is a restatement of 10CFR50, Appendix B Criterion 9.

Section 10 - Applicable

Section 11 - Not applicable. ANO will not be testing the package in the context of 10CFR71, Appendix H, Section 71.123 which is a restatement of 10CFR50, Appendix B Criterion 11.

Section 12 - Generally applicable except for paragraph 12.3.4. This paragraph only applies to Radiation Protection and Radwaste measuring and testing equipment that is used to calibrate other devices (used as a standard). Radiation Protection and Radwaste survey equipment is response checked prior to each use.

Section 13 - Generally applicable except for paragraph 13.5. ANO does not "store" packages, therefore the storage section does not apply.

Section 14 - Not applicable. See Section 11 comments above.

Section 15 - Generally applicable except for references to the various types of dispositions in paragraphs 15.2.3 to 15.2.5. Nonconforming material or equipment will be returned to the vendor or will be replaced.

Section 16 - Applicable

Section 17 - Applicable

Section 18 - Applicable

NRC FORM 311
P-43

U. S. NUCLEAR REGULATORY COMMISSION

QUALITY ASSURANCE PROGRAM APPROVAL
FOR RADIOACTIVE MATERIAL PACKAGES

1. APPROVAL NUMBER: 0341
REVISION NUMBER: 6

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and Title 10, Code of Federal Regulations, Chapter 1, Part 71, and in reliance on statements and representations heretofore made in Item 5 by the person named in Item 2, the Quality Assurance Program identified in Item 5 is hereby approved. This approval is issued to satisfy the requirements of Section 71.101 of 10 CFR Part 71. This approval is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

2. NAME
Entergy Operations, Inc.

STREET ADDRESS
1448 S.R. 333

CITY: Russellville
STATE: AZ
ZIP CODE: 72801

3. EXPIRATION DATE
January 31, 2000

4. DOCKET NUMBER
71-0341

5. QUALITY ASSURANCE PROGRAM APPLICATION DATE(S)
August 7, 1991 and December 15, 1994

6. CONDITIONS

1. Activities conducted with regard to transportation packagings under applicable criteria of Appendix B to 10 CFR Part 50 authorized by this approval: procurement, maintenance, repair, and use. All other activities (i.e., design, fabrication, assembly, and modification) shall be satisfied by obtaining certifications from packaging suppliers that these activities were conducted in accordance with an NRC-approved Quality Assurance Program. It shall remain the responsibility of the Quality Assurance Program holder that all transportation activities meet the requirements of 10 CFR § 71.101.

2. Records describing activities affecting quality shall be retained for three years after the QA program ends, in accordance with 10 CFR § 71.91 and § 71.135.

UNITED STATES NUCLEAR REGULATORY COMMISSION

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

John P. Jankovich

John P. Jankovich
CHIEF, TRANSPORTATION BRANCH
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

January 18, 1995
DATE

APPENDIX B

QUALITY PROGRAM FOR FIRE PROTECTION

1.0 INTRODUCTION

1.1 The fire protection program was developed to define the organizational responsibilities, procedural controls, fire brigade staffing and training and the quality assurance provisions that have been established for the nuclear plant. The overall objective of the fire protection program is to minimize both the probability and consequences of postulated fires and to maintain the capability to safely shut down the plant if a fire should occur.

1.2 The scope of the fire protection program includes those fire protection and detection systems, and those structures and components (such as fire doors, fire dampers, and penetration seals) which, as identified in the plant's Fire Hazards Analysis Program Manual, are required to restrict the damage caused by a single exposure fire to safety-related equipment and equipment required to achieve and maintain safe plant shutdown to within those limits set forth in Section 1 of Appendix R to 10CFR50.

1.3 The quality program for fire protection is designed to comply with the requirements of this manual and with the quality assurance guidelines identified in BTP-APCSB 9.5-1, Rev. 2, July 1981, Guidelines for Fire Protection for Nuclear Power Plants, subject to exceptions noted in this Appendix.

1.4 With respect to regulatory commitments, ANO is committed to implementing the requirements of the following, subject to exceptions noted in this Appendix:

1. 10CFR50, Appendix A, General Design Criterion 3 - Fire Protection.

2. Specific sections of 10CFR50.48, Fire Protection and 10CFR50, Appendix R, Fire Protection for Nuclear Power Facilities Operating Prior to January 1, 1979. These sections are as follows:

III.G. Fire Protection Safe Shutdown Capability

III.J. Emergency Lighting

III.L. Alternative and Dedicated Shutdown Capability

III.O. Oil Collection System for Reactor Coolant Pumps

1.5 Other fire protection commitments are contained in the following references and documents:

1. Facility Operating License(s)

2. Safety Analysis Reports (SAR)

3. Fire Protection Safety Evaluation Reports (SER)

4. Regulatory correspondence to and from the NRC (includes applicable NRC generic letters and exemption letters for ANO).

