CPC-1-A

QUALITY ASSURANCE

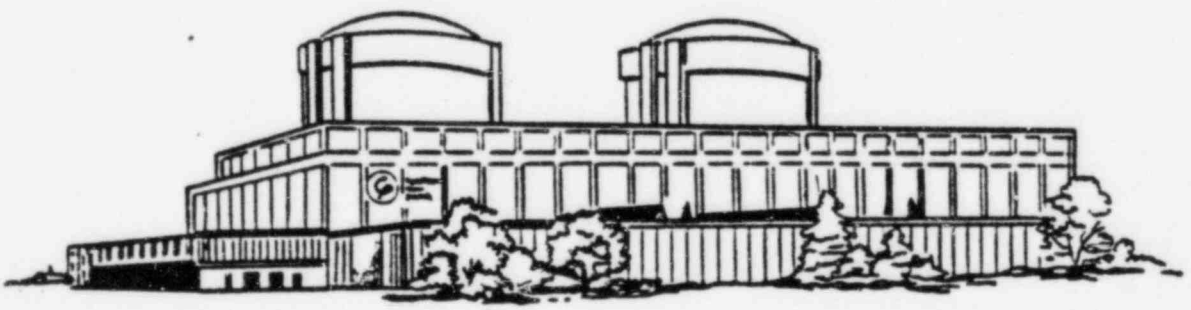
PROGRAM MANUAL

FOR

THE MIDLAND NUCLEAR PLANT

VOLUME I

INFORMATION ONLY



Consumers Power Company

☐ CONTROLLED

☒ UNCONTROLLED

ASSIGNED TO: _____

MANUAL NO: _____

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

MAR 14 1983

Mr. James W. Cook, Vice President
Projects, Engineering, & Construction
Consumers Power Company
1945 West Parnall Road
Jackson, MI 49201

Dear Mr. Cook:

SUBJECT: NRC ACCEPTANCE OF REVISED CONSUMERS POWER COMPANY'S QUALITY ASSURANCE TOPICAL REPORT

Your letter of February 14, 1983 to H. Denton submitted a Revision 13 of Consumers Power Company's (CPCo) topical report, CPC-1A, "Quality Assurance Manual for the Midland Nuclear Plant, Volume I," for staff review and approval. CPC-1A, Revision 13 revises the topical report to reflect the delegation of responsibility and authority of the Midland plant quality control inspection function to the CPCo Midland Project Quality Assurance organization and other minor changes.

Based on our evaluation of the proposed changes described in CPC-1A, Revision 13, we find that your revised topical report continues to meet the criteria of Appendix B to 10 CFR Part 50. Therefore, your revised topical report is acceptable, and you may implement it upon issuance of the revision. We do not intend to repeat our review of this topical report when it is referenced in an application unless changes occur in our acceptance criteria.

To us the topical report in future license applications, CPCo need only reference this topical report in Section 17 of the Safety Analysis Report. In addition, this QA program may be implemented immediately on all ongoing activities. In this regard, identify in your transmittal letter those nuclear power plants that will be covered by CPC-1A, Revision 13.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. Changes by CPCo to this topcial report are to be submitted to NRC in accordance with the recent NRC rule for reporting changes to the QA program published in the Federal Register dated January 10, 1983. Please include a copy of this letter in your report, renumber the report CPC-1A, Revision 13, and resubmit 36 copies.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact Mr. John Gilray on 301/492-9592.

Sincerely,

Walter P. Haass /jm

Terry L. Harpster, Chief
Quality Assurance Branch
Division of Quality Assurance,
Safeguards, and Inspection Programs
Office of Inspection and Enforcement

AUTHORITY AND RESPONSIBILITY

Consumers Power Company

. D Selby
Chairman of the Board and President

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • (517) 788-1600

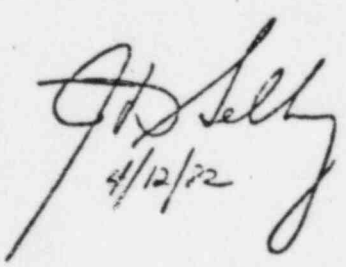
SUBJECT: Statement of Authority and Responsibility Regarding the Consumers Power Company Quality Assurance Program for the Midland Nuclear Plant

Consumers Power Company has documented its Quality Assurance Program for the Midland Nuclear Plant in a corporate manual entitled, Consumers Power Company Quality Assurance Program Manual for the Midland Nuclear Plant. This manual outlines the actions that are implemented by Consumers Power Company personnel during design, procurement, construction, and testing of the safety-related portions of the Midland Nuclear Plant.

The Consumers Power Company Quality Assurance Program for the Midland Nuclear Plant complies with the Quality Assurance Requirements contained in Appendix B of 10CFR50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" and responds to the additional guidance contained in the ANSI N45.2 series of standards and corresponding Regulatory Guides.

As Chief Executive Officer of Consumers Power Company, I have the ultimate management authority for the establishment of corporate QA policy. That policy shall be to comply with the provisions of applicable legislation and regulations and to commit to the requirements stated in the previous paragraph. Authority for the establishment of specific individual Quality Assurance Program Policies to comply with this overall policy is assigned to the Vice President - Projects, Engineering and Construction for the design and construction phases. Authority for the preparation of specific Quality Assurance Program Procedures by which to implement these Policies is assigned, in turn, to the Director, Environmental and Quality Assurance who reports to the Vice President - Projects, Engineering and Construction.

The Quality Assurance Program Policies and Procedures are mandatory requirements which must be implemented and enforced by all responsible organizations and individuals.



APPROVALS

Vice President - Projects, Engineering & Construction — James W. Cook — Date 2/11/83

Vice President - Nuclear Operations — D. B. Miller — Date 2/14/83

Vice President - General Services — Stephen D. Powell (for R. C. Lincoln) — Date 2-14-83

Vice President - System Operations — A. T. Hirs — Date 2-15-83

QUALITY ASSURANCE PROGRAM POLICY INDEX

VOLUME I MANUAL REVISIONS APPROVED BY REVISION
TWELVE TO THE CONSUMERS POWER COMPANY TOPICAL REPORT

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INTRODUCTION

The Consumers Power Company Quality Assurance Program Manual for the Midland Nuclear Plant consists of policies and procedures which comply with current NRC regulatory requirements and industry codes and standards in effect during design, procurement, construction and preoperational testing of the Plant. Specific NRC and industry documents that contain the requirements, including the issue dates in effect, are identified in the Midland Nuclear Plant's Safety Analysis Report. The requirements established by these documents form the basis for the Consumers Power Company Quality Assurance Program, which is implemented to control those structures, systems and components listed in the Plant's Quality List (Q-List). As additional and revised requirements are issued by the NRC and professional organizations involved in nuclear activities, they will be reviewed for their impact on this Manual, and changes will be made where considered necessary.

CPC-1-A - Consumers Power Company QA Program Topical Report is Volume I of this Manual and contains Quality Assurance Program Policies applicable during the Plant's design and construction and preoperational testing activities.

CPC-2-A - Consumers Power Company QA Program Description for Operational Nuclear Power Plants describes the Quality Assurance Program for the operation phase of the Midland Nuclear Plant including plant modifications.

The initial nuclear fuel procurement activities for the Midland Nuclear Plant were performed under the requirements of CPC-1-A. Since these activities are now complete, no reference to them is made in this revision. All future fuel procurement activities will be performed under CPC-2-A.

Spare parts procurement by the Midland Plant Technical Department is conducted in accordance with the provisions of the Midland Plant Administrative Procedures which were developed to address the requirements of CPC-1-A, Revision 11. These procedures are currently being revised to meet the requirements of CPC-2-A. Quality assurance for this activity is the responsibility of the Quality Assurance - Nuclear Operations Department as described in CPC-2-A.

The "BASIS DOCUMENTS" listed in each policy identifies the specific codes, NRC regulatory requirements, and industry standards related to each of the eighteen (18) criteria contained in NRC Document 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants. Each Quality Assurance Program Policy defines the action that will be taken by Consumers Power Company or its Suppliers in response to the basis documents, and assigns responsibility for these actions to individuals or organizational units within the Company or to Suppliers. The Quality Assurance Program Policies are approved by the Vice Presidents in charge of the organizations responsible for their implementation. The Director - Environmental & Quality Assurance is responsible for the preparation, acquisition of approvals, distribution and revision of the Quality Assurance Program Policies.

INTRODUCTION

Volume II of the Manual contains a series of Quality Assurance Program Procedures that describe how the commitments made in the individual Quality Assurance Program Policies are implemented. Each Quality Assurance Program Procedure identifies the organizational element responsible for a specific activity and the method of accomplishing that activity. The Quality Assurance Program Procedures are approved by the heads of the Consumers Power Company interfacing departments responsible for their implementation. The Director - Environmental & Quality Assurance is responsible for preparation, acquisition of approvals, distribution and revision of the Quality Assurance Program Procedures for Design and Construction.

The specific action taken by each Consumers Power Company Department to implement the requirements identified in the Quality Assurance Program Procedures is detailed in Consumers Power Department, Plant, Section or Unit Procedures. These working level procedures are prepared, maintained, controlled, issued, and implemented by the Departments, Sections, and Units responsible for implementing the Quality Assurance Program.

LIST OF DEFINITIONS

The following terms are used in the Quality Assurance Program Policies. Definitions contained in ANSI N45.2.10, "Quality Assurance Terms and Definitions," are not repeated in this section. Additional definitions related to the associated Quality Assurance Program Procedures are defined in the individual procedures.

Adjustment - Operational alterations performed on an item of test equipment prior to its use which affect its output, but which do not constitute calibration checks.

Approved Bidder - A Supplier who, by his past record or present Quality Assurance capabilities, is qualified to supply products or services to Consumers Power Company.

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

Auditor - One qualified to examine Quality Assurance practices and verify whether requirements are being met.

Balance of Plant - Nuclear power plant items and equipment not designed, furnished or installed as a part of the Nuclear Steam Supply System or its auxiliary systems.

Basis Documents - Those NRC and industry documents which contain the requirements that form the basis for the Consumers Power Company Quality Assurance Program.

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

Calibration - Comparison of an item of measuring and test equipment (M&TE) with a reference standard or item of M&TE of closer tolerance to detect and quantify inaccuracies and to report or eliminate those inaccuracies by adjustment.

Calibration Standard - Any object or equipment which is used as a known reference or standard against which another piece of test equipment is calibrated.

Certified Personnel - Personnel whose qualifications have been attested to in writing.

Code - A recognized written standard or collection of rules or practices for using or processing materials, or for the skill involved in use or processing.

LIST OF DEFINITIONS

Construction Phase - Activities at the building site necessary to erect and verify proper installation and performance of nuclear power plant facilities prior to initial fuel loading.

Construction Tests - Those tests necessary to verify that the installation of systems is complete and complies with the applicable specifications, standards, codes, drawings and engineering information. It includes tests such as: Hydrostatic testing, meggar testing, continuity testing and cleanliness testing.

Contract - A document for the procurement of services which describes the technical and Quality Assurance requirements by inclusion, reference or attachment.

Corrective Action - Action taken to correct and preclude recurrence of significant conditions adverse to the quality of items or operations.

Corrective Maintenance - Maintenance performed to correct an abnormal or incorrect situation, such as the replacement of a faulty relay.

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

Design Criteria - Statements of the form, function, and interface requirements within well-defined limitations.

Design Documents - Documents furnishing evidence of the quality of the design of structures, systems or components. Includes such documents as drawings, system descriptions, specifications, standards, material lists, technical manuals, design calculations, and design analyses.

Design Input - Those criteria, parameters, bases and other requirements upon which the detailed final design is based.

Design Phase - Procurement, licensing and design activities from project initiation to initial fuel loading.

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

Design Review - Critical review of the design in order to provide assurance that the actions leading to the design output, such as drawings, calculations, analyses, and specifications have been satisfactorily performed and the information included in the design output is correct.

LIST OF DEFINITIONS

Document - Instructions, procedures, drawings or other instructional-type manuals or material directly affecting a quality or safety-related activity.

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

Hold Point - A checkpoint in a sequential operation at which certain data are taken, inspections made, or approval required before the next sequential step can be taken.

Hot Functional Tests - Tests conducted at completion of preoperational tests. The nuclear steam supply systems and auxiliary systems where possible are brought to rated temperature and pressure to demonstrate satisfactory performance.

Inspection - Characteristic by characteristic, or step-by-step comparison of the "as required" versus "as is" condition by observation or direct measurement for the purpose of making a determination as to the acceptability or unacceptability of the item or activity under evaluation.

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

Interface Control - Methods to assure that proper interaction and communications are effected for activities. Also includes consideration that components and structures are geometrically and functionally compatible and that materials are compatible with both process and environment.

Maintenance - Tests, calibration, adjustments and repairs performed in order to keep equipment, components, or systems in satisfactory operating condition.

Measuring and Test Equipment (M&TE) - Devices or systems used to calibrate, measure, gage, inspect or control in order to acquire research, test or operational data; to determine compliance with design, specifications or technical requirements. M&TE does not include permanently installed operating equipment or test equipment used for preliminary checks where absolute accuracy is not required; ie, circuit checking multimeters, etc.

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

Nonconformance - A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate and which is considered significant to quality or safety. Examples include: Physical defects,

test failures, incorrect or inadequate documentation, or deviation from prescribed processing, inspection, or test procedures.

Nondestructive Testing (NDT) - The determination of the performance capabilities for materials, components, structures, or systems by measurement without imparing their usefulness.

Nuclear Fuel - Nuclear fuel assemblies designed and constructed by a nuclear fuel fabricator and suitable for use in a nuclear steam supply system and the associated depleted, natural or enriched uranium nitrate or uranium hexafluoride and plutonium nitrate or plutonium oxide supplied or to be supplied to the nuclear fuel fabricator for the construction of nuclear fuel assemblies.

Nuclear Steam Supply System (NSSS) - That portion of the nuclear power plant which provides steam from nuclear heat. It includes reactor, its control systems, main coolant and steam generation systems, fuel handling equipment, emergency core cooling system and other safeguards, associated electrical equipment, instrumentation, and spent fuel handling.

Operations Phase - That phase in the life of a nuclear power plant which receives coverage under the QA Program for Operations. It normally begins at core loading and continues until decommissioning. Administrative Controls for the PE&C/ES interfaces prior to core loading are normally identified in a Project Test Program Manual.

Preoperational Tests - Testing prior to initial fuel loading and plant operation to demonstrate the capability of structures, systems and components to meet performance requirements.

Principal Suppliers - Those organizations from whom Consumers Power Company has procured equipment, materials or services.

Procured Items - Purchased materials, equipment or services including design and technical services.

Procurement Documentation - Purchase Requisitions (PRs), Purchase Orders (POs), Local Purchase Orders (LPOs), Return Material Requests (RMRs), drawings, contracts, specifications and instructions used to define requirements for the purchase of materials, equipment and services.

Purchase Requisition - The basic document describing material, equipment or services for which a specific procurement action is necessary. For services, the purchase requisition serves as a transitional document to initiate a purchase order that references the contract.

LIST OF DEFINITIONS

Quality Assurance Program Policies - A series of individual documents that establish requirements and assign responsibilities for implementing elements of the Consumers Power Company Quality Assurance Program for the Midland Nuclear Plant. The Policies provide Management direction for complying with applicable regulatory requirements, industry codes and standards, and Corporate policies and instructions. The Policies are approved for issue and implementation by the affected Consumers Power Company Vice Presidents, Executive Managers or Executive Directors.

Quality Assurance Program Procedures - A series of individual documents that define the interdepartmental relationships and responsibilities among those departments involved in implementing the Consumers Power Company Quality Assurance Program for the Midland Nuclear Plant. The Procedures are approved for issue and implementation by the affected Consumers Power Company Department Managers or Directors.

Quality Assurance Record - Those records which furnish documentary evidence of the quality of items and of activities affecting quality.

Quality List (Q-List) - A list of safety-related structures, systems, components, and activities designated by Consumers Power Company to receive coverage under the Consumers Power Company Quality Assurance Program. The Q-List is prepared and maintained for each plant.

Quality-Related Activity - Any task performed on safety-related items during the design, construction, or maintenance of a nuclear power plant that affects quality.

Reference Standards - Standards of the highest accuracy in a calibration program. These standards establish the basic accuracy limits for that program.

Request for Bid - Invitation to bid on a specific task made to Supplier of materials, goods or services.

Safety-Related - The term applied to:

Structures, systems, components, materials, services or activities named on the Q-List as necessary to assure:

1. The integrity of the reactor coolant pressure boundary.

2. The capability to shut down the reactor and maintain it in a safe condition.

3. The capability to prevent or mitigate the consequences of an accident which could result in potential offsite exposures to individuals in excess of exposures specified in 10 CFR 100.

LIST OF DEFINITIONS

Secondary Standard - An item of measuring and test equipment (M&TE) used to calibrate other M&TE. They are periodically calibrated using Reference Standards and reserved for use in the calibration of working plant or field M&TE.

Section - A subdivision of a department, usually made along lines of a technical specialty; eg, Nuclear Licensing, Health Physics, Nuclear Fuel, etc.

Services - Work performed by an organization or department having no deliverable hardware type end item other than the results of construction, modifications, repairs, inspections, audits, reviews, etc.

Source Inspection - Inspection of an item at a Supplier's facility during its manufacture, or at completion of manufacture, to verify implementation of the procurement requirements.

Spare Part - An item available for replacement for an item in use.

Special Nuclear Material (SNM)

1. Plutonium, Uranium 233; uranium enriched in the Isotope 233 or in the Isotope 235; and any other material which the NRC, pursuant to the provisions of Section 51 of the Atomic Energy Act of 1954 as amended, determines to be special nuclear material, but does not include source material; or

2. Any material artificially enriched by any of the foregoing, but does not include source material.

Special Process - Those metallurgical, chemical, or other processes where assurance of the process activity is dependent on the use of qualified procedures, personnel, or equipment; and where assurance of quality cannot be by direct inspection of the in-process activity or final product. These include, but are not limited to, welding, heat-treating, NDE and environmental testing of the work process.

Start-Up Tests - Precritical tests, criticality tests, low-power tests and power ascension tests, all performed after each fuel loading or refueling.

Supplier - Any individual or organization who furnishes equipment, materials or services. It includes the terms: Vendor, Seller, Contractors, Subcontractor, Fabricator, Consultant and lower tier levels of these, where appropriate.

Surveillance - Verification of the implementation of administrative controls through review of documentation and/or of work activities.

Test - An activity for determination of the physical and functional properties of items or systems.

LIST OF DEFINITIONS

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

Traceable Calibration Standards - Standards having a known valid relationship to nationally recognized standards or accepted values of natural physical constants. If no national standard exists, the basis for calibration is documented.

