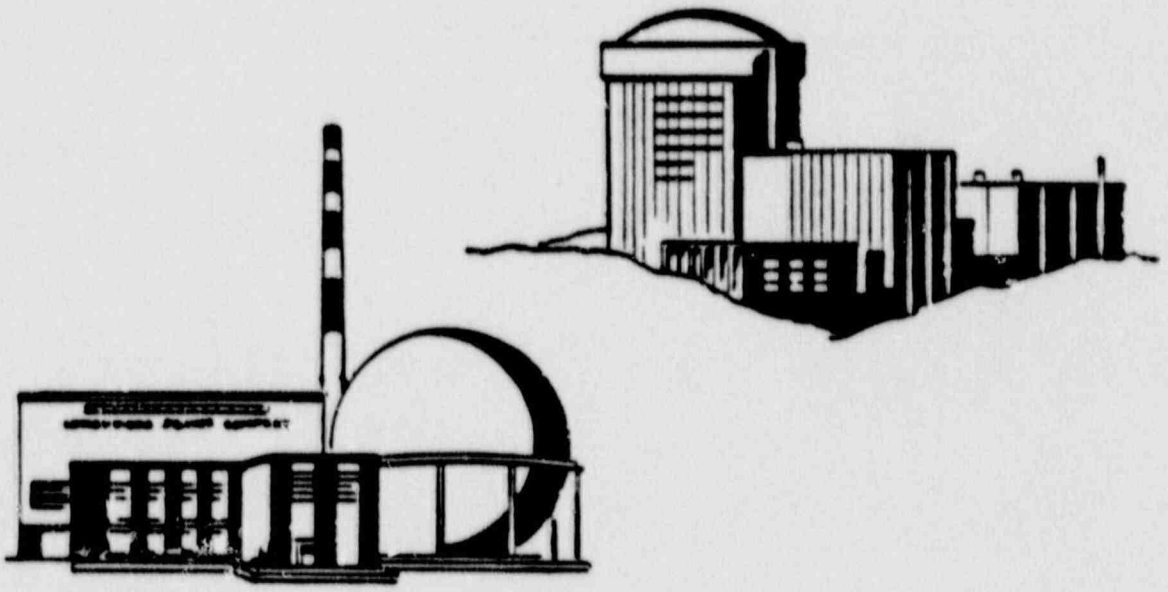
Consumers Power Company

CPC-2A

QUALITY ASSURANCE PROGRAM DESCRIPTION

FOR

OPERATIONAL NUCLEAR POWER PLANTS



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Consumers Power
POWERING MICHIGAN'S PROGRESS
General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 788-1111

Frederick W. Buckman
President and
Chief Operating Officer

SUBJECT: STATEMENT OF RESPONSIBILITY AND AUTHORITY REGARDING THE CONSUMERS POWER COMPANY QUALITY ASSURANCE PROGRAM FOR OPERATIONAL NUCLEAR POWER PLANTS

As Chief Operating Officer of Consumers Power Company, I have the ultimate management authority for the establishment of Corporate Quality Assurance Policy. This Policy is provided in the Consumers Power Company Quality Assurance Program Description for Nuclear Power Plants. The Quality Assurance Program Description 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 ANSI N18.7, and to the ANSI N45.2 Series of Standards and corresponding Regulatory Guides within the context of applicability imposed by N18.7. The Quality Assurance Program Description for Operational Nuclear Power Plants outlines the actions that are implemented during the operational phase including fueling, testing, operation, refueling, procurement, maintenance, repair, and modification design and construction of the safety-related portions of the nuclear power plants.

I have delegated the authority for the establishment and maintenance of the Quality Assurance Program Description through the Senior Vice President, Energy Supply to the Vice President, Nuclear Operations for operational phase activities and plant modifications, and in turn to the Director, Quality Assurance. The Director, Quality Assurance is also authorized to verify the effective implementation of the Quality Assurance Program Description.

The Quality Assurance Program Description contains mandatory requirements which must be implemented and enforced by all responsible organizations and individuals.

Frederick W Buckman

QUALITY ASSURANCE PROGRAM DESCRIPTION

FOR

OPERATIONAL NUCLEAR POWER PLANTS

REVISION 10

APPROVED BY:

Senior Vice President, Energy Supply
G L Heins

9-27-89
Date

Vice President - Nuclear Operations
D P Hoffman

9-25-89
Date

Vice President, Energy Supply Services
R J Nicholson

9/25/89
Date

Vice President, Distribution Operations
D V Voigt

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Vice President, Corporate Services
R A Wells

10/2/89
Date

Vice President, Fossil & Hydro Operations
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9/25/89
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QUALITY ASSURANCE PROGRAM DESCRIPTION FOR OPERATIONAL NUCLEAR POWER PLANTS

CONTENTS

FIGURES

1.0 ORGANIZATION

1.1 POLICY

Consumers Power Company (CP Co) is responsible for establishing and implementing the Quality Assurance Program, as described herein, for the operational phase of its nuclear power plants. Although authority for development and execution of some parts of the program is delegated to others, such as contractors and consultants, CP Co retains overall responsibility.