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

2.0 ORGANIZATION

2.1 The organizational structure and responsibilities of key personnel associated with the administration, implementation and evaluation of the fire protection program are described in Section 1.0 of this manual and as follows:

1. The Vice President, Operations ANO is the management position which has the overall responsibility for the development, implementation and assessment of the effectiveness of the fire protection program. He reports directly to the Entergy Operations Executive Vice President and Chief Operating Officer.

2. The General Manager, Plant Operations is responsible for the overall administration and implementation of plant operations and training in accordance with the fire protection program. He reports directly to the Vice President, Operations ANO.

3. The Manager, Standards is responsible for the establishment and monitoring of fire prevention aspects of the program at the plant including control of combustibles, ignition sources and postings. The Manager, Standards reports directly to the General Manager, Plant Operations. The Manager, Standards is responsible for:

   (1) Implementing, maintaining and assessing the fire prevention aspects of the program as defined in plant procedures (combustible controls, fire watches and fire drills)

   (2) Developing inspection and surveillance criteria

   (3) Maintenance and revision of the Pre-Fire Plans

4. The Manager, Engineering Programs is responsible for monitoring and overviewing fire protection programs and design fire protection modifications. The Manager, Engineering Programs reports directly to the Director, Design Engineering. Under his direction are Fire Protection Engineers/Specialist/Technicians who are responsible for:

(1) Implementing, maintaining and assessing the fire protection aspects of the program as defined in plant procedures

(2) Performing fire protection evaluations

(3) Providing guidance and technical support to the nuclear plant in the area of fire protection

(4) Assuring that applicable regulatory requirements are included in the fire protection program

(5) Assuring design reviews for fire protection modifications are performed

(6) Assuring that evaluations/assessments of the fire protection program are performed and results reported to management

(7) Maintenance and revision of the Fire Hazards Analysis (FHA)

(8) Classification of F-list components for the Component Level F-list

(9) Coordinating insurer, NRC and other fire protection inspections.

(10) Assuring fire protection systems engineering functions are performed (suppression, detection, barriers, fire pumps and water supplies).

5. The Director, Nuclear Safety is responsible for assuring that the fire protection program is implemented in accordance with the QA Manual Operations, SAR and applicable procedures. This is accomplished by the performance of audits and other provisions of the QA Manual Operations. He shall assure that corrective action, when necessary, is taken. He reports directly to the Vice President, Operations ANO.

6. The Director, Nuclear Safety is also responsible for providing other responsible organizations with regulatory information and interpretations on regulatory issues related to fire protection. He is also responsible for providing interface with the NRC on fire protection matters, engineering evaluations and analysis of fire protection systems, as related to regulatory commitments and control of license-based documents relating to fire protection. He reports directly to the Vice President, Operations ANO.

7. The Director, Design Engineering is responsible for assuring that the technical requirements specified in the Operating License, Safety Analysis Report, and other design basis documents, with respect to fire protection, have been satisfied in design modifications and design documents affecting ANO.

3.0 QUALITY ASSURANCE PROGRAM

3.1 This quality program is to ensure that the fire protection systems for safety-related areas (as defined in paragraph 1.2 of this Appendix) are controlled in accordance with applicable NRC regulations, industrial standards and codes, policies, rules, procedures and licensing documents. The quality program is implemented through approved procedures. The effectiveness of the fire protection program is verified through surveillances and scheduled audits conducted by the Quality Organization, under the cognizance of the SRC. General requirements for this program are also described in subsections 2.4 through 2.7 of this manual, except that personnel performing inspections need not be certified to ANSI N45.2.6, when inspections are performed on equipment not listed on the Q-list.

3.2 Employees whose duties and responsibilities are related to this fire protection program at or in support of the nuclear plant are to participate in appropriate training programs to assure that suitable proficiency is achieved and maintained in the work they are performing.

3.3 Fire protection training for plant personnel is included as part of industrial safety in the General Employee Training Program. Personnel are periodically retrained in industrial safety in accordance with approved procedures. Personnel assigned to the plant Fire Brigade are to receive additional indoctrination and training to assure their capability to fight fires is established and maintained. The Manager, Training and Emergency Planning has the overall responsibility for these training programs.

4.0 DESIGN CONTROL

4.1 Section 3.0 of this manual is applicable for design control activities pertaining to the fire protection system.

5.0 PROCUREMENT DOCUMENT CONTROL

5.1 The control of procurement documents for fire protection-related materials, parts and components is described in Section 4.0 of this manual with the exception of paragraph 4.2.3, when these items are not associated with the Q-list. The procurement document is to include the requirement that items be U.L. listed or F.M. approved for fire protection use, where applicable, in accordance with approved procedures.

6.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

6.1 Inspections, tests, administrative controls, fire drills and training that govern the fire protection program are prescribed by documented instructions, procedures and drawings and are accomplished in accordance with these documents. Instructions, procedures and drawings are prepared, reviewed, approved and revised in accordance with approved procedures.