ORGANIZATION

1.0 GENERAL

The President and Chief Executive Officer of Consumers Power Company is responsible for the safe and efficient construction of its nuclear power plants. Consumers Power Company retains responsibility for the Quality Assurance Program although it may delegate to its Principal Suppliers, the establishment and implementation of certain portions. Authority to develop and implement the Quality Assurance Program for the design & construction of the Midland Nuclear Plant is assigned by the President, to the Vice President - Projects, Engineering and Construction.

Responsibility is further assigned by:

a. The Vice President - Projects, Engineering and Construction

(1) For the development and implementation of the Quality Assurance Program for the Midland Nuclear Plant Project, as follows:

(a) Midland Project Office consisting of the Vice President - Projects, Engineering and Construction assisted by the Midland Project Manager, and three Executive Managers, and reporting to the Midland Project Office:

Manager - Safety and Licensing

Manager - Design Production

Manager - Administrative

Site Manager

(b) Executive Manager - Midland Project Quality Assurance (MPQA) who is a member of the Midland Project office and reporting to him:

Manager - MPQA

Superintendent - Quality Control - Balance of Plant (ie, other than Soils and HVAC)

Superintendent - Quality Assurance - Soils

Superintendent - Quality Assurance - HVAC

Superintendent - Quality Assurance - Balance of Plant (ie, other than Soils and HVAC)

Section Head - Administration and Training

(c) Director - Environmental & Quality Assurance and reporting to him:

Section Head - Audit & Management Systems

(d) Executive Manager - Transmission & Department Services and reporting to him:

Manager - Electric Transmission - Engineering & Construction

b. The Executive Vice President - Energy Supply

(1) For providing quality-related support during design and construction, of the Midland Nuclear Plant to personnel reporting to him, as follows:

(a) Vice President - System Operations and reporting to him:

Executive Manager - Production & Transmission and reporting to him:

Manager - System Protection and Laboratory Services

b) Vice President - Nuclear Operations and reporting to him

Director - Quality Assurance Nuclear Operations

(c) Director - Management and Budget (Management Services)

c. The Executive Vice President - Region Operations, Energy Distribution, Customer Services and General Services

(1) For providing quality-related support during design and construction of the Midland Nuclear Plant, in the areas of procurement and graphic services, as requested, and to personnel reporting to him, as follows:

(a) Vice President - General Services and reporting to him:

Director - Purchasing

Director - Property Protection

Manager - Administrative Services

The organization relationship of these positions is shown in Figures 1, 2, 3, and 4.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 1, "Organization"

b. ANSI N45.2, Criterion 3, "Organization"

3.0 POLICY

3.1 PROJECTS, ENGINEERING & CONSTRUCTION ORGANIZATIONAL RESPONSIBILITIES

3.1.1 Midland Project Management Organization

Consumers Power Company has established a project management organization to provide effective management of the Midland Nuclear Plant Project. The Midland project management organization is shown in Figure 5. The project management organization is headed by the Midland Project Office consisting of the Vice President - Projects, Engineering and Construction assisted by the Midland Project Office team. The Site Management Office is headed by a Site Manager assisted by the Assistant Site Manager/Plant Superintendent. The Site Management Office organization is shown in Figure 6. The Vice President - Nuclear Operations provides staff guidance on operational activities until fuel load. At the time of fuel load, the Vice President - Nuclear Operations is assigned responsibility for the Midland Site Management Office and the Plant Superintendent becomes the head of the Site Management Office.

The Vice President - Projects, Engineering and Construction will continue to have direct responsibility for completing all engineering and construction activities required to complete the Plant but will work through the Site Management Office in a staff capacity after fuel load.

The Midland Project Office has overall responsibility for all activities related to the Midland Nuclear Plant (until all major construction activities are complete) including design and procurement (except nuclear fuel); construction; licensing; permits; preoperational, hot functional and initial start-up testing; quality assurance, budgeting, contracts, cost and schedule and operations. These responsibilities include coordination of the activities between the Architect-Engineer, Constructor, Nuclear Steam Supply System Supplier, and other suppliers and Consumers Power Company departments. Within the Midland project management organization, Consumers Power Company overall design

activities rest with the Design Production Manager; licensing activities with the Manager of Safety and Licensing; construction and testing activities on site with the Site Management Office; cost and schedule activities with the Schedule and Cost Manager; budgeting, contract administration and records management activities with the Administrative Manager.

3.1.2 Midland Project Quality Assurance Department (MPQAD)

MPQAD is responsible for establishing quality assurance standards for design and construction consistent with Consumers Power Company objectives, and for assuring the establishment and implementation of policies and procedures to meet these standards.

In performing their assurance-type responsibilities, MPQAD personnel have no responsibility for cost or scheduling effects of their findings; have the authority and organizational freedom to identify assurance-related problems, initiate, recommend or provide corrective action and verify implementation of corrective action; and are independent from the individuals or groups performing the activities being inspected, tested or audited. Additional assurance-related activities, as given below, are assigned to MPQAD for work performed either by Consumers Power Company or by Principal Suppliers, major subcontractors and subtier suppliers, or the activities may be delegated to a Principal Supplier's corresponding organization. The decision as to whether or not these activities are to be delegated shall be made with the mutual concurrence of both the Midland Project Office and MPQAD. Nevertheless, MPQAD retains authority and responsibility for these activities and for assuring their adequate and timely accomplishment. The objective of the assignment of authorities and responsibilities to MPQAD is to yield a total assurance program resulting in the attainment of a facility which is designed in accordance with its design basis criteria and which is constructed in accordance with its drawings and specification requirements.

Following is a more detailed discussion of the responsibilities of the Midland Project Quality Assurance Department. Figure 7 shows the Department organization.

The Midland Project Quality Assurance Department is responsible for:

a. During the design activity:

(1) Assuring that appropriate Quality Assurance standards are applied to the design process;

(2) Assuring that the design process is conducted in accordance with approved procedures; and

(3) Assuring the maintenance and reporting of hardware design quality and corrective action status.

b. During the hardware and services procurement activities (excluding spare parts procurement):

(1) Establishing supplier Quality Assurance requirements;

(2) Performing preaward supplier evaluations for Quality Assurance and quality control activities;

(3) Preparing and implementing plans and procedures for procured item inspections, nondestructive examinations and tests (within the Department's jurisdiction);

(4) Evaluating and, when necessary, approving supplier Quality Assurance related documentation;

(5) Determining the acceptability or nonacceptability of hardware items; and

(6) Maintaining and reporting hardware procurement quality and corrective action status.

c. During the installation and construction activity:

(1) Preparing and implementing plans and procedures for the inspections, nondestructive examinations and tests (other than checkout and functional tests for the establishment of inservice baselines) for installed items and determining the acceptability or nonacceptability of the items;

(2) Identifying inspection and examination problems and test problems (within the Department's test jurisdiction), and causing their timely and adequate correction;

(3) Participating in the resolution of hardware and systematic nonconformances (which are within the jurisdiction of the Department) and obtaining process corrective action;

(4) Assuring that nonconforming items are properly dispositioned;

(5) Maintaining and reporting quality and corrective action status; and

(6) Assuring the effectiveness of primary quality control activities and the conformance of all construction and installation activities to the established Program Procedures.

d. Prior to the performance of preoperational, hot functional and functional inservice baseline tests, directly verifying the accomplishment of quality-related construction prerequisites and signing off on each such prerequisite to signify:

(1) That there has been a turnover acceptance of the test unit(s);

(2) That each nonconformance and deficiency, both preturnover and post-turnover, has been identified;

(3) That each such nonconformance and deficiency has been adequately dispositioned;

(4) Contributing to the identification of Plant quality status by transmitting Midland Quality Assurance Department originated NCRs to the Technical Superintendent for their incorporation into the overall Plant status accounting system; and

(5) Assuring the maintenance and reporting of test quality and corrective action status.

e. During the checkout, preoperational test, hot functional test and functional inservice baseline test activities:

(1) Reviewing the Project Testing Program Manual with respect to compliance with the Quality Assurance Program and annotating satisfactory completion of such review by a concurrence signature;

(2) Auditing the individual preoperational, hot functional and functional inservice baseline test procedures, jointly or in coordination with, Audit and Management Systems and Quality Assurance - Nuclear Operations to assure:

(a) The preparation of procedures in compliance with the requirements of 10 CFR 50, Appendix B, ANSI N45.2, Quality Assurance related Regulatory Guides, Codes and Standards, and Consumers Power Company procedures;

(b) The establishment of quality-related prerequisites for the performance of each test; and

(c) The adequacy of the data collection format and content relative to the needs of the Quality Assurance Program regarding quality records.

(3) Preparing and implementing procedures for the inspection, nondestructive examination, tests (within the Department's test jurisdiction) and test verification for preventive and corrective maintenance activities; and

(4) Reviewing Corrective Action Requests for adequacy of disposition and need for further quality statusing or additional part or process corrective action.

f. At any time, prior to or during the performance of the preoperational and hot functional tests and other prerequisites, signifying the prerequisites actually audited by the application of a Midland QA Department signature for each such prerequisite.

g. During the performance of the checkout and preoperational and hot functional tests, and functional inservice baseline tests, evaluating compliance with test procedures on an audit and surveillance basis, signifying the test procedural steps actually audited and surveilled by the application of Midland QA Department signatures adjacent to those steps.

h. Throughout all activities:

(1) Evaluating the implementation of the Quality Assurance Program and recommending improvements;

(2) Issuing "Stop Work Order" at any time that Quality Assurance Program commitments are violated if necessary to preclude a safety risk;

(3) Performing quality audit, as requested;

(4) Maintaining a trend program to identify adverse repetitive quality conditions;

(5) Maintaining a tracking program to assure all quality-related action items from NRC inspections, 50.55(e) items, etc, are scheduled and completed;

(6) In accordance with Title 10 of the Code of Federal Regulations, Part 21 and 50.55(e), making the determination as to the need to report any nonconformances and test deficiencies to the NRC and reporting them;

(7) Reviewing and concurring with other Departmental Program Procedures (Midland Specific) which are quality related;

(8) Participating in problem resolution to assure that part and process corrective action are appropriate and are implemented in a timely manner;

(9) Preparing responses to NRC Construction I&E Reports (except for those relating to preoperational, hot function and initial start-up testing which are handled by the Site Management Office); and

(10) Preparing 50.55(e) reports.

3.1.3 Environmental & Quality Assurance

Within E&QA, there is one section with quality assurance responsibilities for the Midland Project - namely: The Audit & Management Systems Section (A&MS). Figure 8 depicts this organization. A&MS is responsible for:

a. Performing audits of activities which may impact design and construction quality for the Midland Nuclear Plant. More specifically, for:

(1) Evaluating the adequacy of quality policies and procedures;

(2) Evaluating the degree of compliance with quality policies and procedures;

(3) Obtaining corrective action, as necessary, based on audit findings;

NOTE: Items (1), (2), and (3)above, apply to primary suppliers as well as to "in-house" activities.

b. Performing E&QA departmental administrative functions, especially with regard to budgets, and other special assignments;

c. Coordinating with MPQA Administrative and Training to provide Quality Assurance education, the Quality Assurance Program Manual training and indoctrination;

d. Preparing, releasing and controlling inter- and intra-departmental quality-related policies and procedures; and

e. Issuing "Stop Work Orders" at any time that Quality Assurance Program commitments are violated, if necessary to preclude a safety risk.

3.1.4 Transmission and Department Services

The Executive Manager - Transmission and Department Services is responsible for the Electric Transmission - Engineering which is responsible for the Engineering Records Center.

The Engineering Records Center's nuclear Quality Assurance responsibilities for the Midland Project are the collection, microfilming, storage, maintenance, control and distribution of Plant drawings and specifications. Figure 9 shows the Department organization.

3.2 SUPPORT ORGANIZATIONS FOR DESIGN AND CONSTRUCTION PHASE

3.2.1 Purchasing Department

The Purchasing Department reporting relationship is shown in Figure 2. The Director - Purchasing, who reports to Vice President - General Services, is responsible for procuring requested materials, equipment and services in accordance with approved specifications and from approved Principal Suppliers.

3.2.2 System Protection and Laboratory Services Department (SP&LS)

The SP&LS reporting relationship is shown in Figure 10. The Manager of SP&LS is responsible through the Executive Manager - Production and Transmission to the Vice President - Systems Operations for providing quality-related support in the following areas:

Design of the electrical protection of the power plants and determines the settings for the electrical protective equipment systems and relay control systems of the Midland Nuclear Plant.

Checkout and testing service for electrical equipment and controls, plant metering, telemetering and protective devices for the turbine/generator and its auxiliary systems to the project test group during the construction phase of the Midland Nuclear Plant.

Conducting periodic maintenance testing of electrical protective equipment (down to but not including 480 volt switchgear) and applying setting changes (including 480 volt switchgear) and providing

technical assistance, as required, in such areas as generator electrical tests, telemetering, supervisory control systems, etc.

Controlling the Company's Echelon II (Reference and Secondary Standards) calibration facilities and for providing calibration services for transportable measuring and testing equipment for other departments.

Providing, upon request, the review and evaluation of nondestructive testing procedures and personnel qualification and certification. It also provides as requested, certified NDT Level III examiners, nondestructive testing, technical and NDT design calculations, review and test services utilizing visual, radiography, ultrasonic, dye penetrants, eddy current and magnetic particle methods.

Providing technical consultation and special test and evaluation services such as chemical testing services, mechanical and metallographic tests and evaluations, and additional technical assistance as requested by other Consumers Power Company organizations.

3.3.3 Management and Budget Department (Management System Section)

The Management System Section of the Management and Budget Department is responsible for the development and implementation of a records management system for quality-related documents. The reporting relationship is shown in Figure 11.

3.3.4 Quality Assurance Department - Nuclear Operations

QA-NO's design and construction responsibilities under CPC-1-A are limited to quality assurance audits of preoperational and hot functional testing activities and are performed jointly with MPQAD and Audit & Management Systems. The QA-NO organization and their operational responsibilities are described in CPC-2-A.

3.4 RESOLUTION OF CONFLICTS

If a difference of opinion arises between Quality Assurance personnel and those of other departments, the dispute is resolved as follows: The Supervisor of the Quality Assurance unit involved first tries to resolve the matter with the organization responsible for conducting the activity. If a resolution cannot be obtained, the matter is referred up through successive levels of Management personnel as described on Figure 1 page 12, Figure 8, page 18, and Figure 9, page 19 until it is resolved.