This section of the Quality Assurance Program Description (QAPD) identifies the CP Co organizations responsible for activities affecting the quality of safety-related nuclear power plant structures, systems and components and describes the authority and duties assigned to them. It addresses responsibilities for both attaining quality objectives and for the assurance functions of establishing and maintaining the Quality Assurance Program and verifying that activities affecting the quality of safety-related items are performed in accordance with QA program requirements.

Quality assurance functions (audits, surveillance, certain reviews and control of this QAPD) are performed by personnel within formally designated Quality Assurance (QA) organizational units that report to the Director, Quality Assurance. Specific areas of responsibility and authority are delegated to these units by the individual assigned overall responsibility and authority for the QA Program. The reporting level of the Quality Assurance organization affords sufficient authority and organizational freedom, including sufficient independence from the cost and schedule impacts of QA organization actions, to enable people in that organization to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions.

1.2 IMPLEMENTATION

1.2.1 Source of Authority

The President and Chief Operating Officer (see Figure 1 of Company Organization Charts) of CP Co is responsible for safe operation of CP Co nuclear power plants. Authority and responsibility for establishing and implementing the QA Program for plant operations, maintenance and modifications is delegated through the Senior Vice President, Energy Supply to the Vice President - Nuclear Operations (see Figure 2). This delegation is formalized in a STATEMENT OF RESPONSIBILITY AND AUTHORITY signed by the President and Chief Operating Officer. Other quality-related functions are provided by other organizations as described herein.

1.2.2 Responsibility for Attaining Quality Objectives in the Nuclear Operations Organization

The Vice President - Nuclear Operations is responsible to the Senior Vice President, Energy Supply for operation and maintenance of CP Co nuclear power plants. Directors and Managers who report to him are responsible for directing the performance of activities that affect safe plant operation and/or safety-related functions of structures, systems and components of the operating nuclear power plants in accordance with QA Program requirements.

a. The Plant General Manager/Plant Manager (see Figure 3) are responsible to the Vice President, Nuclear Operations for operation and maintenance of the nuclear power plants in such a manner as to achieve compliance with Plant licenses, applicable regulations and the QA Program. Each Plant General Manager or Manager delegates to appropriate managers and staff personnel in his organization responsibility for carrying out applicable controls required by the Quality Assurance Program. QA Program activities performed on the authority of the Plant General Manager/Manager include:

Qualification of plant operating and maintenance personnel.

Control of preparation, review and approval of Q-List updates.

Control of preparation, review and approval of plant procedures and instructions.

Control of plant initiated procurement, including preparation, reviews and approval of purchase requests for spares, replacement items, consumables, and materials, items and services. Control also includes submittal of purchase requests to Purchasing, vendor surveys for urgent procurements, planning and execution of source surveillance or inspection, receiving inspection, and review of supplier quality-related documentation.

Functioning as the Company design and configuration control authority for compliance of plant modifications and design changes to existing plant design criteria.

Project responsibility for modifications, including design, procurement, construction and testing activities as assigned by the Plant General Manager/Manager.

Safety assessments, operating experience reviews including NRC Information Notices, administrative and technical support for Plant Review Committee (Palisades) activities and technical support for onsite review organizations.

Developing and maintaining Plant Security Plans and administering the contract(s) for the security force.

Authorizing use of secondary calibration standards whose accuracy is equal to that of equipment being calibrated, and assuring that such use cannot result in operation outside Technical Specifications limits.

Maintaining Echelon III calibration facilities for Portable and Laboratory Measuring and Test Equipment (PL-M&TE) and Health Physics PL-M&TE (HPPL-M&TE). Calibration/maintenance of installed plant instrumentation.

Controlling a calibration recall system.

Maintaining a Master List for plant-owned PL-M&TE.

Operating onsite Document Control Centers.

Onsite evaluation of corrective action documents, including initial determination of reportability to the NRC.

Providing for storage and protection of purchased materials and items and items awaiting disposition implementation after removal from service, assuring preservation of identification.

Developing and maintaining Plant Fire Protection Plans.

Implementing security, fire protection, health physics and emergency plans.

Performing start-up and operational testing, such as precritical and criticality tests, low-power, power ascension and plant tests, and surveillance testing.