7.0 DOCUMENT CONTROL

7.1 Section 6.0 of this manual is applicable for the control of quality program documents related to fire protection.

8.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

8.1 The control of purchased fire protection-related materials, equipment and services is described in Section 7.0 of this manual, with the following exception related to subsections 7.2, 7.3 and 7.5. For the procurement of fire protection-related items or services not associated with the Q-list, the vendor/contractor qualification criteria (including periodic reassessment of their program) is not required. Nonconformances dispositioned repair or use-as-is by the vendor are to be submitted to and accepted by ANO only when so designated on the procurement document.

9.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

9.1 Section 8.0 of this manual is not applicable for the identification and control of materials, parts and components related to the fire protection system. No particular requirements for this section have been identified in BTP-APCSB 9.5-1, Rev. 2. The identification and control of materials, parts and components are conducted in accordance with existing procurement and materials management procedures and practices.

10.0 CONTROL OF SPECIAL PROCESSES

10.1 Section 9.0 of this manual is not applicable for the control of special processes, as applicable to fire protection systems. No particular special process controls have been identified by BTP-APCSB 9.5-1, Rev. 2. The control of special processes for the maintenance of the fire protection system is performed in accordance with applicable approved procedures and practices.

11.0 INSPECTION

11.1 Inspection activities applicable to the fire protection system are described in Section 10.0 of this manual with the exception of paragraphs 10.2.2 and 10.3.2.3, when inspections are performed on equipment not associated with the Q-list. The Regulatory Guides referenced in paragraph 10.2.2 are not applicable to the fire protection system. Individuals outside the Quality Organization who perform inspections only need to meet paragraphs 10.3.2 and 10.3.2.1.

In addition to the provisions of this manual, inspections and surveillances are addressed in applicable portions of the SAR for each nuclear unit.

12.0 TEST CONTROL

12.1 A test program is to be established and implemented to ensure that testing is performed and verified on applicable systems and components to demonstrate conformance with design and system readiness requirements. The tests are to be performed in accordance with written test procedures and test results evaluated for conformance to the test objectives.

12.2 The control of testing activities is described in Section 11.0 of this manual. Surveillance testing requirements are identified in the Safety Analysis Report for each nuclear unit.

13.0 CONTROL OF MEASURING AND TEST EQUIPMENT

13.1 Section 12.0 of this manual is not applicable for the control of measuring and test equipment. No particular measuring and test equipment controls have been identified in BTP-APCSB 9.5-1, Rev. 2. Measuring and test equipment is controlled in accordance with applicable approved procedures and practices.

14.0 HANDLING STORAGE AND SHIPPING

14.1 Section 13.0 of this manual is not applicable for the handling, storage and shipping of fire protection-related materials and equipment. No particular requirements for this section have been identified in BTP-APCSB 9.5-1, Rev. 2. Handling, storage and shipping activities are controlled in accordance with applicable approved procedures and practices.

15.0 INSPECTION, TEST AND OPERATING STATUS

15.1 Measures are established to provide for the identification of items that have satisfactorily passed required inspections and tests and are documented per approved instructions or procedures.

15.2 Section 14.0 of this manual is applicable for identifying the inspection, test and operating status of the fire protection system.

16.0 NONCONFORMING MATERIAL, PARTS AND COMPONENTS

16.1 The control of nonconforming materials, parts and components related to the fire protection system is described in Section 15.0 of this manual, with the exception of subsection 15.3, when the item is not associated with the Q-list. Vendor nonconformances are to be submitted to ANO only when so designated on the procurement document.

17.0 CORRECTIVE ACTIONS

17.1 A corrective action system is established to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible materials and nonconformances, are promptly identified, reported and corrected.

17.2 Corrective action activities are controlled as described in Section 16.0 of this manual, with the following exception related to subsection 16.3. Vendors furnishing fire protection items not associated with the Q-list are not required to be listed on the QSL.

18.0 QUALITY ASSURANCE RECORDS

18.1 Records which furnish evidence that the criteria enumerated in this program are being met for activities affecting the fire protection program are to be prepared and maintained as described in Section 17.0 of this manual.

19.0 AUDITS

19.1 Audits are to be conducted and documented to verify compliance with the fire protection program, including design and procurement documents, instructions, procedures and drawings and inspection and test activities. Section 18.0 of this manual is applicable for the control of audits related to the fire protection program.

19.2 As a minimum, the following audits of the fire protection program are to be scheduled at the indicated frequencies:

a. The Facility Fire Protection Program and implementing procedures at least once per 24 months.

b. An independent fire protection and loss prevention program inspection and audit shall be performed at least once per 12 months utilizing either qualified off-site licensee personnel or an outside fire protection firm.

c. An inspection and audit of the fire protection and loss prevention program shall be performed by a qualified outside fire consultant at least once per 36 months.