ORGANIZATION

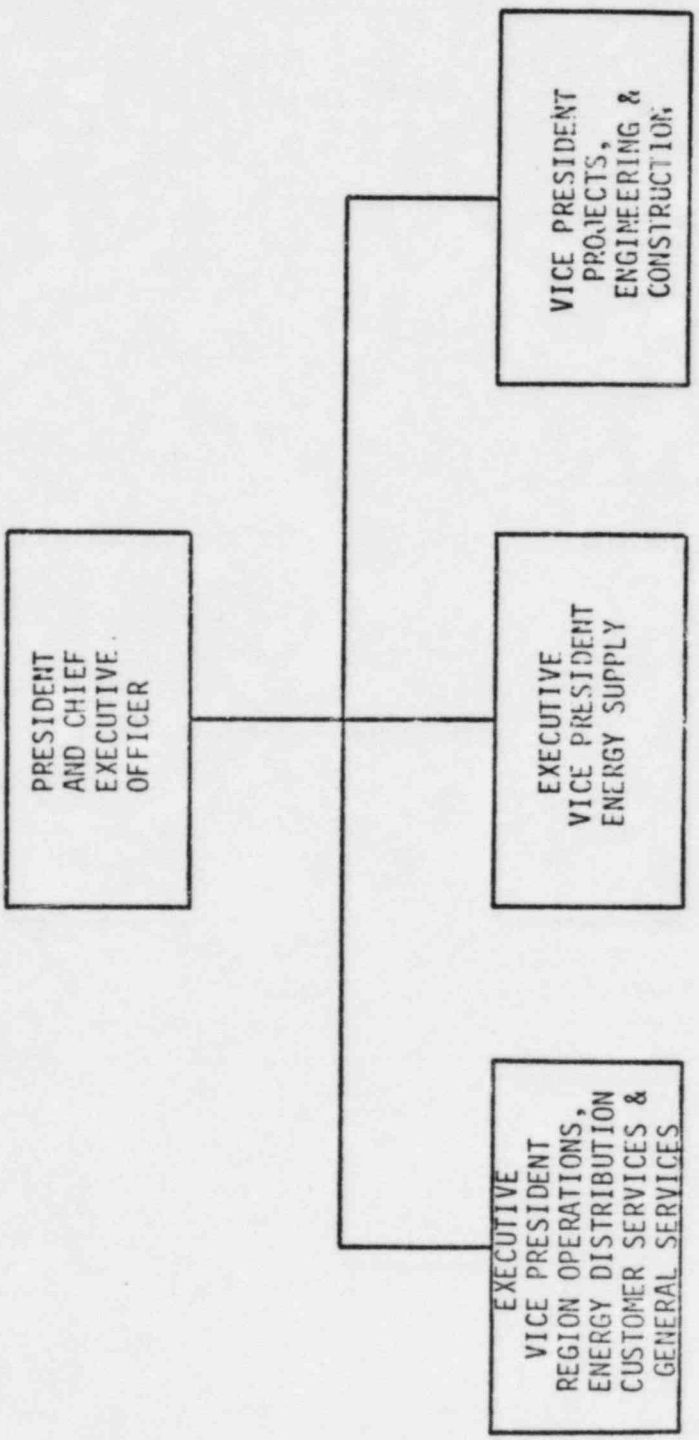


FIGURE 1 - CONSUMERS POWER COMPANY CORPORATE ORGANIZATION

ORGANIZATION

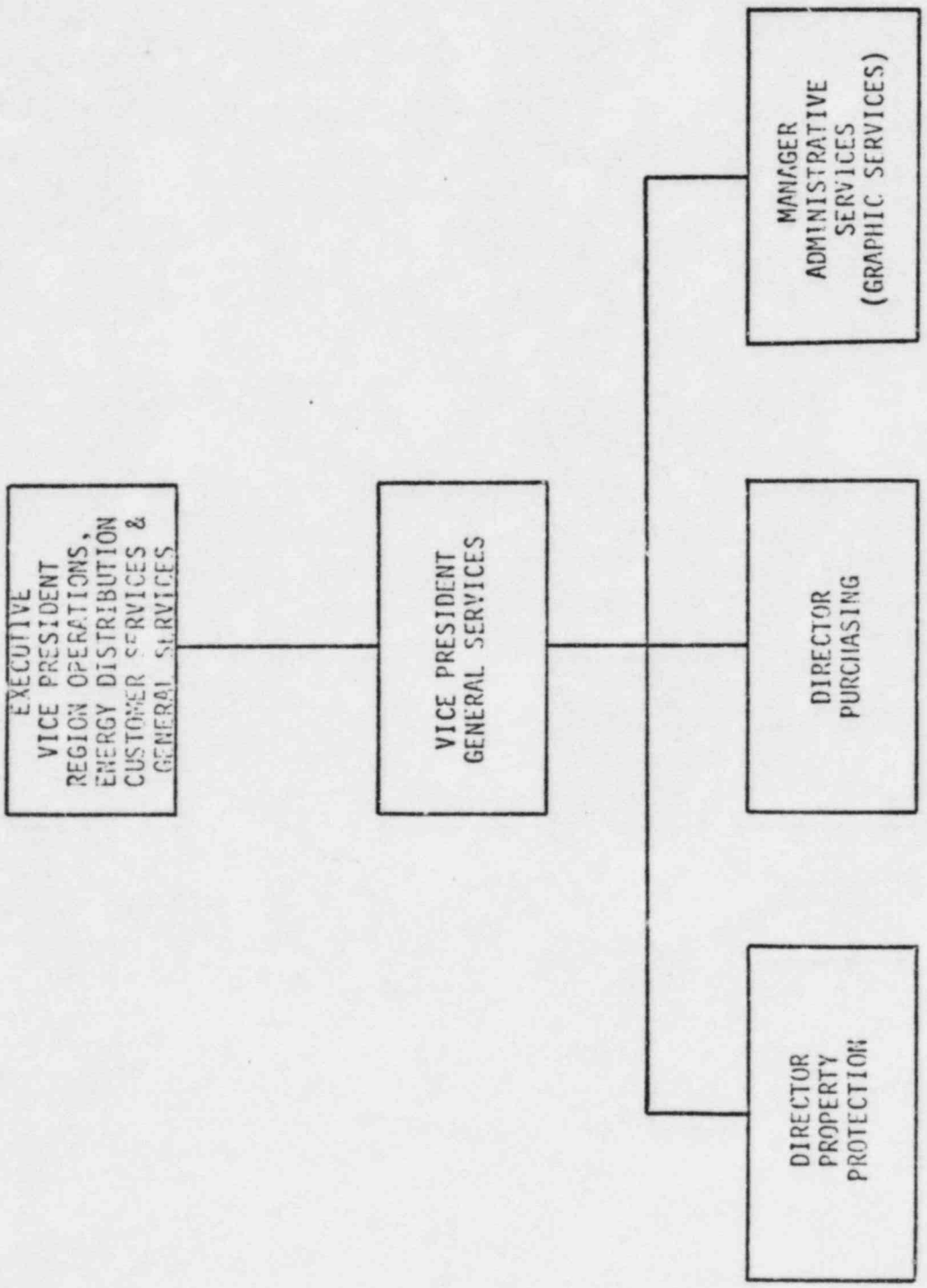


FIGURE 2 - REGION OPERATIONS, ENERGY DISTRIBUTION, CUSTOMER SERVICE & GENERAL SERVICES

ORGANIZATION

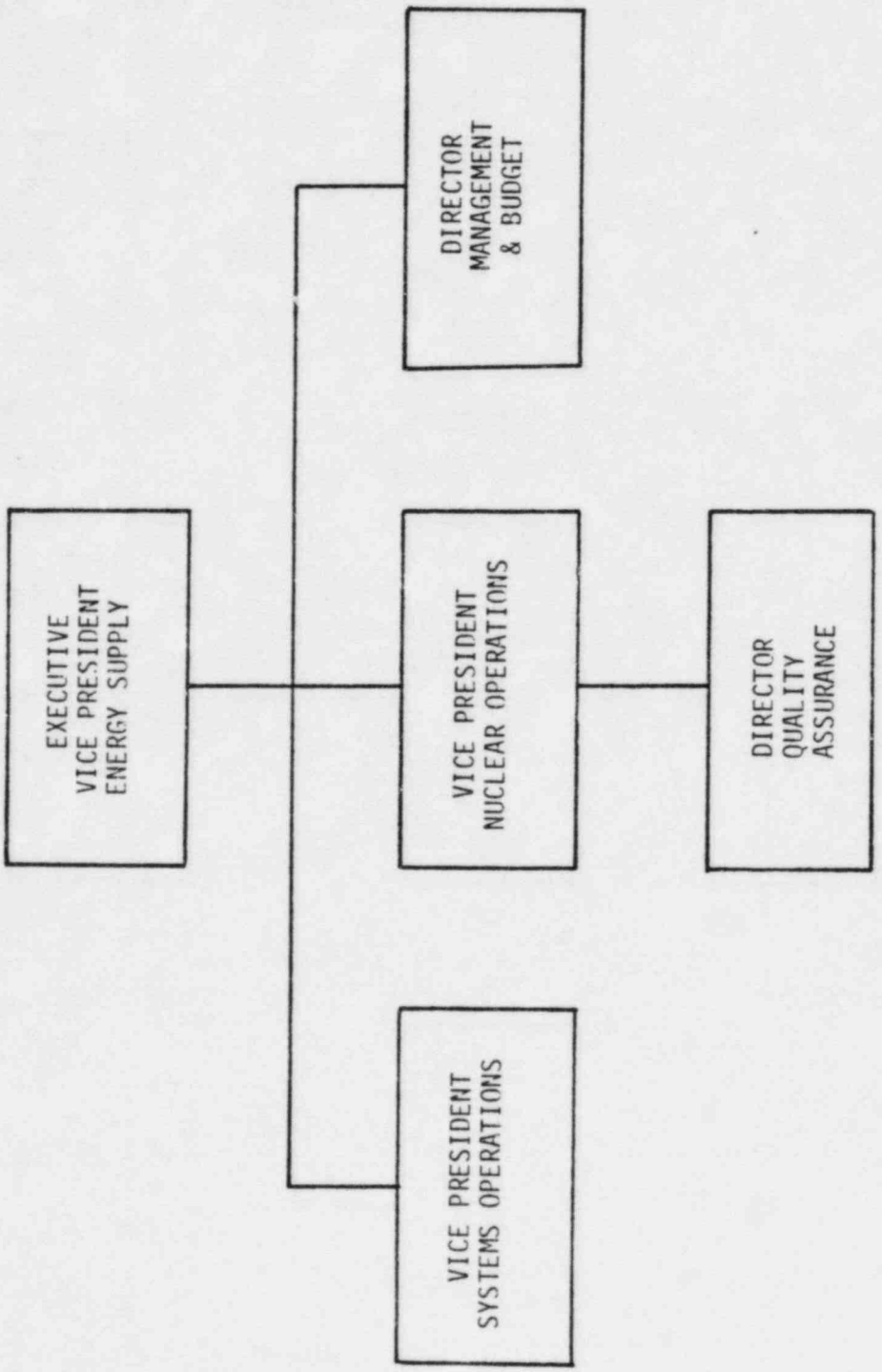


FIGURE 3 - ENERGY SUPPLY ORGANIZATION

ORGANIZATION

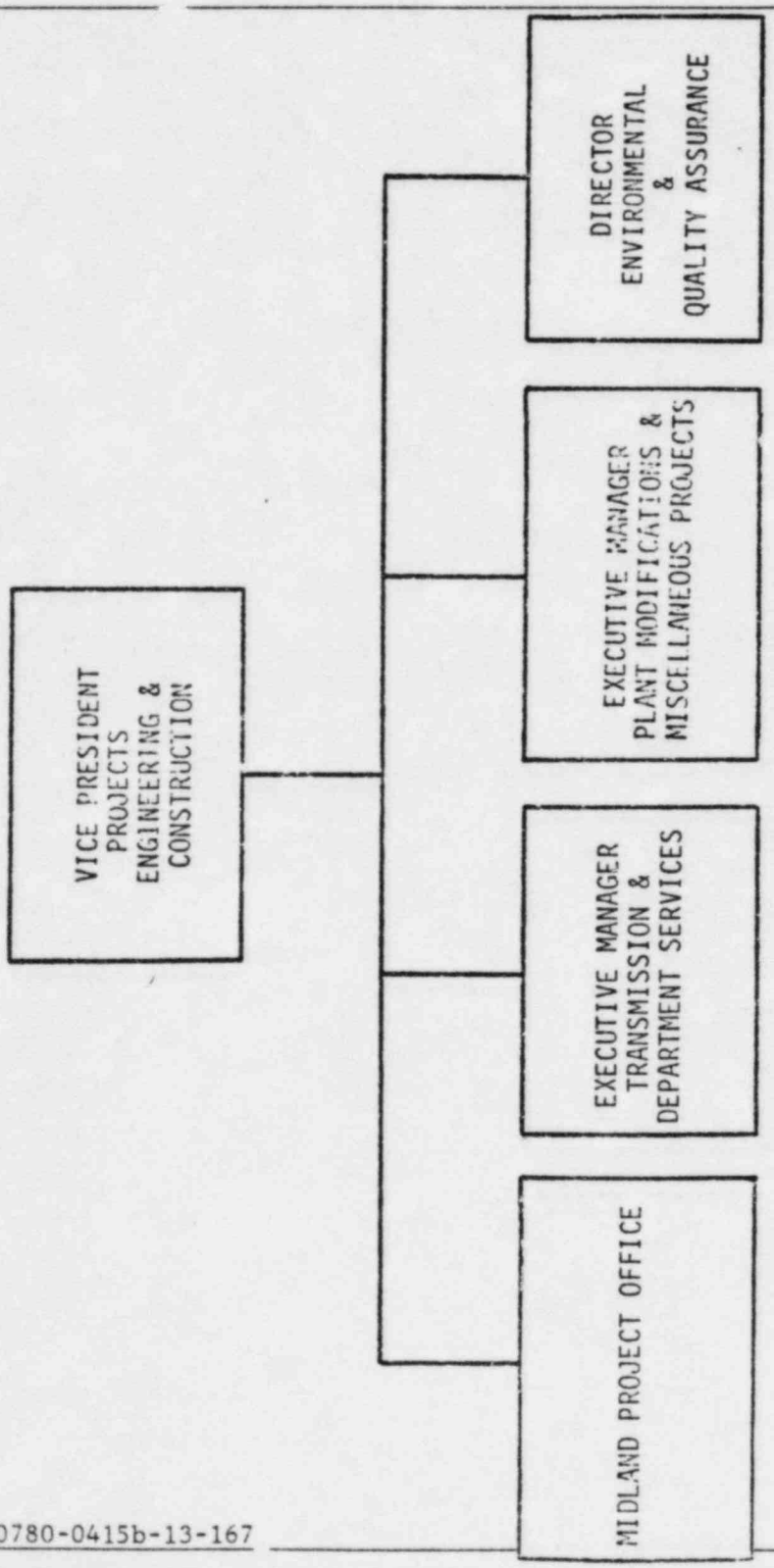
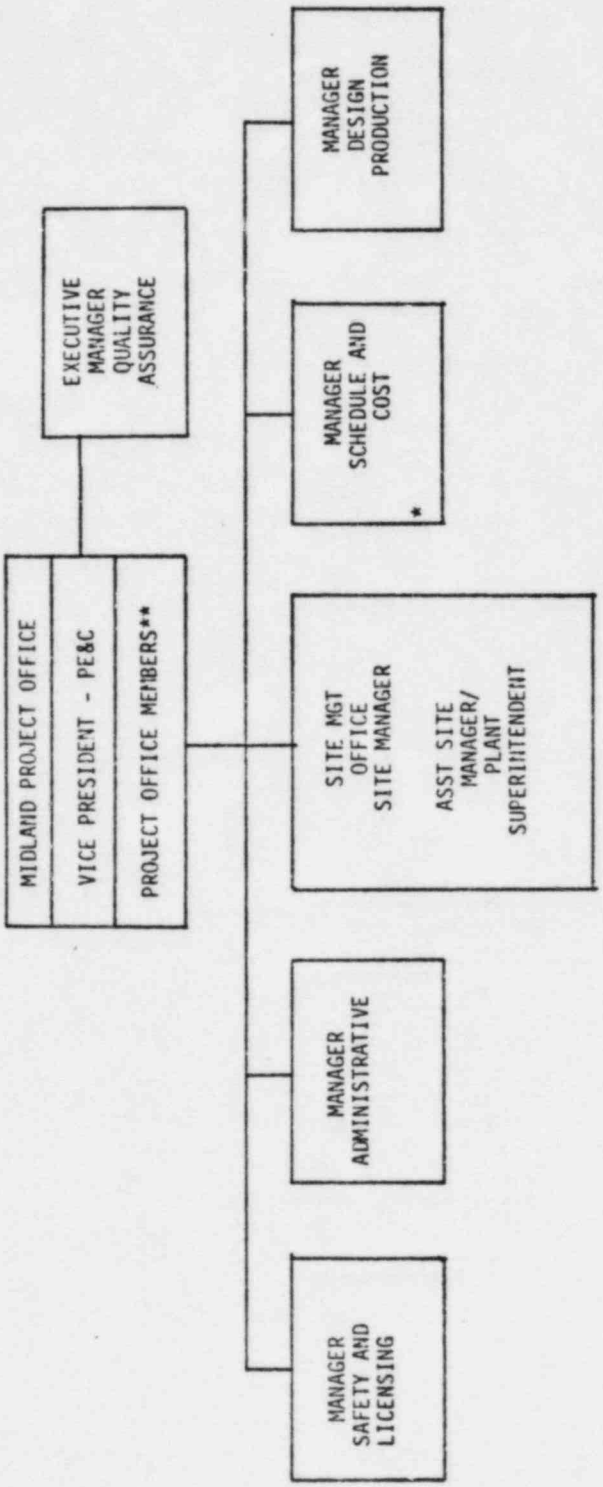


FIGURE 4 - PROJECTS, ENGINEERING & CONSTRUCTION ORGANIZATION

ORGANIZATION



**THE PROJECT OFFICE MEMBERS CONSIST OF THE PROJECT MANAGER, THE EXECUTIVE MANAGER, MIDLAND PROJECT QUALITY ASSURANCE, AND TWO EXECUTIVE MANAGERS