Maintaining equipment status control.

Maintaining required controls over chemical standards and reagents.

Conducting the inservice inspection program in accordance with technical specifications and State of Michigan rules.

Conducting a water chemistry program in accordance with technical specifications.

Performing reactor engineering functions, such as fuel calculations and specification, fuel movement calculations, reactor thermal profile studies, safety analysis, etc.

b. The Director, Nuclear Safety Services Department (see Figure 3), is responsible for:

Performance of the offsite safety review functions for the nuclear power plants as described in plant technical specifications.

Development and maintenance of nuclear plant probabilistic risk assessment models and application of PRA technology to severe accident management and plant reliability improvement.

Conduct of the biennial assessment of QA Program effectiveness.

Assessing the effectiveness of the corporate Health Physics program and maintaining standards for control of Radiological Materials and personnel exposure and recommending program improvements to reduce on-site and offsite radiation exposure caused by plant operations, operating the dosimetry laboratory and maintaining records of personnel radiation exposure.

c. The Director, Nuclear Licensing (see Figure 3) is responsible for:

Accomplishing plant licensing activities including maintaining licensing documents up-to-date, interfacing with the NRC, accomplishing and/or tracking licensing commitments and coordinating internal action on NRC bulletins, generic letters, etc.

Providing necessary corrective action processing and status reporting for assigned corrective action documents, including offsite determination of NRC reportability.

d. The Director, Nuclear Fuel Supply (see Figure 2) is responsible through the Vice President, Nuclear Operations to the Senior Vice President, Energy Supply for the procurement of nuclear fuel and associated services.

e. The Emergency Planning Administrator (see Figure 3) is responsible for coordinating Corporate Nuclear Emergency Planning.

f. The Director, Nuclear Training, is responsible for establishing, implementing and documenting the training of nuclear operations and technical support personnel, including QA Program indoctrination and training.

1.2.3 Responsibility for Attaining Quality Objectives in the Energy Supply Services Organization

The Vice President, Energy Supply Services (see Figure 6) is responsible to the Senior Vice President, Energy Supply for certain services, including standards for calibration of M&TE, and performing assigned modifications to CP Co nuclear power plants. Directors and Managers reporting to him are responsible for directing the performance of activities in accordance with QA Program requirements.

a. The Manager, Energy Supply Technical Services (ESTS) is responsible, through personnel reporting to him, for:

Maintaining/testing electrical protective devices.

Performing design verification testing associated with electrical protective devices, except when such testing is procured from approved outside contractors.

Maintaining the Company's Echelon II calibration facility for calibrating reference and secondary standards and general usage portable and laboratory measuring and test equipment.

Controlling the calibration recall system for Portable and Laboratory M&TE owned by ESTS, and other departments, as requested.

Maintaining a Master PL-M&TE List for ESTS PL-M&TE and for other departments, as requested.

Maintaining a Company PL-M&TE Inventory List.

Providing chemistry support to Nuclear Operations, as requested.

Preparing, reviewing, approving and obtaining additional reviews and approvals if required, of purchase requests for services, equipment and consumables, and submitting such requests to purchasing for procurement action.

Conducting performance tests on materials, equipment and systems.

Performing nondestructive examination, and controlling/maintaining NDE equipment.

Providing qualified NDE procedures and equipment and NDE personnel.

Providing chemical and metallurgical analytical services.

Providing necessary corrective action processing and status reporting for assigned corrective action documents.

b. The Manager, Projects, Construction and Equipment (PC&E) is responsible, through personnel reporting to him for:

Performing the construction, preoperational testing and overall project management of assigned generating plant modification projects.

Providing necessary corrective action processing and status reporting for assigned corrective action documents.

Providing electrical equipment and turbine-generator expertise and developing and qualifying special process procedures for welding and heat treating operations.

c. The Manager, Field Maintenance Services provides Field Maintenance Services for assigned modifications and plant outages.

d. The Manager, Engineering is responsible, through personnel reporting to him for:

Performing the engineering associated with generating plant modification projects as assigned by the Plant General Manager/Manager.

Providing, as requested, technical expertise and review capability to Nuclear Operations in the areas of metallurgy, special processes, coatings, electrical, mechanical and civil-structural engineering and application of codes and standards.

Providing necessary corrective action processing and status reporting for assigned corrective action documents.

e. The Director, Management and Budget, is responsible, through personnel reporting to him, for:

Maintaining the Records Management System including required retention, protection and retrievability, operating the General Office (offsite) Document Control Center and Engineering Records Center, and for maintaining the Uniform File Index. This includes collecting, storing, maintaining, distributing and controlling plant engineering/design documents.