*NO QUALITY RELATED RESPONSIBILITY

FIGURE 5 - MIDLAND PROJECT MANAGEMENT ORGANIZATION - PRIOR TO FUEL LOAD

ORGANIZATION

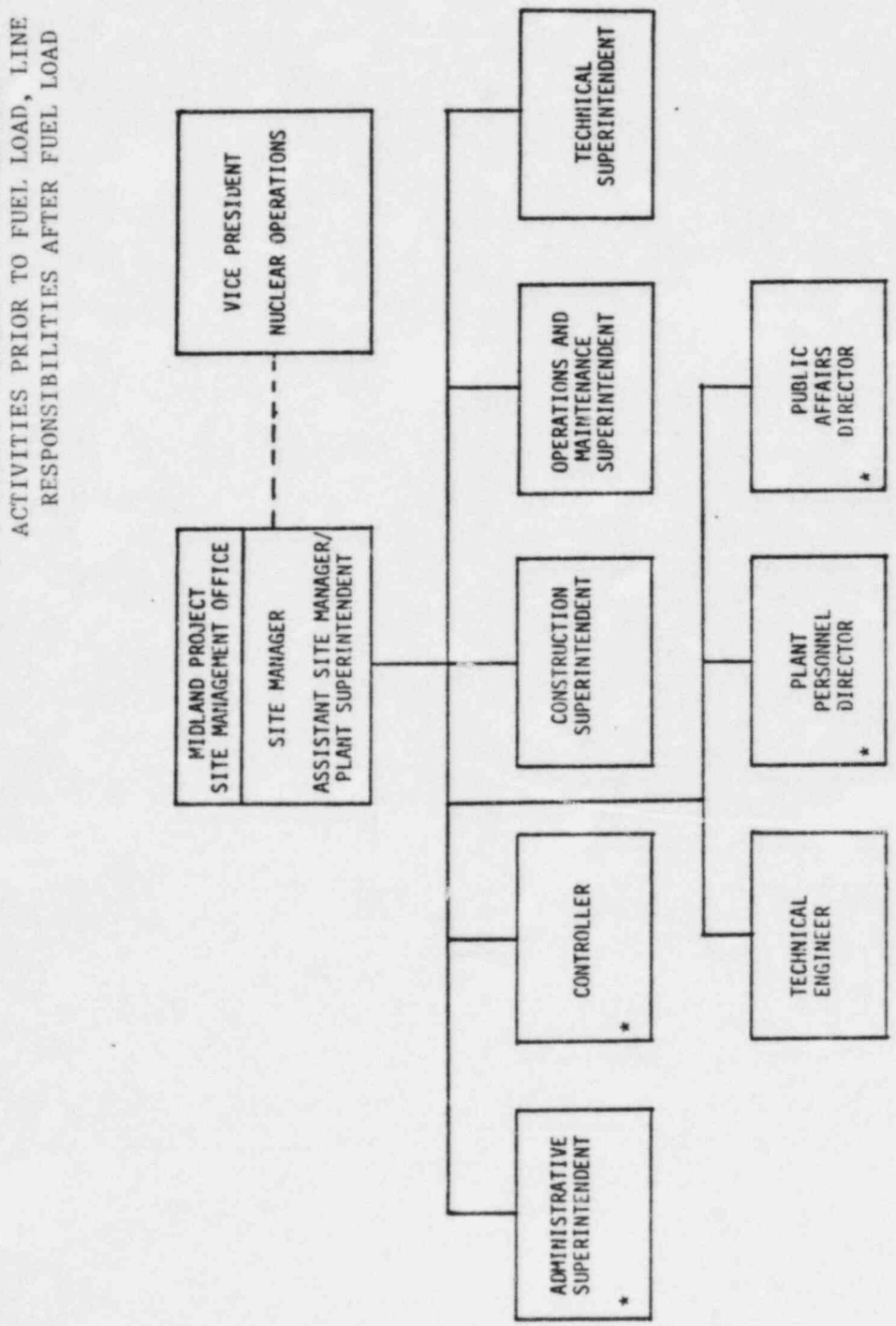


FIGURE 6 - MIDLAND PROJECT SITE ORGANIZATION

ORGANIZATION

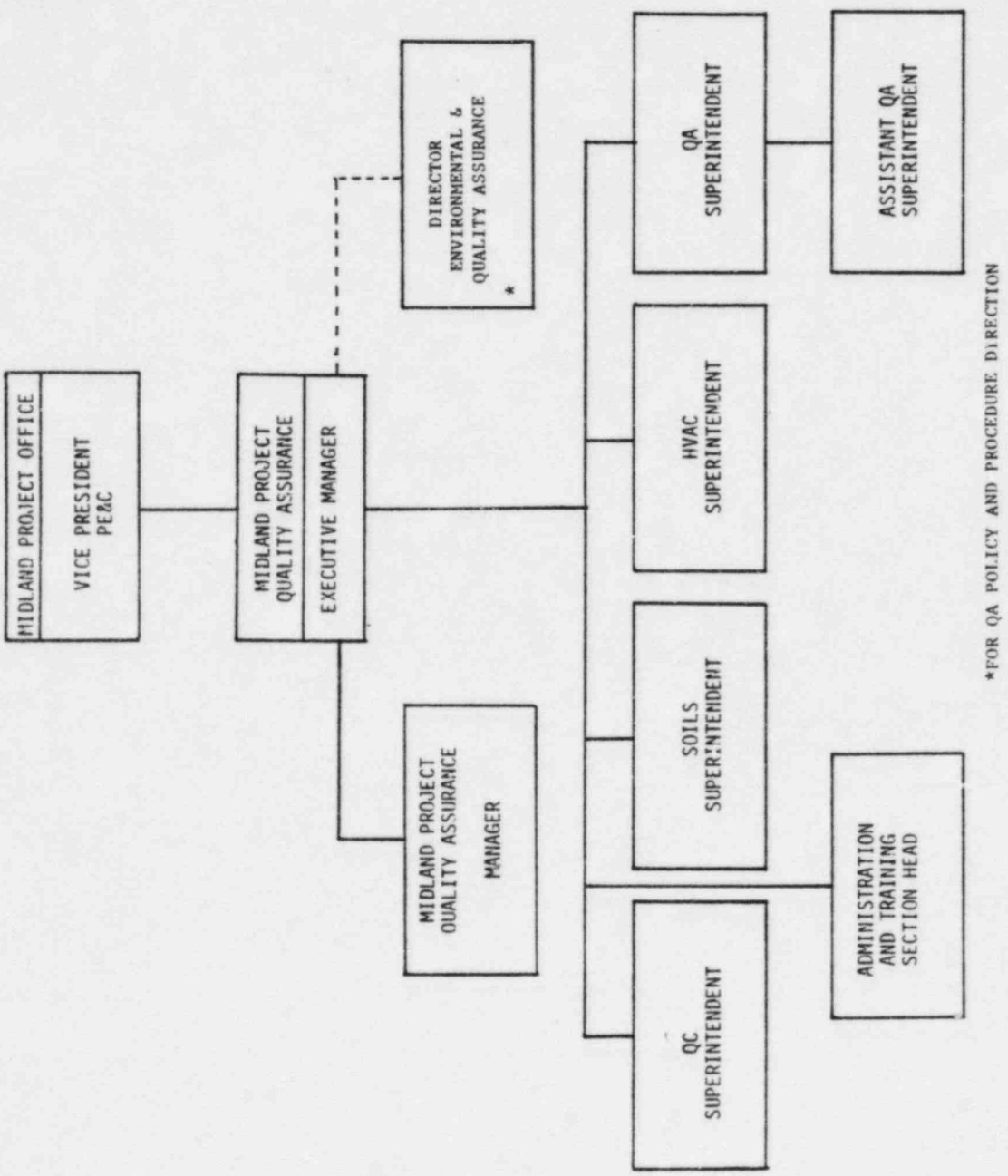


FIGURE 7 - MIDLAND PROJECT QUALITY ASSURANCE DEPARTMENT ORGANIZATION

ORGANIZATION

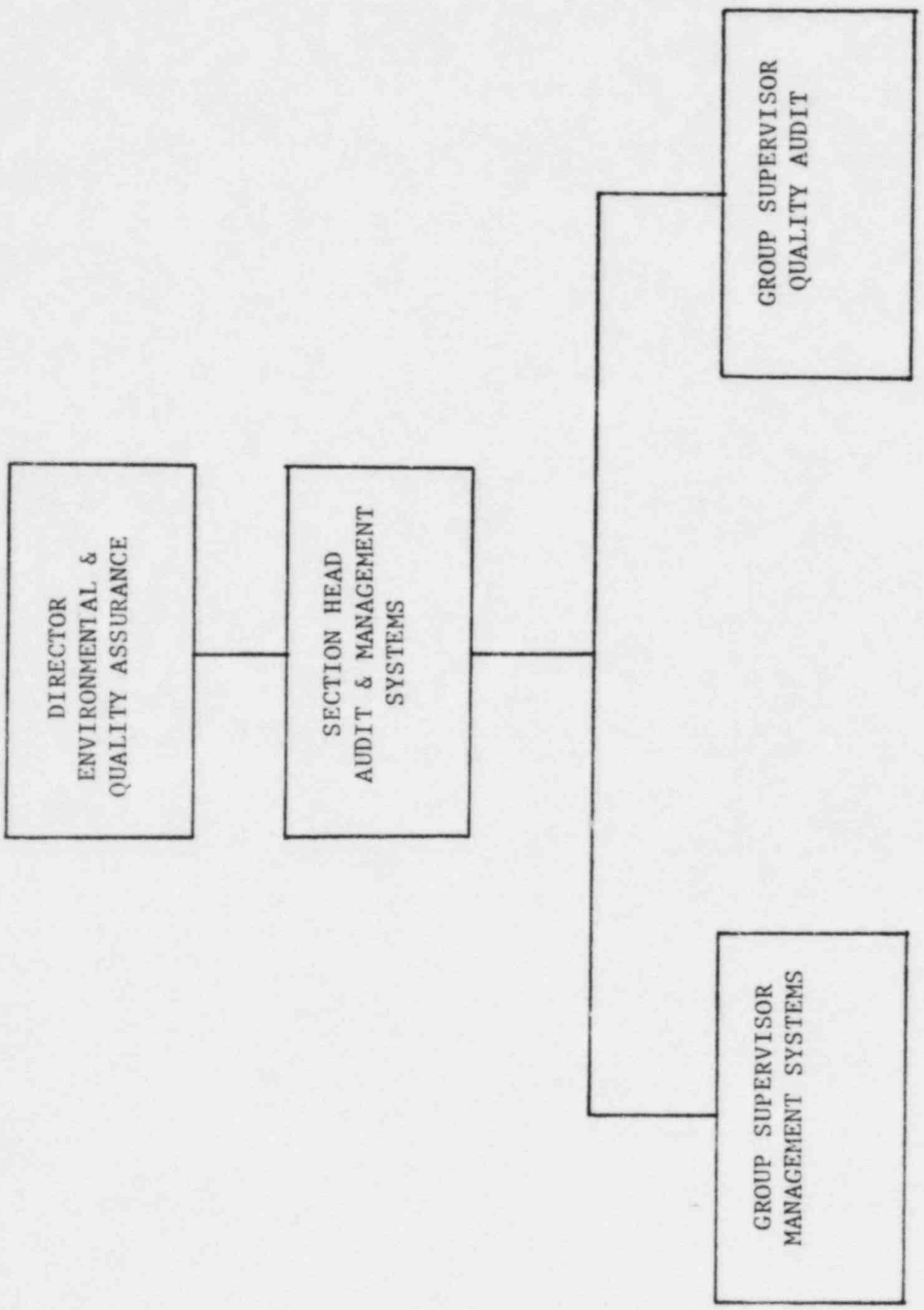


FIGURE 8 - AUDIT & MANAGEMENT SYSTEMS ORGANIZATION

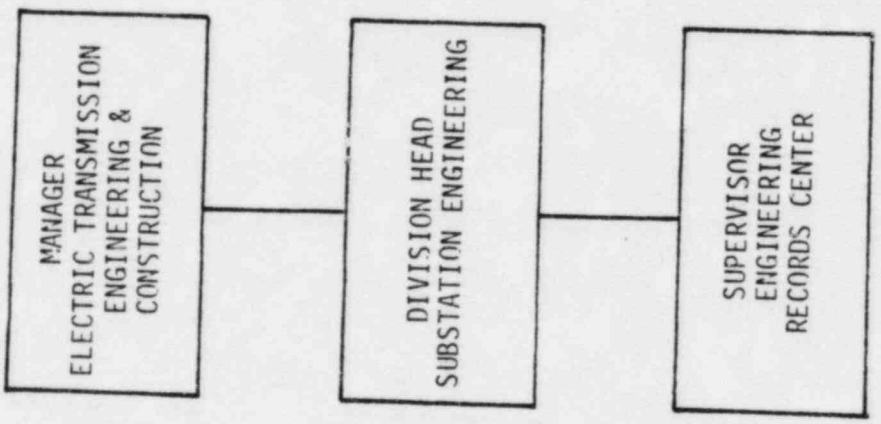


FIGURE 9 - ENGINEERING RECORD CENTER ORGANIZATION

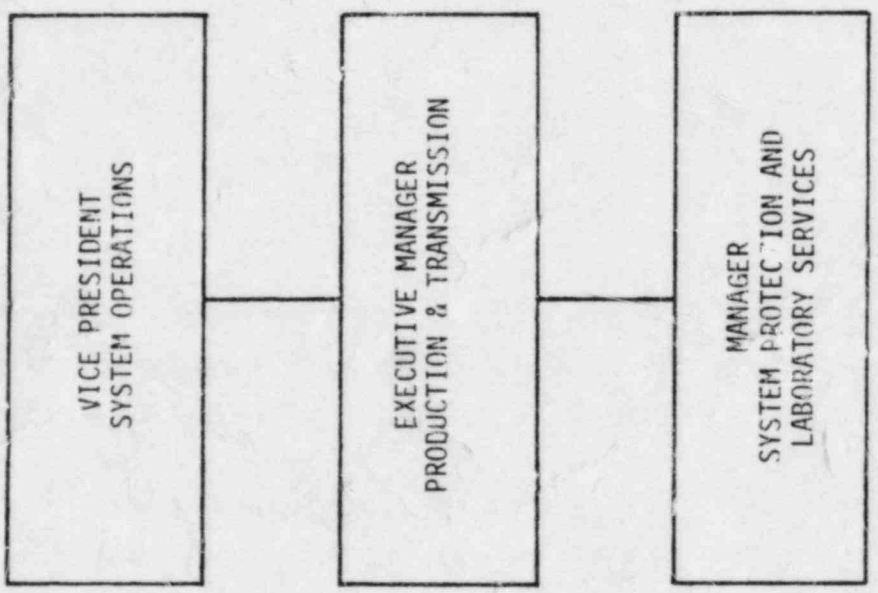


FIGURE 10 - SYSTEM PROTECTION & LABORATORY SERVICES ORGANIZATION

ORGANIZATION

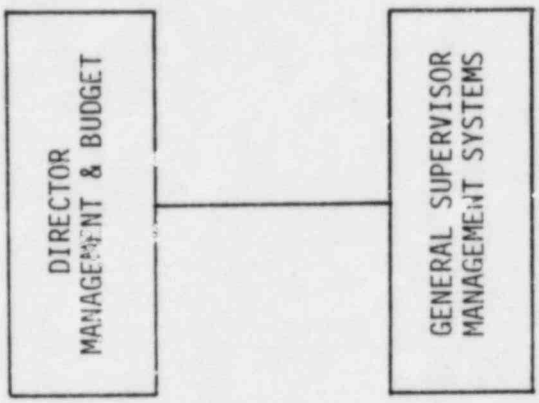


FIGURE 11 - MANAGEMENT & BUDGET ORGANIZATION

QUALITY ASSURANCE PROGRAM

1.0 GENERAL

The President and Chief Executive Officer of Consumers Power Company has issued a "Statement of Authority and Responsibility" which commits the Company to develop and implement a Quality Assurance Program for the design and construction of the Midland Nuclear Plant, in compliance with NRC Regulatory Requirements and applicable Industry Codes and Standards. The Quality Assurance Program is documented in the Consumers Power Company Quality Assurance Program Manual for the Midland Nuclear Plant (this document). The Manual defines the Quality Assurance Program established by Consumers Power Company to assure that the Midland Nuclear Plant is designed and constructed with the controls required to prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. The scope of this Quality Assurance Program covers design, procurement, construction and preoperational testing activities associated with the Plant. The Quality Assurance Program assures that activities affecting quality are accomplished by use of appropriate equipment and under suitable environmental conditions. The program establishes the requirements for special controls, processes, test equipment, tools and qualified personnel.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 2, Quality Assurance Program

b. NRC Regulatory Guide 1.28, (6/7/72) Quality Assurance Program Requirements - Design and Construction (Endorses ANSI N45.2)

c. NRC Regulatory Guide 1.58, Rev 1 Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel (Endorses ANSI N45.2.6)

d. NRC Regulatory Guide 1.74, (Feb 1974) Quality Assurance Terms and Definitions (Endorses ANSI N45.2.10)

e. ANSI N45.2, Criterion 2, Quality Assurance Program

f. WASH 1283, 5/24/74; WASH 1284, 10 26/73; and WASH 1309, 5/10/74

g. NRC Regulatory Guide 1.146, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants (Endorses ANSI N45.2.23)

QUALITY ASSURANCE PROGRAM

3.0 POLICY

3.1 QUALITY ASSURANCE PROGRAM COMPLIANCE WITH NRC REGULATORY GUIDANCE

The Consumers Power Company Quality Assurance Program for the Midland Nuclear Plant is committed to the guidance and requirements contained in NRC Quality Assurance Regulatory Guides, and the NRC Grey, Green and Orange Books, referred to as the Rainbow Books and/or WASH Documents (1283, 5/24/74; 1309, 5/10/74; and 1284, 10/26/73, respectively). Exceptions and/or explanations follow:

a. Subsection "a" of Section D-1 in the Grey Book requires that, "A schedule of all safety-related nuclear power plant activities to be performed by each organization along with the required procedures or instructions to implement the corresponding Quality Assurance Program for the activity should be prepared (and periodically updated to indicate status) to assure timely development, approval and implementation of these Quality Assurance Procedures or instructions prior to initiation of the activity." Consumers Power Company does not have a schedule relating to timely development, approval and implementation of procedures and instructions. In lieu of this schedule, Consumers Power Company does require that procedures or instructions be prepared prior to initiation of Q-Listed activities (and revised when necessary) and does verify, during audits, that the procedures have been prepared and are being implemented.

b. Only those portions of the Orange Book relating to preoperational and hot functional testing will apply.

c. Consumers Power Company uses the definitions of terms provided in ANSI N45.2.10-1973 for Q-Listed activities with the following exceptions:

Audit is defined as "A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of a Quality Assurance Program have been developed, documented and effectively implemented in accordance with specified requirements. An audit does not include surveillance or inspection for the purpose of process control or product acceptance."

Construction Phase is defined as "Activities at the building site necessary to erect and verify proper installation and performance of nuclear power plant facilities prior to initial fuel loading."

Nonconformance is defined as "A deficiency in characteristic, documentation, or procedure which renders the quality of an item

unacceptable or indeterminate and which is considered significant to quality or safety. Examples include:

"Physical defects, test failures, incorrect or inadequate documentation, deviation from prescribed processing, inspection, or test procedures."

Procurement Documentation is defined as "Purchase Requisitions (PRs), Purchase Orders (POs), Local Purchase Orders (LPOs), Returned Material Requests (RMRs), drawings, contracts, specifications, and instructions used to define requirements for the purchase of materials, equipment or services."

d. Section 5.6 of ANSI N45.2.9 requires that the permanent record storage facility have "structure, doors, frames, and hardware should be Class A fire-rated with a recommended four-hour minimum rating." In lieu of this, the existing Consumers Power Company permanent record storage facility has a two-hour fire rating.

e. Consumers Power Company follows the guidance of NRC Regulatory Guide 1.58 with the following exceptions:

Section C.1 Requirement

"However, for qualification of personnel (1) who approve preoperational, start-up and operational test procedures and test results and (2) who direct or supervise the conduct of individual preoperational, start-up and operational tests, the guidelines contained in Regulatory Guide 1.8, Personnel Selection and Training, should be followed in lieu of the Guidelines of ANSI N45.2.6-1978."

Exception/Interpretation

This requirement is interpretated to not apply to System Protection and Laboratory Services. This department has developed its qualification program based on ANSI N45.2.6 and provides services throughout the construction phase of the Midland Nuclear Plant. The program includes the certification of First-Line Supervisors to ANSI N45.2.6 and additional specific requirements determined by the work activity involved.

Section C.5 Requirement

"In addition, the individual should be capable of reviewing and approving inspection, examination, and testing

procedures and of evaluating the adequacy of such procedures to accomplish the inspection, examination, and test objectives."

Exception/Interpretation

While a Level III individual should be capable of reviewing and approving inspection, examination and testing procedures and of evaluating the adequacy of such procedures to accomplish the inspection, examination and test objectives, this is not construed by Consumers Power Company as requiring personnel who review, approve or evaluate such procedures to be certified as Level III personnel.

Section C.6 Requirement

"Since only one set of recommendations is provided for the education and experience of personnel, a commitment to comply with the regulatory position of this guide in lieu of providing an alternative to the recommendations of the standard means that the specified education and experience recommendations of the standard will be followed."

Exception/Interpretation

The education and experience recommendations given in ANSI N45.2.6, Section 3.5 will be treated as such, since the Consumers Power Company qualification and certification program is based upon these recommendations, and more significantly, upon satisfactory completion of capability testing prior to certification. It is the Consumers Power Company position that a candidate should not be required to be a high school graduate or have earned the GED equivalent for the above reasons.

Section C.10 Requirement

"Use of the measures outlined in these actions to establish that an individual has the required qualifications in lieu of required education and experience should result in documented evidence (ie, procedure and record of written test) demonstrating that the individual indeed does have comparable or equivalent competence to that which would be gained from having the required education and experience."

Exception/Interpretation

Consumers Power Company will maintain documented objective evidence that demonstrates that an indivdual does have "comparable" or "equivalent" competence to that which would be gained from having the required education and experience. However, this may take the form of documentation other than "procedures and records of written test" such as documentation of oral tests and on-the-job performance demonstrations.

General

Imposition of this Regulatory Guide on Consumers Power Company Suppliers and subtier Suppliers will be on a case-by-case basis depending upon the item or service to be procured.

f. The remaining guides and/or standards below are listed because the draft revision or released edition implemented by Consumers Power Company is later than that contained in the respective WASH Document in which they appear:

Regulatory Guide 1.146

Regulatory Guide 1.64 - Revision 1 (February 1975)

Regulatory Guide 1.88 (August 1974)

ANSI N45.2.9-1974

Regulatory Guide 1.94 (April 1975)

ANSI N45.2.5-1974

ANSI N45.2.8-1975

ANSI N45.2.12 (Draft 4, Revision 1)

ANSI N45.2.13 (Draft 3, Revision 3)

ANSI N45.2.23-1978

Consumers Power Company requires its Suppliers to respond to the Grey and Green Books (WASH Documents 1283 and 1309) and assigns responsibility for this action to the Supplier. Alternates or exceptions taken by the Supplier

to comply with or implement the regulatory guidance contained in these documents will be described and delineated in the Safety Analysis Report.

3.2 CLASSIFICATION OF STRUCTURES, SYSTEMS AND COMPONENTS

The Quality Assurance Program assures that structures, systems and components important to the safety of the power plant; ie, Q-Listed items, have been designed, fabricated, erected and tested to standards commensurate with the safety function to be performed. Design documents, procurement documents and Quality Assurance Program documents reflect the importance to safety of the item or activity affected by the documents.

The Architect-Engineer, with input from the NSSS Supplier, develops the original list of safety-related structures, systems and components. The list is reviewed and approved by the Manager - Design Production with assistance in reviews from the Midland Project Quality Assurance Department to assure that the listing properly identifies and classifies safety-related items and includes those activities designated by the Midland Project to receive coverage by the QAP. This list (Q-List) identifies and classifies those safety-related items according to the requirements of 10 CFR 50.55(a) and the guidance of NRC Regulatory Guides 1.26 and 1.29. The Q-Listed items are specified in the applicable design documents and a listing of the items and their classification level is prepared. The classification listing is revised as design changes, modifications and regulatory requirements dictate. The Manager - Design Production is responsible for controlling the classification listing and its revisions.

3.3 QUALIFICATION OF PERSONNEL

Qualification requirements for heads of departments which are implementing the Quality Assurance Program are documented by the appropriate Vice Presidents. For personnel within each department, the qualification requirements are documented by the head of the department.

The Executive Manager - Midland Project Quality Assurance and the Director - Environmental and Quality Assurance must have an engineering or scientific degree with five or more years of appropriate experience in such areas as Quality Assurance, design, manufacture, testing, construction, or operations; and five or more years experience in the management of appropriate engineering, construction, operations functions, administrative activities, program development or nuclear plant quality-related activities.

3.4 TRAINING OF PERSONNEL

To assure that Q-Listed operations and activities are performed correctly, Consumers Power Company conducts formal training programs for Company

personnel and requires Principal Suppliers to have formal training programs. These training programs include general, continuing and specialty training. Training is accomplished in accordance with documented instructions with the objectives of indoctrinating personnel in disciplines such as quality assurance, testing, industrial safety and security, etc.

Training is also accomplished to aid in developing specific job skills and updating and maintaining these skills. Records are maintained for each trained Consumers Power Company employee and are reviewed on a periodic basis to assure completeness and determine requirements for continuing training.

Training of personnel within the scope of the Quality Assurance Program is accomplished by Projects - Engineering and Construction, and other departments involved, and is subject to appropriate audit as follows:

a. Projects, Engineering and Construction Personnel Training - Personnel who perform activities during the design and construction of the Midland Nuclear Plant require various levels of proficiency to properly perform their job responsibilities.

   Each Director or Manager in Projects, Engineering and Construction provides the necessary training and indoctrination and maintains his own personnel training records.

b. Other Support Services Training - Personnel who perform quality-related support activities require various levels of proficiency to properly perform their job responsibilities. Training is accomplished in accordance with the individual's departmental training plan.

c. Quality Assurance Training - Supervisors or managers responsible for work activities which affect quality are trained or indoctrinated as appropriate to assure their understanding of quality functions and interfaces. Training and indoctrination of Consumers Power Company Projects, Engineering and Construction, or other Company personnel to the requirements of the Quality Assurance Program are performed under the direction of the Executive Manager - Midland Project Quality Assurance and the Director - Environmental & Quality Assurance. They provide for such training and indoctrination and assign responsibility for developing and conducting training programs. The respective Quality Assurance groups coordinate with other departments to develop schedules, select personnel and conduct retraining as deemed necessary. Personnel training records are maintained by the respective departments. The Quality Assurance training provides the mechanism for communicating to all responsible organizations and individuals that quality policies, Quality Assurance manuals, and procedures are mandatory requirements which must be implemented and enforced.

QUALITY ASSURANCE PROGRAM

3.5 QUALITY ASSURANCE PROGRAM REVIEW

The status and adequacy of the Quality Assurance Program is reviewed on a regular basis. The results are documented and reported to senior Consumers Power Company Management personnel in accordance with Quality Assurance Program Policy 20, "Program Reporting."

3.6 QUALITY ASSURANCE PROGRAM MATRIX

The index of CPC-1-A provides a matrix of major Quality Assurance Program policies keyed for 10 CFR 50, Appendix B, criteria. The number of the policy (Arabic) is the same as the criterion number (Roman). Two additional subjects, Policy 19, "Program Review," and Policy 20, "Program Reporting," are added to cover special interest areas.

The index of Volume II (Attachment A) of Consumers Power Company's Quality Assurance Program Manual for the Midland Nuclear Plant provides a matrix of the Quality Assurance Program procedures. The key to determine which 10 CFR 50, Appendix B, criterion the procedure implements is the first set of digits of the policy or procedure number. For example, Quality Assurance Program Procedure 4-1 (QAP 4-1) implements Criterion IV and Policy 4.

QUALITY ASSURANCE PROGRAM - ATTACHMENT A

QUALITY ASSURANCE PROGRAM PROCEDURES - VOLUME II

Criterion No	Criterion & Procedure Title	Procedure No
-	DEFINITIONS	-
I	ORGANIZATION	
	Organization	1-1
II	QUALITY ASSURANCE PROGRAM	
	Quality Assurance Policies	2-1
	Quality Assurance Program Procedures	2-2
	Identification of Safety-Related Structures, Systems, Components, and Services	2-3
	Quality Assurance Training	2-4
	Project Quality Assurance Plan for Remedial Soils Work	2-5
III	DESIGN CONTROL	
	Design Document Preparation	3-1
	Design Change Control	3-2
	Design Verification and Interface Control	3-3
IV	PROCUREMENT DOCUMENT CONTROL	
	Processing Procurement Requisitioning Documents and Requests for Proposals	4-1
V	INSTRUCTIONS, PROCEDURES, AND DRAWINGS	
	Department Procedures	5-1
VI	DOCUMENT CONTROL	
	Document Control	6-1

QUALITY ASSURANCE PROGRAM - ATTACHMENT A

QUALITY ASSURANCE PROGRAM PROCEDURES - VOLUME II

QUALITY ASSURANCE PROGRAM - ATTACHMENT A

QUALITY ASSURANCE PROGRAM PROCEDURES - VOLUME II

DESIGN CONTROL

1.0 GENERAL

Consumers Power Company is ultimately responsible for, and maintains cognizance and control of, the design of the Midland Nuclear Plant. This responsibility is carried out by Projects, Engineering and Construction. The Nuclear Steam Supply System (NSSS) Supplier, the Architect-Engineer (A-E), and other Suppliers and Consultants, perform the detailed design work. The Midland Design Production Manager is assigned direct responsibility for coordinating the activities between design organizations and within Consumers Power Company in areas where Consumers Power Company acts as lead designer.

The design organizations identify the applicable regulatory requirements, design bases, codes and standards; develop the design and specify the design interfaces; perform design verification and prepare design documents. Each design organization prepares procedures for controlling its own design activities. Consumers Power Company audits selected supplier design documents to an extent deemed appropriate.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 3, Design Control

b. 10 CFR 50, Appendix A, General Design Criteria for Nuclear Power Plants

c. 10 CFR 50, Section 50.55a, Codes and Standards

d. NRC Regulatory Guide 1.64, Rev 1, Quality Assurance Requirements for Nuclear Power Plants (Endorses ANSI N45.2.11)

e. ANSI N45.2, Criterion 4, Design Control

3.0 POLICY

3.1 ORGANIZATION FOR DESIGN

The Midland project management organization provides overall management and control of the Midland Nuclear Plant Project throughout design, construction and testing until plant turnover to Nuclear Operations. The Design Production Department controls and coordinates design activities between the NSSS Supplier, A-E, Contractors and other organizations that provide design services.

Audit & Management Systems assures by audits that design controls are instituted and adequate during design and construction and verifies that design control records are complete.

DESIGN CONTROL

3.2 DESIGN INTERFACES

A single design organization (eg, the A-E) is assigned as the lead design organization. The lead design organization, at the direction of the Midland Project Design Production Manager, establishes and controls the interfaces with other design organizations. These interfaces include Mechanical, Electrical, Civil, Metallurgical, Instrumentation and Control, and Nuclear disciplines as well as functional interfaces. The lead design organization reviews the designs of other organizations to assure compatibility of design and equipment.

3.3 DESIGN DOCUMENTS

Each group or organization performing detailed design translates the applicable regulatory requirements, design bases, codes, standards and design criteria into design documents, such as. specifications, drawings, standards, materials, lists, process procedures and other types of requirements documents.

3.4 DESIGN VERIFICATION

The assigned lead design group or organization assures that the designs and materials are suitable and that they comply with design criteria and regulatory requirements. Verification of design is performed by individuals other than those who performed the original design. The extent of the design verification is determined by the complexity of the system, the Q-Listed function to be performed, and the applicability of regulatory requirements, codes, standards, SAR commitments and Quality Assurance requirements. The lead design group or organization identifies the particular verification methods to be utilized, and if a test program is used, it includes testing of a prototype under the most adverse design conditions. Audit & Management Systems with assistance from other Consumers Power Company departments, conducts audits to assure that the design is reviewed, and the review documented in such areas as: Stress, thermal, hydraulics, transient and accident analysis, compatibility of materials, accessibility for inservice inspection, maintenance and repair, and acceptance criteria for inspections and tests. The assigned lead group or organization establishes procedures to assure that errors and deficiencies in the design process that adversely affect Q-Listed structures, systems and components are documented and corrective action is taken to preclude repetition.

Standard off-the-shelf commercial or previously approved materials, parts and equipment essential to the Q-Listed functions of structures, systems and components are reviewed for suitability of application before they are selected.

3.5 DESIGN CHANGES AND MODIFICATIONS

Changes to the design require the same review and approval as the original design by the group or organization delegated lead design responsibility. Design reviews are documented and revised design documents are issued to the same distribution as the original documents.

PROCUREMENT DOCUMENT CONTROL

1.0 GENERAL

Procurement procedures describe the sequence of actions to be accomplished in the preparation, review, approval and control of procurement documents for procurements by Consumers Power Company.

Assigned Quality Assurance personnel review procurement specifications to verify the adequacy of quality requirements stated therein. This review determines that quality requirements are correctly stated, inspectable and controllable; that there are adequate acceptance and rejection criteria; and that procurement documents have been prepared, reviewed and approved in accordance with Quality Assurance Program requirements. Records of this Quality Assurance review of procurement documents are made and kept available for verification.

Midland Project Quality Assurance personnel review the Quality Assurance provisions in procurement documents issued by the Company for the services of principal nuclear power plant suppliers, such as the Architect-Engineer, Constructor, Nuclear Steam Supply System Supplier, and suppliers to Consumers Power of other safety-related equipment, materials and services. These principal suppliers are responsible for reviewing and approving the procurement documents issued to their lower-tier suppliers. Audit & Management Systems personnel or Quality Assurance personnel under contract to Consumers Power Company audit the activities of these suppliers to assure their procurement document controls are effective.

These reviews are accomplished to assure that Consumers Power Company procurement documents contain or reference provisions such as the following:

a. Basic technical requirements including drawings, specifications, codes and standards with applicable revision data, test and inspection requirements, and special requirements, such as for designing, fabricating, cleaning, erecting, packaging, handling, shipping and storage.

b. Quality Assurance requirements, such as invoking the requirements for a Quality Assurance Program, or elements of a program in accordance with the requirements of 10 CFR 50, Appendix B; ANSI N45.2 and ANSI N45.2.13.

c. Designation of records to be prepared, maintained, submitted, or retained available for review, such as drawings, specifications, procedures, procurement documents, inspection and test records, personnel and procedure qualification records, and material, physical and chemical test results. As a minimum, documentation to be submitted by the supplier must specifically identify (eg, by purchase order number):

(1) The purchased material or equipment and the specific procurement requirements (codes, standards, specifications, etc) which are met by the items.

(2) Procurement requirements which have not been met, together with a description of those nonconformances dispositioned "accept as is" or "repair."

d. Provisions for extending applicable requirements to lower-tier subcontractors and suppliers.

e. Provisions for access to vendors' or contractors' facilities for the purpose of source inspection, surveillance and audit.

f. SAR commitments and regulatory requirements.

g. Applicable requirements of the Consumers Power Company Quality Assurance Program Manual for the Midland Nuclear Plant.

When Consumers Power Company procurement documents do not contain or reference the preceding provisions, these procurement documents do require the principal supplier to provide a Quality Assurance Program description. This Quality Assurance Program description will be evaluated and approved by the appropriate Consumers Power Company department. Approval is based, in part, on compliance with the preceding provisions. Approval of the principal supplier's Quality Assurance Program is necessary prior to initiation of activities covered by the procurement document.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 4, Procurement Document Control

b. ANSI N45.2, Criterion 5, Procurement Document Control

c. ANSI N45.2.13, Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants

3.0 POLICY

3.1 PROCUREMENT

The Midland Project Manager is responsible for planning and coordinating the selection of the Architect-Engineer, Constructor, Nuclear Steam Supply System and other principal suppliers. He recommends principal suppliers and requests an evaluation for nonconstruction contractor services from the project management organization, as applicable. The Midland Project Quality

Assurance Department evaluates the proposed supplier's Quality Assurance Programs. Principal suppliers of contractor construction field labor are evaluated for technical capability by the Midland Project Manager.

The Midland Project Quality Assurance Department evaluates the contractor's Quality Assurance Program.

The Design Production Manager coordinates preparation of the required procurement documents and obtains approval of the appropriate departments, including the Midland Project Quality Assurance Department prior to forwarding the request for purchase to the Purchasing Department.

Consumers Power Company delegates the procurement of the Nuclear Steam Supply System (NSSS) items and services to the NSSS supplier, and the procurement of certain other items and services to the Architect-Engineer. The Audit & Management Systems Section reviews the procurement documents issued by these principal suppliers during scheduled audits to assure that the appropriate Quality Assurance requirements are being incorporated.

3.2 PROCUREMENT CHANGE CONTROL

Changes in procurement documents by Consumers Power Company, its suppliers, and their suppliers, are subject to equivalent reviews, approvals, and audits as those in effect during the preparation and processing of the original procurement documents.

INSTRUCTIONS, PROCEDURES AND DRAWINGS

1.0 GENERAL

Instructions for controlling and performing activities affecting quality of equipment or activities such as procurement, manufacturing, construction, installation, inspecting and testing are documented in instructions, procedures, specifications, checklists and other forms of documents. These documents provide qualitative and quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished. (NOTE: This policy does not apply to design documents, such as drawings and procurement documents which are covered by Policies 3 and 4.)

The various Consumers Power Company departments and suppliers which perform a Q-Listed activity prepare required instructions, procedures and other instructional type documents prior to initiation of Q-Listed activities. Reviews of Consumers Power Company departmental procedures for adequacy are conducted by the Audit & Management Systems Section. They also verify through audits that the required instructions and procedures are prepared and implemented.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 5, Instructions, Procedures and Drawings

b. 10 CFR 50, Appendix E, Emergency Plans for Production and Utilization Facilities

c. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III

d. NRC Regulatory Guide 1.17, (June 1973), Protection of Nuclear Plants Against Industrial Sabotage (Endorses ANSI N18.17)

e. NRC Regulatory Guide 1.68, (Nov 1973), Appendix C, Preparation of Procedures

f. ANSI N18.17, Industrial Security for Nuclear Power Plants

g. ANSI N45.2, (1971), Criterion 6, Instructions, Procedures and Drawings

3.0 POLICY

3.1 QUALITY ASSURANCE PROGRAM POLICIES

Quality Assurance Program Policies are documents which establish requirements and assign responsibility for implementing elements of the Consumers Power Company Quality Assurance Program. The policies respond to the eighteen (18)

criteria delineated in 10 CFR 50, Appendix B, and two additional criteria. There is one policy for each criterion. The policies provide the Consumers Power Company interpretation of the requirements of the criteria and formulate a Management commitment to comply with the requirements of the basis documents listed in Section 2 of each policy. The policies provide the basis for preparing Quality Assurance Program Procedures, described below.

3.2 QUALITY ASSURANCE PROGRAM PROCEDURES

Quality Assurance Program Procedures for Design and Construction (Volume II) are used to implement the Consumers Power Company Quality Assurance Program Policies. Quality Assurance Program Procedures are prepared by E&QA for the Midland Nuclear Plant Project. They describe the system and methods for accomplishing the various quality-related activities, define the departmental relationships and assign responsibilities in a manner that assures compliance to the quality requirements delineated in the Quality Program Policies. Approved Quality Assurance Program Procedures are retained in Quality Assurance Program Manuals assigned to specified functions and are maintained current.

3.3 QUALITY ASSURANCE PROGRAM DEPARTMENTAL PROCEDURES

Departmental procedures are prepared by each department that is responsible for implementing portions of the Quality Assurance Program.

a. Department Procedures - Projects, Engineering and Construction

Organizations within Projects, Engineering and Construction prepare and maintain procedures as necessary to provide instructions for administrative control and technical support during the Midland Nuclear Plant Project. They provide the basis for a consistent method of performing recurring engineering, construction and Quality Assurance activities. They also control the interfaces between Consumers Power Company and its suppliers. These procedures establish the system for offsite Management control and visibility and for control of onsite quality-related activities which assure the Quality Assurance Program is implemented, maintained and its effectiveness is measured and reported.

b. Support Organization Department Procedures

The Support Organizations such as System Protection and Laboratory Services, Purchasing and Management and Budget, prepare and maintain procedures for their activities that are within the Quality Assurance Program. These procedures provide the basis for a consistent method of performing their internal department quality-related activities and also

define the interfaces between other Consumers Power Company departments and suppliers.

3.4 QUALITY ASSURANCE PROGRAM SITE PROCEDURES

Special procedures are prepared by various responsible departments or organizations for use at the Midland site.

a. Preoperational and Hot Functional Test Procedures

Projects, Engineering and Construction is responsible for providing for the preparation of:

(1) Preoperational test procedures for preliminary testing of components and systems prior to initial fuel loading to assure that construction and installation are complete and to verify design and function of systems.

(2) Hot functional test procedures for testing the NSSS and auxiliary systems where possible at rated temperature and pressure to demonstrate their satisfactory performance.

Test procedures are prepared in compliance with the NRC Regulatory Guide 1.68.

b. Quality Assurance/Control Procedures

Quality Assurance/Control Procedures are working level documents which prescribe quality assurance/control activities. These Procedures provide detailed instructions for the physical inspection, test and measurement of parts, components and materials to assure compliance to engineering requirements, specifications, codes, standards and procurement documents. The Procedures also provide additional detailed instructions for carrying out the quality functions specified by Quality Assurance Program Procedures. These procedures are included in the Midland Project Quality Assurance Department Procedures Manual or the Quality Control Notices Manual.

c. Special Process Procedures

Special Process Procedures are those procedures which control special processes, including welding, heat-treating and nondestructive testing. Special Process Procedures require qualification of personnel, equipment, or procedures through tests and examinations by examiners, or approved examination techniques. Special Process Procedures are prepared in compliance with ANSI N45.2, Section 10, and requirements of applicable

standards and codes such as the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

d. Suppliers' Work and Inspection Procedures

Prior to performing work or inspection on a Q-Listed item (structures, systems and components), suppliers are required to develop written procedures for accomplishing quality-related work activities and performing required inspections and tests. These procedures reference applicable drawings, specifications, codes and standards. The Midland Project Quality Assurance Department reviews field inspection plans or inspection procedures prior to implementation.

DOCUMENT CONTROL

1.0 GENERAL

Documents which prescribe activities affecting quality, including instructions and procedures, are prepared, reviewed, issued, and controlled according to written procedures. Measures are included to assure that documents, including changes, are reviewed for adequacy and approved for release by the supervisory personnel of the organization preparing the document and are distributed according to a controlled distribution to the user functions. The document control system provides for:

a. Identification of individuals and organizations responsible for preparing, reviewing, approving, and issuing documents and revisions.

b. Identifying the proper documents to be used in performing a quality-related or a Q-Listed activity (refer to Quality Assurance Program Policy 5).

c. Coordination and control of interface documents.

d. Ascertaining that proper documents are being used.

e. Establishing current and updated distribution lists.

(NOTE: This policy does not apply to Engineering Records such as drawings, specifications, vendor drawings, etc. which are covered by Quality Program Policies 3 and 4.)

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 6, Document Control

b. ANSI N45.2, Criterion 7, Document Control

c. ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components

3.0 POLICY

3.1 DOCUMENT PREPARATION

The head of the department within the Consumers Power Company organization that is responsible for activities that are quality-related is responsible for directing the preparation of instructions or procedures for performing the activities. He or his designated representative is responsible for the identification of regulatory requirements, industry standards, Consumers Power Company Quality Assurance Program requirements, Safety Analysis Report

requirements, and Management instructions which relate to his area of responsibility and that the applicable requirements/standards/instructions are complied with. He is responsible to assure that the documents and revisions recognize and establish interfaces with other functions or organizations, and he coordinates the review and resolution of comments with those organizations. The reviewer has access to background information to assure adequate understanding of the requirements for the document and the document's contents. A system for the preparation of documents and revisions, and their interdepartmental and intradepartmental review, approval and administration which preclude the possibility of the use of outdated or inappropriate documents is defined by specific department procedures.

3.2 DOCUMENT DISTRIBUTION AND CONTROL

Instructional documents are distributed to users and to other personnel according to a distribution list maintained by the person responsible for preparation and control of the document. The head of the department responsible for the document distributes up-to-date issues of the documents and maintains an up-to-date document index. The assigned holders of the document are responsible for maintaining the latest revisions of the documents. The Audit & Management Systems Section audits to assure that the documents are maintained current and are at the locations where the information is to be used.

3.3 RESPONSIBILITY FOR DOCUMENT PREPARATION AND CONTROL

The following sections list the responsibilities for the preparation, review, approval and distribution of policies, procedures and other instructional documents:

3.3.1 Quality Assurance Program Policies (Topical Report CPC-1A)

The Director - Environmental & Quality Assurance formulates Quality Assurance Program Policies. The Director coordinates and acquires the approval of the policies by the Vice Presidents who have the authority and responsibility for the elements of the Quality Assurance Program addressed by the policy.

Changes which reduce the level of commitment previously accepted by the NRC are submitted to the NRC for review and acceptance prior to implementation. Other changes are submitted to the NRC within 90 days of the change.

3.3.2 Quality Assurance Program Procedures

The Director - Environmental & Quality Assurance is responsible for the preparation, approval and control of Quality Assurance Program Procedures for Design and Construction (Volume II) which cover Q-List-related activities for the Midland Nuclear Plant Project. The Executive Manager or Manager - MPQA reviews and approves those Volume II procedures.

3.3.3 Quality Assurance Program Departmental Procedures

The head of each department is responsible for the preparation, review, approval, distribution and control of departmental procedures which describe the departmental Q-List-related activities for the Midland Nuclear Plant Project.

3.3.4 Test Procedures

Test procedures required for the implementation of the construction and preoperational and hot functional test programs are prepared by personnel from the NSSS Supplier, A-E, Constructor and Consumers Power Company organizations. The Midland Project Office is responsible for coordinating the preparation, review, distribution and control of test procedures.

3.3.5 Special Process Procedures

Special Process Procedures, used during design construction and testing, are prepared and controlled by Consumers Power Company organizations or the suppliers who perform work for Consumers Power Company. Copies of procedures used at the Midland Nuclear Plant Site are retained by Consumers Power Company as records (refer to Quality Assurance Policy 17, "Quality Assurance Records"). Responsibilities for preparation and control of Special Process Procedures used by Consumers Power Company personnel are assigned as follows:

(a) Nondestructive Testing (NDT) Procedures - Manager, System Protection and Laboratory Services or Manager, Midland Project Quality Assurance (Midland Project QA NDT Procedures Only)

(b) Cleaning Procedures- Midland Technical Superintendent

3.3.6 Supplier Work Procedures

Preparation, review, approval and distribution of Supplier Work Procedures are by the individual suppliers.

3.3.7 Calibration Procedures

a. Preparation, review, approval, and distribution of calibration procedures for portable M&TE, when calibration responsibility has been assigned to SP&LS, are the responsibility of the Manager, System Protection and Laboratory Services. The Midland Technical Department has similar responsibility for plant installed instrumentation.

b. When contractors use calibration facilities other than SP&LS, Environmental and Quality Assurance and Midland Project Quality Assurance assures that those facilities have the appropriate calibration procedures for portable M&TE and Administrative controls for the preparation, review, approval and distribution of these procedures.

3.4 REVISIONS TO INSTRUCTIONAL DOCUMENTS

Revisions to procedures and instructions are processed, distributed and controlled as required by regulatory requirements.

CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

1.0 GENERAL

Suppliers furnishing Q-Listed materials, equipment and services are selected on the basis of their capability to provide these items. The Midland Project Office and the Midland Project Quality Assurance Department verify that procurement requirements are met. This is accomplished through review of procurement documents, source evaluation and inspection, audits and obtaining objective evidence of quality such as physical and chemical test reports and certificates of conformance.

If the material, equipment, or services is procured by Consumers Power principal suppliers, or their suppliers, these principal suppliers or suppliers verify that purchased items conform to requirements. Audits of these suppliers are conducted to verify that the established procurement controls are adequate and effective.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 7, Control of Purchased Materials, Equipment, and Services

b. ANSI N45.2, Criterion 8, Control of Purchased Material, Equipment, and Services

c. ANSI N45.2.2, Paragraph 5, Receiving

d. ANSI N45.2.13, Quality Assurance Requirements for Control of Procurement of Equipment, Materials, and Services for Nuclear Power Plants

e. ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components

3.0 POLICY

3.1 EVALUATION OF SUPPLIERS

The evaluation of suppliers is based on one or more of the following:

a. The ability of the supplier to currently comply with those elements of 10 CFR 50, Appendix B, and ANSI N45.2 and the daughter standards committed to by the Project that are applicable to the type of material, equipment and services being procured.

b. A review of previous records and performance of suppliers who have supplied similar articles.

c. An evaluation of the supplier's facilities and Quality Assurance Program, when no previous quality records are available, to determine the capability to supply a product which meets required design, manufacturing and quality requirements. Results of these evaluations are documented and filed in the appropriate Quality Assurance files.

An evaluation of technical and Quality Assurance capability is required for suppliers providing Q-Listed items or services to Consumers Power Company.

Quality Assurance evaluations are performed using source qualification programs, historical quality performance data, or source surveys or audits. Source qualification programs may include:

a. The ASME Nuclear Certifications Programs

b. The Nuclear Regulatory Commission Licensee Contractor and Vendor Inspection Program (LCVIP)

c. The Coordinating Agency for Supplier Evaluation Program (CASE)

d. Other Similar Programs

When such programs are used, the Midland Project Quality Assurance Department assures the suppliers' Quality Assurance Programs meet applicable elements of Policy 4.

Preaward evaluation of the principal supplier's Quality Assurance capability is the responsibility of the Midland Project Quality Assurance Department.

Design, fabrication and managerial capabilities of principal suppliers of nonconstruction contractor type services are evaluated by the Midland Project Office. Commercial capabilities of the principal supplier are evaluated by the Purchasing Department. When a specific supplier's program has been approved, this information is forwarded to the Purchasing Department by the Midland Project Office.

3.2 SELECTION OF SUPPLIERS

Selection of suppliers is based on the preaward evaluations and the capability of the supplier to provide established procurement requirements.

The Midland Project Office initiates purchase orders (via the Purchasing Department) for Q-Listed items and nonconstruction contractor services, other than engineering and construction field labor, with approved suppliers. Principal suppliers of contractor construction field labor are evaluated for construction and managerial capability by the Midland Project Office. The

Midland Quality Assurance Department evaluates the contractor's Quality Assurance Program.

3.3 AUDIT, SURVEILLANCE AND INSPECTION OF SUPPLIER OPERATIONS

The Manager - Quality Assurance, Midland Project, assures that qualified personnel are assigned to the supplier's facility to implement source inspection and surveillance requirements at predetermined points during the procurement cycle in accordance with inspection procedures, checklists and schedules. Based on the requirements, an inspection plan and checklist are prepared to outline the method of performance and to advise the supplier of his obligation to accommodate and respond to the requirements. The plan includes witness and hold points and tentative schedules.

Onsite and offsite audits of principal supplier operations are conducted to assure that all procurement requirements are met, with audit intervals consistent with the importance, complexity, and quality of the item or service provided. These audits are conducted in accordance with Quality Assurance Program Policy 18, "Audits."

Source surveillance or inspection, including designated hold points, are made a requirement of the procurement document when conditions such as the following exist:

a. Determination of conformance of the item to procurement document requirements at the site would require uneconomic disassembly or destructive testing.

b. Special instruments, gauges or facilities required for inspection or test at the source would be uneconomical to reproduce at the site.

c. Inspection at the site would require replacement of special preservation or packing.

d. Inspections and tests are an integral part of the manufacturing process and a physical verification prior to final assembly is necessary to assure the required quality.

3.4 RECEIVING INSPECTION

Receipt inspections are made to verify that the items are undamaged, that they conform to procurement requirements not verified by source surveillance or inspection, and that the required documentation is available. Documented evidence that the items meet requirements such as receiving inspection reports, physical and chemical test reports, and certification of conformance must be available at the plant site prior to installation or use of the

items. The Section Head - Audit & Management Systems assigns personnel to audit the procurement control activities of these onsite suppliers of services. In cases where documentary evidence is not available, the associated equipment or materials is considered nonconforming.

Until suitable documentary evidence is available to show the equipment or material is in conformance, affected systems are considered inoperable and reliance is not placed on such systems to fulfill their intended safety functions.

Nonconforming items are identified and controlled in accordance with Quality Assurance Program Policy 15, "Nonconforming Items."

IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

1.0 GENERAL

Consumers Power Company and its principal suppliers such as Architect-Engineers and NSSS suppliers, and their onsite suppliers exercise a system of controls to assure that only correct and accepted materials, parts and components (items) are used and installed. These items are identified by marking the items or by records traceable to the items. This identification is maintained from initial receipt throughout fabrication, installation, repair, modification and use of the items. The identification requirements applicable to each procurement are established by the suppliers or by Consumers Power Company with review by Midland Project Quality Assurance. Requirements for identification and control are incorporated into the appropriate procurement documents in accordance with the provisions established in Quality Assurance Program Policy 4, "Procurement Document Control."

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 8, Identification and Control of Materials, Parts, and Components

b. NRC Regulatory Guide 1.38, (3/16/73), Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (Endorses ANSI N45.2.2)

c. ANSI N45.2, Criterion 9, Identification and Control of Materials, Parts, and Components

d. ANSI N45.2.2, Paragraph 5.4, Status Indicating System, and Paragraph 5.6, Marking

3.0 POLICY

3.1 ITEM IDENTIFICATION

Physical identification is required where possible. Identification through documentation is required where physical identification is not practical. Identification requirements are such that the item identified can be traced to the associated documentation, such as drawings, specifications, Purchase Orders, manufacturing and inspection documents, deviation reports or physical and chemical mill test reports. Consideration is given to assure that the location and the method of identification do not affect the function or quality of the item being identified.

The Design Production Manager specifies in contracts or procurement documents that requirements for identification and marking be in accordance with

applicable codes, standards and Company requirements (eg, heat number, part number, serial number, lot number, etc). He obtains assistance as required from other appropriate organizations and the Midland Project Quality Assurance Department. The identification and marking requirements are incorporated into Consumers Power Company design and procurement documents and are made a part of the purchase orders or contracts placed with the Architect-Engineer, Constructor, Nuclear Steam Supply System supplier and other principal suppliers. These procurement documents also include requirements for the principal suppliers to place appropriate requirements for the identification, control and traceability of materials, parts and components on their lower tier suppliers.

Audit & Management Systems audits to verify that items are properly identified.

3.2 ITEM CONTROL

Items are inspected upon receipt at the plant site by the supplier of construction services. These inspections include checks to verify that the items are properly marked for identification purposes when specified as a requirement in the procurement documents.

During subsequent fabrication and installation of the items, in-process surveillance is made by Midland Project Quality Assurance personnel and inspection by the construction contractor's onsite inspection personnel to verify that the required identification is not obliterated or hidden. Identification markings are maintained for each part of an item or on records traceable to the item.

If the required identification is missing, obliterated or hidden, the item is identified as nonconforming and is placed in a segregated area, where practical. The item cannot be used until its identification marking conforms to the procurement document, drawing or specification requirements.

CONTROL OF SPECIAL PROCESSES

1.0 GENERAL

The Midland Project Office is responsible for requiring the principal supplier or the responsible Consumers Power Company department that uses special processes to develop and implement requirements of appropriate codes, standards or specifications as indicated in the design or procurement documents. Principal suppliers require their lower tier suppliers to implement these requirements. Whether performed by Consumers Power Company or a principal supplier, special processes are performed using qualified procedures, equipment and personnel.

The responsible Department Managers assure that special process procedures are prepared in accordance with Quality Assurance Program Procedures. Special Process Procedures contain the necessary prerequisites, personnel requirements and qualification test procedures and limitations, acceptance criteria or standards, results interpretation, records, etc, as applicable to the particular requirements of the methods and material employed.

For such special processes such as welding, heat-treating, chemical analysis, nondestructive testing and cleaning, where the required level of quality cannot be measured by inspection only of the item, Consumers Power Company, its suppliers and their lower-tier suppliers accomplish these processes under controlled conditions in accordance with applicable codes, standards and specifications using qualified procedures, equipment and personnel. For special processes not covered by codes or standards, qualifications of procedures, equipment and personnel are specified.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 9, Control of Special Processes

b. NRC Regulatory Guide 1.58, Rev 1, Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel (Endorses ANSI N45.2.6)

c. ANSI N45.2, Criterion 10, Control of Special Processes

d. ASME Boiler and Pressure Vessel Code:

   (1) Section III, Nuclear Power Plant Components and Appendix IX, Nondestructive Examination Methods

   (2) Section V, Nondestructive Examination

   (3) Section IX, Welding Qualifications

(4) Section XI, Rules for Inservice Inspection of Nuclear Reactor Coolant Systems

e. SNT-TC-1A and Supplements, American Society for Nondestructive Testing Recommended Practices

3.0 POLICY

3.1 PROCESS QUALIFICATION AND CONTROL

Special processes are performed by either Consumers Power Company or supplier personnel. When special processes are performed by Consumers Power Company, the requirements are established during the design phase by the Design Production Manager with assistance from other Consumers Power Company departments as required. When performed by a supplier, the requirement to perform special processes in accordance with applicable specifications, codes and standards is made a provision of the procurement documents placed with Consumers Power Company principal suppliers such as the Architect-Engineer, Constructor and NSSS supplier. These principal suppliers are also required to establish provisions for the control of special processes in their lower-tier procurement documents. Whether performed by Consumers Power Company or its principal supplier, special processes are accomplished with written process sheets, shop procedures, checklists, travelers or equivalent with recorded evidence of verification. Qualification records of procedures and equipment associated with special processes are available and maintained. Personnel are assigned by the Midland Project Quality Assurance Department and the Midland Project Design Production Department with assistance, as requested, from other departments or organizations to review the process control requirements placed in procurement documents as indicated in Quality Assurance Policy 4, "Procurement Document Control."

3.2 PERSONNEL QUALIFICATION

Consumers Power Company and supplier personnel responsible for the performance of special processes are qualified in accordance with applicable codes, specifications and standards. This includes conducting the necessary training and examinations to determine the capability of each individual. Qualification records of personnel associated with special processes are established, filed and kept current. The period of validity for qualifications will be in accordance with applicable codes, specifications and standards. The Midland Project Quality Assurance Department monitors the process control activities of onsite personnel or suppliers during construction, installation, preoperational and hot functional testing activities.

CONTROL OF SPECIAL PROCESSES

3.3 PROCESS CONTROL RECORDS

Consumers Power Company and supplier personnel performing special processes maintain records to verify that the required activities were accomplished in accordance with qualified procedures by qualified personnel. These records are maintained as indicated in Quality Assurance Policy 17, "Quality Assurance Records."

INSPECTION

1.0 GENERAL

Inspection and surveillance are performed to assure that activities affecting quality comply with documented instructions, design documents and applicable codes and standards. When direct inspection of an item cannot be performed or is impractical, surveillance of the process or procedure and the resulting documentation assure compliance. Inspection and surveillance are performed according to written instructions.

Inspection procedures, instructions and checklists used by personnel checking the quality of work, provide the following:

a. Identification of characteristics to be inspected.

b. Identification of individuals or groups responsible for performing the inspection.

c. Acceptance and rejection criteria.

d. Description of the method of inspection.

e. Verification of completion and certification of inspection.

f. Record of results of inspection.

g. Provision for identifying mandatory inspection hold points for witness by an authorized inspector.

h. Provision for indirect control by monitoring processing methods, equipment and personnel if direct inspection is not possible.

Procedures for receipt inspections are either prepared or reviewed by Quality Assurance personnel (Consumers Power Company or its principal suppliers) to determine the need for an independent inspection and the degree and method if such an inspection is required and to assure the identification of inspection personnel and the documentation of inspection results.

An inspection is made upon completion of work on a system or component prior to declaring the system operable. Surveillance of procedures and inspection activities is performed according to a scheduled, planned program.

The organization (eg, corporation) responsible for the work normally performs the inspections. The personnel performing inspections have the necessary qualifications and are independent of the supervisor directly responsible for performing the work being inspected.

INSPECTION

Midland Project Quality Assurance is responsible for assuring adequate inspection and surveillance activities. Audit & Management Systems is responsible for audit of the inspection and surveillance activities. Nonconformances are documented according to Quality Assurance Program Policy 15, "Nonconforming Items."

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 10, Inspection

b. 10 CFR 50, Paragraph 50.55a, Codes and Standards

c. NRC Regulatory Guide 1.30, (8/11/72), Quality Assurance Requirements for Installation, Inspection and Testing of Instrumentation and Electric Equipment (Endorses ANSI N45.2.4)

d. NRC Regulatory Guide 1.58, Rev 1, Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel

e. ANSI N45.2, Criterion 11, Inspection

f. ANSI N45.2.8, Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

g. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components

h. ASME Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components

3.0 POLICY

3.1 INSPECTION AND SURVEILLANCE

Work activities are performed by Consumers Power Company personnel and by contractors and suppliers. These work activities are accomplished according to approved procedures or instructions which include inspection hold points beyond which the work does not proceed until the inspection is complete or written consent for bypassing the inspection has been received from the organization authorized to perform the inspection. Midland Project Quality Assurance and/or supplier quality control personnel perform inspections or witnessing of inspections at each hold point and upon completion of the identified segment of work. The inspection includes review and verification of the related documentation. The results of inspections are documented and

nonconformances are reported as indicated in Quality Assurance Program Policy 15, "Nonconforming Items."

Consumers Power Company and/or suppliers provide qualified personnel, procedures, equipment and measuring devices as necessary to conduct inspections as indicated in Quality Assurance Program Policy 9, "Control of Special Processes."

The Midland Project Quality Assurance Department performs inspections and overinspections of supplier inspection activities. Inspections and overinspections are performed in accordance with inspection plans and written procedures.

3.2 INSERVICE INSPECTION

Inspections which provide the baseline for inservice inspection are performed at the direction of the Manager of Design Production, in accordance with written procedures. The Design Production Department and, when required, assisted by other organizations, is responsible for coordinating the development of baseline inspection procedures for their approval and control and for design criteria for arrangement of components for adequate clearance for inspection.

The procedures are prepared according to the applicable requirements of the ASME Boiler and Pressure Vessel Code, the SAR and NRC Regulatory Guide 1.51. Results of baseline inspections are maintained as lifetime plant records in the Document Storage Room in the General Office.

Records of baseline and inservice inspection results, corrective action, standards for repair, results of inspections of repairs and baseline inspections of replacements are maintained and compared with the results of subsequent inservice inspections.

TEST CONTROL

1.0 GENERAL

The following are tests conducted during the construction of the Midland Nuclear Plant:

a. Construction Tests - Those tests necessary to verify that the installation of systems is complete and complies with the applicable specifications, standards, codes, drawings and engineering information. It includes tests such as hydrostatic testing, megger testing, continuity testing and cleanliness testing.

b. Preoperational Tests - Tests prior to initial fuel loading and plant operation to demonstrate the capability of structures, systems and components to meet performance requirements.

c. Hot Functional Tests - Tests conducted at completion of preoperational tests. The Nuclear Steam Supply Systems and auxiliary systems, where possible, are brought to rated temperature and pressure to demonstrate satisfactory performance.

Tests are performed according to written procedures and the test results are documented. Tests are conducted by trained, qualified or licensed personnel. The construction contractor provides and implements appropriate construction tests.

The Midland Technical Superintendent is responsible for the development and implementation of checkout, preoperational and hot functional test procedures.

During construction, testing of modifications, repairs and replacements is in accordance with the original design and testing requirements, or acceptable alternatives, and is procedurally controlled.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 11, Test Control

b. NRC Regulatory Guide 1.30, (8/11/72), Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment (Endorses ANSI N45.2.4)

c. NRC Regulatory Guide 1.68, (Nov 1973), Preoperational and Initial Test Programs for Water-Cooled Power Reactors

d. ANSI N45.2 Criterion 12, Test Control

e. ANSI N45.2.8, Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

3.0 POLICY

3.1 TEST PROCEDURES

Construction test procedures are prepared by the supplier of construction services or Consumers Power Company with coordination of preparation, review and control by the Midland Project Office. Preoperational, checkout and hot functional test procedures are provided by the Midland Technical Superintendent with assistance from the NSSS Supplier, A-E, Constructor and Consumers Power Company Engineering organizations, as necessary. The Midland Site Manager is responsible for the preparation of the Midland Project Testing Program Manual which delineates: A planned program for preoperational and hot functional testing, as applicable; defines the test organization and objectives; identifies responsibilities and provides an index of Testing Program Manual procedures. The Midland Project Testing Program Manual is reviewed and approved by the Vice President - Nuclear Operations; the Vice President - Projects, Engineering and Construction, the Director - Environmental and Quality Assurance; the Manager MPQA; the Site Manager; and the Director, Quality Assurance - Nuclear Operations or assigned delegates.

Test procedures which include prerequisites, requirements and acceptance limits are provided by the organization responsible for the design of the item, unless otherwise designated. The procedures also specify the required test equipment, its accuracy, acceptable calibration status and recording requirements. Hold points are identified in the test procedures where witnessing of the tests is required. Test results are documented and checklist and data sheets may be attached as addenda to complex procedures.

3.2 CONDUCT OF TESTS

3.2.1 Construction Tests

Construction tests are performed and documented by supplier or Consumers Power Company personnel with surveillance by Midland Project Quality Assurance. Documented test results are retained for record.

3.2.2 Preoperational and Hot Functional Tests

Midland Project Quality Assurance and Technical Department personnel review and evaluate the completion of systems construction and installation prior to turnover to Consumers Power Company for testing.

TEST CONTROL

Midland Project Quality Assurance also assures that construction testing prerequisites have been met prior to running of preoperational and hot functional tests. The Midland Project Technical Superintendent coordinates system turnover and the implementation of preoperational and hot functional testing activities.

The Midland Project Quality Assurance Department in coordination with Audit & Management Systems performs audits or surveillance of the test activities to assure that tests are performed in accordance with written procedures, results are documented, test results are reviewed and approved according to the Midland Project Testing Program Manual and nonconformances or test anomalies are dispositioned prior to initial start-up tests.

CONTROL OF MEASURING AND TEST EQUIPMENT

1.0 GENERAL

Devices used for quality verification which are utilized to calibrate, measure, gauge, test or inspect Q-Listed materials, components, parts, systems and structures are controlled, calibrated and records maintained in accordance with approved procedures. Calibration of portable and laboratory measuring and test equipment is performed at prescribed intervals or prior to use using secondary or reference standards which are traceable to nationally recognized standards. Where no standards exist, the basis for calibration is documented. Approved procedures prescribe the method and the interval of calibration based on the type of equipment, stability, required accuracy and other conditions affecting measurement control. A calibration control recall system is established to assure calibration prior to the equipment calibration expiration date and tags or labels are attached which identify the calibration status. Special calibrations are performed when the accuracy of equipment is suspect. When equipment is found to be consistently out of calibration, it is repaired or replaced. Nonconforming test and measuring equipment is identified and controlled and evaluations are conducted to determine the validity of previous inspections or tests which utilized the defective equipment. Calibration records are maintained and controlled. The Project Manager is responsible for assuring that the A-E, NSSS Supplier, Constructors, principal suppliers and Consumers Power Company organizations develop procedures to maintain and control measuring and test equipment within their respective areas. The responsible Quality Assurance organizations assures compliance to procedures through surveillance and audits.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 12, Control of Measuring and Test Equipment

b. ANSI N45.2, Criterion 13, Control of Measuring and Test Equipment

3.0 POLICY

3.1 MEASURING AND TEST EQUIPMENT LIST

Lists of measuring and test equipment required for construction and construction testing are developed by the A-E, constructor or other suppliers. The lists identify the test equipment, method and interval of calibration. The availability of these lists and the control of measuring and test equipment on the lists are audited by Audit & Management Systems.

Lists of measuring and test equipment required for preoperational and hot functional testing are prepared at the direction of the Midland Technical

Superintendent. Included on lists of measuring and test equipment are test equipment and laboratory test equipment.

3.2 PROCEDURES

Calibration control procedures are prepared by the group who provide the measuring and test equipment. A calibration recall system for portable and laboratory test equipment (PL-M&TE) and standards, which identifies when calibration is required, is developed, documented by procedures and maintained by the group who is using the equipment. Action is taken to recalibrate the equipment before the expiration date or prior to use.

When a user group assigns complete calibration and repair of M&TE responsibilities to SP&LS, the recall system is developed, documented by procedures and maintained by the Calibration and Instrument Services Supervisor, SP&LS. The user group is notified prior to calibration expiration dates to return the M&TE.

Calibration procedures require that Reference Standards used for calibrating PL-M&TE have an uncertainty (ie, error) requirement of no more than one-quarter of the tolerance of the equipment being calibrated. A greater uncertainty may be acceptable where limited by the accuracy of commercially available standards. All other PL-M&TE (including Secondary Standards) have an uncertainty requirement of less than or equal to the tolerance of the equipment being calibrated.

The procedures are submitted for review and approval in accordance with Quality Assurance Program Policy 6, "Document Control."

3.3 CALIBRATION

Calibration procedures are prepared by the group responsible for calibration of the measuring and test equipment. The procedures are submitted for review and approval in accordance with Quality Assurance Program Policy 6, "Document Control." The calibration system provides that measuring and test equipment and standards are maintained and used in an environment which will not adversely affect their accuracy. Certification of traceability to nationally recognized standards is supplied by the facility performing the calibration. When no National Standard exists, the basis for the calibration is documented.

Portable measuring and test equipment and standards are identified with a label or tag which describes the calibration status and includes a traceable identification number. Equipment which is not identified or has an expired calibration date is withheld from use.

Midland Project Quality Assurance and Audit and Management Systems audits to assure proper calibration, according to procedures, within the recall period, and that equipment and instruments are identified and their calibration status indicated.

3.4 NONCONFORMANCES

Failure of portable measuring and test equipment, standards or installed instrumentation and control equipment to successfully pass accuracy requirements at the time of calibration or which become suspect prior to calibration is reported using a nonconformance reporting system. Evaluations are conducted to determine the validity of previous tests, inspections or operations which utilized the defective or suspect equipment and the results of evaluations documented. If the evaluation is negative, materials, components, parts, systems and structures which were verified by the tests or inspections are considered nonconforming.

3.5 RECORDS

Records of portable measuring and test equipment and standards used during construction and preoperational, hot functional and start-up testing are traceable to the test and inspections performed. Consumers Power Company calibration records of installed instrumentation and control equipment are maintained and controlled. These records are traceable to the test equipment calibration record and, when necessary, to the standard calibration record. Records are retained for the period identified in the Safety Analysis Report or Departmental Procedures in accordance with Quality Assurance Program Policy 17, "Quality Assurance Records."

HANDLING, STORAGE, AND SHIPPING

1.0 GENERAL

The Midland Project Office assures that the principal suppliers, such as the Architect-Engineer, Nuclear Steam Supply System supplier and constructor prepare procedures and instructions to control the handling, packaging, preservation, storage, lay-up, cleaning and shipping of Q-Listed items. When necessary, special protective covering, equipment identification and environmental conditions are specified. Midland Project Quality Assurance Department personnel verify compliance to procedures and instructions through inspections and audits. Also, Audit & Management Systems conducts audits to assure that the controls for handling, storage and shipping are established, implemented, adequate and effective.

Suppliers of items shipped to Consumers Power Company provide control of their storage, handling and shipping activities as specified by procurement documents.

Special handling tools and equipment are inspected and tested at specified times to verify that they are being adequately maintained.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 13, Handling, Storage, and Shipping

b. NRC Regulatory Guide 1.37, (3/16/73), Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components (Endorses ANSI N45.2.1)

c. NRC Regulatory Guide 1.38, (3/16/73), Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (Endorses ANSI N45.2.2)

d. NRC Regulatory Guide 1.39, (3/16/73), Housekeeping Requirements for Water-Cooled Nuclear Power Plants (Endorses ANSI N45.2.3)

e. NRC Regulatory Guide 1.54, (June 1973), Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants (Endorses ANSI N101.4)

f. ANSI N45.2, Criterion 14, Handling, Storage, and Shipping

HANDLING, STORAGE, AND SHIPPING

3.0 POLICY

3.1 SPECIAL HANDLING PRIOR TO SHIPMENT

Requirements for special handling and storage, including cleaning, packaging and preservation of Q-Listed materials, spare parts and equipment, prior to shipment by the manufacturer or supplier, are conditions of the procurement documents prepared in accordance with Quality Assurance Program Policy 4, "Procurement Document Control." When required, the supplier or manufacturer prepares written procedures that provide special handling and storage instructions.

3.2 PREPARATION FOR SHIPMENT

Special requirements for protective packaging, preservation and segregation of materials, shipping method, shipping containers, cleanliness, pressurization, desiccation and labeling of purchased items are specified in the procurement document. When the preparation for shipment is extensive or involves special considerations, the supplier prepares written procedures which address Regulatory Guides 1.37, 1.38 and 1.39, as applicable.

Source inspections by Consumers Power Company, Architect-Engineer, constructor or other supplier personnel may be employed to assure proper preparation for handling and shipping. Source inspection, when used, is specified in the procurement documents and the inspection results are documented for use.

3.3 RECEIPT AND STORAGE

Suppliers provide plans, facilities, handling equipment, procedures and personnel to receive, inspect, store, maintain and control items upon arrival at the site. Items, when inspected upon receipt, are identifed by marking or tagging in accordance with Quality Assurance Program Policy 8, "Identification of Materials, Parts, and Components." When required, a supplier also maintains storage and inventory records applicable to the items which are acceptable for use.

Preservation and special onsite storage conditions, such as inert gas atmosphere, humidity controls, special cleanliness requirements, etc, are provided as specified in written instructions which address Regulatory Guides 1.37, 1.38 and 1.39. Midland Project Quality Assurance assures through periodic inspection, surveillance and audits that supplier personnel adhere to the written instructions, follow acceptable housekeeping practices and proper use of storage facilities and handling equipment. Audit & Management Systems conducts audits to assure that the controls for handling, storage and shipping are established, implemented, adequate and effective.

INSPECTION, TEST, AND OPERATING STATUS

1.0 GENERAL

The principal suppliers, such as the Architect-Engineer, Constructor and other responsible onsite suppliers provide indicators which show the inspection, test and operating status of plant structures, systems and components. The Midland Technical Superintendent provides indicators which show the inspection, test and operating status of items during preoperational and hot functional testing. The appropriate Quality Assurance organization conducts audits to verify compliances to the established requirements.

Bypassing/resequencing of required inspections, tests and other critical operations is procedurally controlled to assure that bypassed/resequenced inspections or tests are properly documented and that the effect of bypasssing/resequencing the inspection or test is evaluated by the organization responsible for specifying the inspection or test.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 14, Inspection, Test, and Operating Status

b. ANSI N45.2, Criterion 15, Inspection, Test, and Operating Status

3.0 POLICY

3.1 INDICATION OF STATUS BY THE RECEIVING ORGANIZATION

Q-Listed items received at the plant site are identified and controlled by the responsible receiving organization at the site in accordance with the receiving organization's approved procedures. These procedures define the methods used to assure identification as to inspection or test status, traceability to manufacturers and log and status of the item with respect to release for use. The procedures also include requirements for the identification and control of nonconforming items, items removed from subassemblies, in-process systems and equipment and the status of related tests and inspections. Devices such as receiving and in-process inspection reports, nonconformance logs, hold tags and reject tags are used to indicate the status of the items.

3.2 INDICATION OF STATUS BY CONSUMERS POWER COMPANY

The Midland Technical Superintendent identifies the inspection, test and operating status of systems undergoing preoperational and hot functional testing in accordance with documented procedures. These procedures include requirements for the use of Workmen's Protection Tags, Caution Tags, Equipment Turned Over Tags and test procedures.

NONCONFORMING ITEMS

1.0 GENERAL

Procedural controls are established for identifying, documenting, segregating, reviewing, reporting and disposing of nonconforming Q-Listed materials, parts, components or services.

Items, services or activities which are deficient in characteristic, documentation or procedure which renders the quality unacceptable or indeterminate and which is considered significant to safety are identified as nonconformances. Nonconforming items (structures, systems, components, parts, materials) are identified by marking, tagging, segregating or by documentation. Nonconforming items are controlled to prevent their inadvertent installation or use. The nonconformance is evaluated to determine a disposition for the item; ie, repair, rework, use-as-is, scrap or test to determine quality of the item; and the evaluation and disposition is documented. Nonconforming items and activities are recorded and are considered for corrective action to prevent recurrence in accordance with Quality Assurance Program Policy 16, "Corrective Action." The Executive Manager - Midland Project Quality Assurance is responsible for assuring that nonconformances are documented and controlled. The Director - Environmental and Quality Assurance is responsible for assuring that nonconformances resulting from E&QA audits are documented and controlled.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 15, Nonconforming Materials, Parts, or Components

b. 10 CFR 50, Section 55, Conditions of Construction Permits, Paragraph (e) (10 CFR 50.55(e))

c. ANSI N45.2, Criterion 16, Nonconforming Items

3.0 POLICY

3.1 RESPONSIBILITY FOR CONTROL OF NONCONFORMANCES

Control of nonconformances during the design and construction phase and during tests prior to initial fuel loading are the responsibility of the Consumers Power Company organizations responsible for the work. This activity may be delegated to the A-E, NSSS Supplier, constructor and other principal suppliers. These suppliers prepare procedures for nonconformance identification, disposition, reporting to Consumers Power Company and corrective action. Consumers Power Company organizations are responsible for notifying the applicable Quality Assurance organization of nonconformances observed or discovered as a result of inspection, calibration, test or

organizations are responsible for documenting and controlling Consumers Power Company issued nonconformances. They also assure adherence to procedures by suppliers and Consumers Power Company organizations by surveillance and audits and monitor status of nonconformances. Status reports are submitted to the Vice President - Projects, Engineering and Construction.

3.2 IDENTIFICATION AND DOCUMENTATION OF NONCONFORMANCES

When a nonconforming item or activity is discovered or observed, the responsible supplier or Consumers Power Company organization assures that the condition is documented and that nonconforming items are tagged, marked, segregated or controlled to prevent inadvertent use or installation until the items are properly dispositioned.

3.3 RESOLUTION AND DISPOSITION OF NONCONFORMANCES

Nonconformances are reviewed and an investigation made to determine the extent and effect of the nonconformance. The review and investigation is made by technically qualified personnel designated by the suppliers and Consumers Power Company Department Heads responsible for the item, area or activity. Upon completion of the review and investigation, the disposition of the condition and (when appropriate) action to prevent recurrence is documented.

Acceptability of rework or repair of equipment, material, components or parts is verified by reinspecting the item as originally inspected or by a method which is at least equal to the original inspection method and by documented inspection rework and repair procedures. Nonconforming items dispositioned "use-as-is" and "repair" having departures from design specifications and drawing requirements are reviewed and approved by the principal supplier, if applicable, and by the appropriate Quality Assurance organization.

The responsible Quality Assurance organization assures by audits the disposition, completion and resolution of nonconformances.

3.4 SIGNIFICANT NONCONFORMANCES

Nonconformances identified by either a supplier or Consumers Power Company organization, are reviewed by the Midland Project Quality Assurance Department. Nonconformances identified during preoperational and hot functional testing, by either a supplier or Consumers Power Company organization, are reviewed by the Site Management Office. Significant nonconformances meeting the criteria set forth in 10 CFR 50, Section 55, Paragraph (e), are reported to Management and the NRC by the Manager - Midland Project Quality Assurance according to Quality Assurance Program Policy 20, "Program Reporting."

NONCONFORMING ITEMS

Midland Project Quality Assurance according to Quality Assurance Program Policy 20, "Program Reporting."

CORRECTIVE ACTION

1.0 GENERAL

Corrective action is that action taken to correct and preclude recurrence of significant conditions adverse to the quality of items or activities. Conditions or trends observed or identified which are adverse to quality are considered for corrective action; however, nonconformances or departures from specified requirements which are not significant to safety, occur randomly, are of a minor nature or which are routinely corrected without the need for a technical evaluation may not require corrective action. Corrective action includes an evaluation of the conditions that led to a nonconformance, the disposition of the nonconformance and completion of the action necessary to prevent or reduce the possibility of recurrence. Nonconformances are evaluated to determine the need for corrective action under the control of established procedures. Corrective action is documented and corrective action status is reported to Management. The organization responsible for the item or activity identified for corrective action is responsible for completion of the action and maintaining corrective action status. The Quality Assurance organizations are responsible for verifying completion of corrective action for their respective responsibility areas.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 16, Corrective Action

b. 10 CFR 50, Paragraph 50.55, Conditions of Construction Permits

c. ANSI N45.2, Criterion 17, Corrective Action

3.0 POLICY

3.1 INITIATION OF CORRECTIVE ACTION

Corrective action is initiated to correct conditions adverse to the quality of items and activities. The head of the organization or department responsible for the item or activity is responsible for initiating action to correct the immediate condition. He is also responsible for evaluating the condition to determine if additional action is required to prevent or reduce the possibility of recurrence. Conditions which require additional action to prevent recurrence are a matter of judgment, but the following conditions are always evaluated:

a. Failure of Q-Listed structure, system, component or part which is significant to safety.

b. Defect of a Q-Listed item that could, if uncorrected, lead to failure or malfunction which is significant to safety.

c. An in-use or inservice instrument or item of test equipment that is found to be out of calibration or has exceeded the calibration due date.

d. Repetitive minor problems or defects which may be symptomatic of a larger problem.

e. Significant deficiencies identified during quality audits.

f. Unsatisfactory conditions which could contribute to major damage, personnel injury or schedule delays.

g. Unsatisfactory conditions identified by the NRC.

In general, corrective action is initiated to correct conditions adverse to quality and additional action is taken to prevent recurrence of significant nonconformances, occurrences reportable to NRC, unsatisfactory conditions and audit deficiencies.

3.2 DOCUMENTING CORRECTIVE ACTION

Action taken to correct a nonconforming item or activity is documented. If additional action (including evaluation, investigation or analysis) is required to prevent recurrence, the required action is indicated.

If significant additional action (including evaluation, investigation or analysis) is required to prevent recurrence, a separate corrective action report is initiated to assign and document the required action.

3.3 REPORTING CORRECTIVE ACTION

The Executive Manager, Midland Project Quality Assurance and the Manager, MPQA review Consumers Power Company nonconformance reports and replies to provide an overview and to assure the general adequacy of the corrective action implementation system. A monthly report on overall MPQA activities and Quality Status Meetings are utilized to highlight significant items to Project management.

The Director - Environmental and Quality Assurance reviews E&QA audit reports to provide an overview and to ensure the general adequacy of the corrective action implementation system. A monthly audit finding status report is used to highlight significant items.

It is the responsibility of the Vice President - Projects, Engineering and Construction to transmit pertinent nonconformance reports and replies to the President and Chief Executive Officer.

CORRECTIVE ACTION

3.4 CORRECTIVE ACTION BY SUPPLIERS

Suppliers, including the A-E, NSSS Supplier, Constructor and others who provide major items of equipment or who perform services, implement and follow a system for corrective action according to the supplier's approved procedures. Individual corrective actions are documented by the supplier and are reviewed by Midland Project Quality Assurance Department or Audit and Management Systems. Requests for supplier's corrective action may be initiated by Consumers Power Company organizations by use of a nonconformance report, in which case the completion is documented and reported.

QUALITY ASSURANCE RECORDS

1.0 GENERAL

Consumers Power Company and its suppliers compile records as specified in applicable procedures, codes, regulatory requirements, National Standards and SARs and transmit them to the appropriate storage facilities.

The Midland Project Administrative Department in conjunction with other support groups, eg, Environmental & Quality Assurance and Midland Project Quality Assurance, determines and identifies the documents that are to be retained for the project, who must retain them and the duration they must be retained. These requirements are also placed on the suppliers through appropriate provisions in procurement documents and on Consumers Power Company departments through documented procedures.

Examples of the types of records retained include procurement documents, procedures, nondestructive examination results, inspection and test results, material analyses, qualification results, calibration records, nonconformances and corrective action results. Inspection and test records, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability and action taken in connection with any deficiencies noted.

The Management and Budget Department/Management System Section and the Transmission Department Services/Engineering Records Center, in conjunction with other line support departments, establishes and maintains the Records Management System with appropriate indexes for location of the records. Additional controls include storage of records in secured areas, in a manner that precludes their loss or deterioration. Copies of required lifetime and nonpermanent records to be maintained by Consumers Power Company which are generated during the project are ultimately forwarded to the General Office or the Plant Document Control Center. Drawings and specifications are forwarded to the Engineering Records Center.

The Midland Project Administrative Manager is responsible for the preparation of the Midland Project Records Management Program and Procedures Manual which delineates a planned program for the project's record management program; identifies the records management organization and identifies responsibilities for identifying, receiving, indexing, storage and control of records.

These records include documents such as specifications, "as-built" engineering drawings, final manufacurers' drawings, instruction manuals, results of surveillance, audits, inspections and tests and closely related data such as qualification of personnel, procedures and equipment. Provisions are included in the Manual for record retention period, storage location and transmittal requirements.

QUALITY ASSURANCE RECORDS

The Manual is reviewed and approved by the Vice President - Projects, Engineering and Construction; the Executive Manager or the Manager - MPQA; the Director - Environmental and Quality Assurance; the Vice President - Nuclear Operations; the Director - Management and Budget; and the Director - Quality Assurance - Nuclear Operations.

The Procedure section of the manual is reviewed and approved by the Manager - Midland Project Administrative Department, The Executive Manager or Manager - MPQA, the Director - Environmental & Quality Assurance and other affected department heads.

When specific design, construction, preoperational test and hot functional test activities have been completed, the remaining records are forwarded for storage. Record copies or original records are retained in the General Office, or Plant Document Control Center or the Engineering Records Center, as applicable.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 17, Quality Assurance Records

b. ANSI N45.2, Criterion 18, Quality Assurance Records

c. ANSI N45.2.9, Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants

3.0 POLICY

3.1 SUPPLIER RECORDS

Consumers Power Company principal suppliers, their subtier suppliers and other suppliers are required to identify and classify Quality Assurance records in accordance with requirements established during the design phase by the Midland Project Office or plant staff with assistance from other Consumers Power Company departments, the Architect-Engineer, NSSS Supplier or other principal suppliers. The suppliers are required to maintain record management systems in accordance with appropriate provisions of ANSI N45.2.9, "Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants." Upon completion of their contract, the suppliers either continue maintaining the records or forward them to Consumers Power Company for incorporation into the Consumers Power Company Records Management System.

QUALITY ASSURANCE RECORDS

3.2 CONSUMERS POWER COMPANY RECORDS

Records or copies of records necessary for plant operations are retained by the Plant Document Control Center. Design output documents are retained by the Engineering Records Center.

The Midland Project Departments, System Protection and Laboratory Services, Purchasing, Environmental and Quality Assurance, and General Services and other appropriate departments prepare Department Procedures covering the requirements for the identification, indexing, retention, storage, retrieval and eventual transfer of those quality records which are to be stored by the Plant or General Office Document Control Centers and the Engineering Records Center, as applicable.

AUDITS

1.0 GENERAL

The Director - Environmental & Quality Assurance (E&QA) and the Executive Manager/Manager, Midland Project Quality Assurance (MPQA) are responsible for development and management of the Consumers Power Company Quality Assurance Audit Program for the Midland Project. To implement the audit programs, specific audit responsibilities are assigned to Quality Assurance personnel in the respective organization. Audits to verify compliance to the requirements of the Quality Assurance Program are conducted by qualified personnel who have no responsibilities in the areas audited. The audits are performed in accordance with established schedules using an audit plan and audit checklists. Audit results are documented and the findings are resolved with the supervisory heads of the audited organizations. Follow-up action, including reaudit, is taken to verify that deficiencies are corrected. Audit results are reported to management personnel involved in the Quality Assurance Program.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 18, Audits

b. ANSI N45.2, Criterion 19, Audits

c. ANSI N45.2.12, Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants

d. ANSI N45.2.23, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants

3.0 POLICY

3.1 QUALITY ASSURANCE PROGRAM AUDITS

Audits of the Quality Assurance Program for the Midland Nuclear Plant are performed at least once every 24 months or once every second calendar year in accordance with schedules established by E&QA and MPQA to verify that the requirements identified in the Quality Assurance Program Manual for the Midland Nuclear Plant are being implemented by the responsible Consumers Power Company personnel. The audits are accomplished by an audit team consisting of E&QA or MPQA personnel, selected employees from other Consumers Power Company departments or by an audit team of Quality Assurance personnel under contract to Consumers Power Company.

The designated audit team is made up of personnel from departments other than the department being audited. Results of the corporate audits are provided to the Vice President - Projects, Engineering and Construction. It is the responsibility of the Vice President - Projects, Engineering and Construction, to evaluate and approve recommendations therefrom and to inform the President and Chief Operating Officer of the Company of pertinent audit results.

3.2 QUALIFIED SUPPLIER AUDITS

The Midland Project Quality Assurance Department provides Quality Assurance personnel to conduct preaward evaluations of prospective Consumers Power Company principal suppliers. Preaward evaluations including audits, where required, are conducted to verify that the principal supplier's Quality Assurance Program meets the appropriate procurement and Quality Assurance requirements prior to placement of the order. Audit team representatives may be selected from other Consumers Power Company departments, based on the type of product or service to be purchased and the technical background required.

Postaward Audits, where required, of principal offsite suppliers and certain other suppliers are also conducted on a periodic basis or at least once within the life of the contract, whichever is shorter. These audits are conducted to verify implementation of Quality Assurance requirements. Additional audits may also be made when the supplier extensively reorganizes, when deficiencies or nonconformances are discovered or to verify implementation of required corrective action.

3.3 DEPARTMENT AUDITS

Environmental and Quality Assurance personnel perform audits of the Consumers Power Company departments having quality-related responsibilities. The audits are conducted to verify that the quality-related responsibilities assigned to the departments by the Vice Presidents are being carried out. The audits are accomplished by evaluating compliance to Quality Assurance Program Procedures and compliance to Department Procedures issued by the Consumers Power Company departments involved in the Quality Assurance Program. The results of these audits are documented and reported to the responsible Department Directors or Managers and follow-up action, including reaudits, is taken to verify closeout of items requiring corrective action.

3.4 CONSTRUCTION AUDITS

E&QA and MPQA personnel perform audits of the activities of onsite suppliers (ie, Architect-Engineer, Constructor, etc) and Consumers Power Company departments during construction. Audits are conducted in accordance with established schedules to verify that these suppliers or Consumers Power

AUDITS

Company departments are implementing their own Quality Assurance Program and to verify the correct accomplishment of construction activities such as receiving inspection, storage, handling, welding, concrete pouring, nondestructive examination, construction testing, preoperational and hot functional testing. Audits of preoperational and hot functional testing are conducted jointly by, or in coordination with, Midland Project Quality Assurance, Environmental and Quality Assurance and Quality Assurance - Nuclear Operations. The results of the audits are documented and corrective action is obtained when required.

PROGRAM REVIEW

1.0 GENERAL

The Executive Manager/Manager, Midland Project Quality Assurance are responsible for the review of the Quality Assurance Programs of Consumers Power Company's Suppliers and lower-tier Suppliers. The Executive Manager - MPQA and the Director - Environmental & Quality Assurance are responsible to review the Quality Assurance Program of Consumers Power Company. The results of these reviews are reported to Consumers Power Company Vice Presidents responsible for the respective activities.

2.0 BASIS DOCUMENTS

a. 10 CFR 50, Appendix B, Criterion 2, Quality Assurance Program

b. ANSI N45.2, Criterion 2, Quality Assurance Program

3.0 POLICY

3.1 REVIEW DURING THE MIDLAND PROJECT

E&QA and Midland Project Quality Assurance monitors or audits design and procurement activities. MPQA maintains surveillance over construction and installation. Quality Assurance personnel or Quality Assurance personnel under contract to Consumers Power Company perform the following functions:

a. Review and approval of Consumers Power Company Principal Suppliers Quality Assurance Programs prior to commencement of activity.

b. Quality Assurance audits or surveillance of Suppliers to assure that the requirements contained in design and procurement documents, specifications and Quality Assurance Programs are met.

c. Review of specifications, drawings, procedures, inspection checklists and other pertinent documents for Quality Assurance requirements.

d. Quality Assurance audits or surveillance at the Midland Nuclear Plant site to evaluate the performance of contractors and subcontractors in implementing their Quality Assurance Programs.

e. Witnessing the performance of work activities and of construction and installation tests and inspections to assure that specified requirements are met and that required records are maintained.

f. Audits of the Consumers Power Company departments to assure that they are complying with the Quality Assurance Program for the Midland Nuclear Plant and Department Procedures.

g. Review of nonconforming conditions to detect trends requiring corrective action.

These reviews, audits and surveillances are documented and reported to Management personnel and to the responsible Department Heads in accordance with Quality Assurance Program Policy No 20, "Program Reporting."

3.2 REVIEW OF CORPORATE QUALITY ASSURANCE PROGRAM

The review of the Consumers Power Company Corporate Nuclear Quality Assurance Program is performed at least once every 24 months or once every second calendar year by an audit as described in Section 3.1 of Quality Assurance Program Policy No 18, "Audits." The audit is documented and reported to the Vice President - Projects, Engineering and Construction, the Director - Environmental & Quality Assurance, the Executive Manager - MPQA, and the Manager - MPQA. It is the responsibility of the Vice President - Projects, Engineering and Construction, to evalute and approve recommendations therefrom and to inform the President and Chief Executive Officer of the Company in accordance with Quality Assurance Program Policy No 20, "Program Reporting."

PROGRAM REPORTING

1.0 GENERAL

Reports of nonconforming conditions are prepared by Consumers Power Company and submitted to the NRC and to the responsible departments according to the requirements set forth in Title 10 Code of Federal Regulations, applicable ANSI Standards and Regulatory Guides. Consumers Power Company requires Suppliers: (a) To report potentially significant nonconformances to Consumers Power Company for determination of 10 CFR 50.55(e) reportability to the NRC and (b) to comply with 10 CFR 21.

2.0 BASIS DOCUMENTS

a. 10 CFR 21, Reporting of Defects and Noncompliance

b. 10 CFR 50, Appendix B, Criterion 16, Corrective Action

c. 10 CFR 50.55, Conditions of Construction Permits, Paragraph (e)

d. ANSI N45.2, Criterion 17, Corrective Action

3.0 POLICY

3.1 REPORTING DURING THE MIDLAND PROJECT

3.1.1 Reports by Environmental & Quality Assurance

Environmental & Quality Assurance personnel perform audits of the Quality Assurance Program and reports the results of the audits to the Vice President - Projects, Engineering and Construction; to the Director - Environmental & Quality Assurance and to other members of Management who have functional or line responsibilities for the audited area or activity. These reports summarize quality-related problems and nonconformances and describe the status of their resolution.

Each biennium, a major audit of the Quality Assurance Program is conducted and reported to the Vice President - Projects, Engineering and Construction.

The Vice President - Projects, Engineering and Construction, is responsible for transmitting pertinent quality-related problems and nonconformances to the President and Chief Executive Officer.

PROGRAM REPORTING

3.1.2 Reports by Midland Project Quality Assurance

Midland Project Quality Assurance:

a. Prepares and issues a monthly status report to the Vice President - Projects, Engineering and Construction. Results of audits performed by Midland Project Quality Assurance are reported to the Vice President - Projects, Engineering and Construction, Director - Environmental & Quality Assurance, and to other members of Management who have either functional or line responsibilities for the audited area or activity. These reports summarize quality-related problems and nonconformances and describe the status of their resolution. The Executive Manager - MPQA and the Manager, Midland Project Quality Assurance Department conduct quarterly quality assurance Management meetings with the officer in charge, the appropriate Midland Project Office members, and other personnel, as applicable.

b. Performs Site Audits and reports the results to the Vice President - PE&C; The Executive Manager - MPQA; The Director - E&QA; and to other members of Management who have functional or line responsibilities for the audited area.

3.1.3 Reporting Significant Conditions to the NRC

Significant nonconformances are recorded on nonconformance reports and are controlled in accordance with Quality Assurance Program Policies No 15, "Control of Nonconforming Items" and No 16, "Corrective Action." Each such nonconformance is promptly reviewed by the Midland Project Quality Assurance Department or, when occurring during preoperational testing, by the Site Management Office to determine its reportability to the NRC under the requirements of 10 CFR 50.55(e) and 10 CFR 21.

As applicable, nonconformances which are reportable under 10 CFR 50.55(e) are orally reported to the NRC by Midland Project Quality Assurance within 24 hours after their occurrence. Each such oral report is followed within 30 days by a written report to the NRC from the officer in charge. Also, as applicable, nonconformances which are reportable under 10 CFR 21 are orally reported to the NRC by Midland Project Quality Assurance within two days after their evaluation. Each such oral report is followed within five days by a written report to the NRC from the officer in charge.

PROGRAM REPORTING

3.1.4 Supplier Responsibilities

Consumers Power Company requires Suppliers to report each potentially significant nonconformance to the responsible Quality Assurance organization and to the organization having project management responsibility. Each such nonconformance is reviewed and evaluated for reportability to the NRC in accordance with the process described in Paragraph 3.1.3, above. In addition, Consumers Power Company requires Suppliers to comply with 10 CFR 21 for all procurements issued by Consumers Power Company after January 6, 1978 in accordance with the provisions delineated in 10 CFR 21.