Providing necessary corrective action processing and status reporting for assigned corrective action documents.

1.2.4 Responsibility for Attaining Quality Objectives Outside Nuclear Operations and Energy Supply Services

Certain functions that constitute part of the Nuclear Operations QA Program are performed by CP Co organizational units outside the Nuclear Operations Department or Energy Supply Services. Engineering and design tasks executed in support of plant activities are subject to review and acceptance by the associated plant organization responsible for that activity (as the design authority).

a. The Director, Administrative Operations and Planning (see Figure 5) is responsible through the Vice President, Corporate Services to the President and Chief Operating Officer for microfilming of specified QA records and plant engineering/design documents.

b. The Manager, Purchasing, Land and Materials (see Figure 5) is responsible through the Vice President, Corporate Services to the President and Chief Operating Officer for initiating procurement action based on approved purchase requests received from organizations performing or supporting plant operation, maintenance or modification, and for preparing and obtaining required reviews and approval of contracts.

c. The Manager, Engineering and Construction Department (see Figure 5) is responsible through the Vice President, Distribution Operations to the Senior Vice President, Energy Distribution for determining settings for electrical protective systems and relay control systems, and for design, review and recommending changes to electrical protective schemes and associated settings.

d. The Executive Engineer - System Dynamics and Plant Auxiliaries is responsible through the Director - Power Resources and System Planning and the Vice President, Fossil and Hydro Operations, to the Senior Vice President - Energy Supply for analytical studies to appraise the adequacy of electrical supply to safety-related equipment in nuclear power plants from the principle power supply facilities of the transmission network and onsite power supply.

e. The Director, Performance Improvement, Planning and Training is responsible to the Senior Vice President - Energy Supply for operating the Skill Centers and training and qualifying personnel and equipment for welding operations.

1.2.5 Responsibility for Quality Assurance Functions

The Director, Quality Assurance Department (see Figure 4), is responsible to the Vice President, Nuclear Operations for the definition, direction and effectiveness measurement of the Nuclear Operations QA Program, including modifications, and for verifying that activities affecting the quality of safety-related items are performed in accordance with QA Program requirements. He is also responsible for providing management direction to department heads reporting to him as indicated below for corporate environmental auditing. The Director's authority includes the following major functions for work under his jurisdiction:

Establishing the QA Program for operating nuclear plants.

Continuing evaluation of QA Program status and adequacy, reporting his conclusions to CP Co Management.

Assuring that verification activities are accomplished by personnel not directly responsible for the work being performed.

Stopping unsatisfactory work to control further processing, delivery or installation of nonconforming materials or items.

Recommending that a plant be shut down if such action appears necessary (the order is issued by the Vice President, Nuclear Operations or the Plant General Manager/Manager).

Reviewing and concurring with organizational administrative procedures and procedure changes for compliance with QA Program requirements.

Assuring that nonconforming items are properly identified, segregated and dispositioned.

Administering an Enhanced Performance Incentive Program according to Section 2.3.

QA engineering associated with modification design, procurement, construction and testing, including verification that quality-related test prerequisites have been accomplished, identification and participation in resolution of installation inspection and test problems and nonconformances, and maintenance and reporting of status of hardware and test quality and corrective action. (This function will be carried out by plant and/or general office QA staff, as assigned by the Director, QA.)

The Director's job description includes the following prerequisites: Previous management experience; knowledge of quality assurance regulations, policies, practices and standards; and experience working in quality assurance or related activities in reactor design, construction or operations, or in a similar high technology industry. The quality management office, consisting of the Director and his immediate staff, meet or exceed the qualifications established in Paragraph 4.4.5 of ANSI/ANS 3.1, 12/79 Draft as endorsed by Regulatory Guide 1.8.

The Director, Quality Assurance has no other duties or responsibilities unrelated to QA that would prevent his full attention to QA matters, is sufficiently free from schedule and cost pressures to give appropriate weight to quality consideration in his decisions and recommendations, and has direct access to high enough levels of Management to obtain resolution of quality problems. As Director, he delegates authority and holds his organization responsible for accomplishing QA functions for operational nuclear power plants, as follows:

a. The Palisades Plant QA Director and the Big Rock Point Plant QA Superintendent are required to possess the educational and experience qualifications specified in Regulatory Guide 1.8. Each is responsible to the Director - Quality Assurance for the following operating phase activities for work under his jurisdiction:

   Plant site quality assurance surveillances of safety-related activities, including operations, maintenance, modifications, procurement, testing, etc.

   Review of and concurrence with plant administrative procedures for compliance with Nuclear Operations QA Program requirements.

Verification of onsite corrective action implementation and the effectiveness of corrective action for significant safety-related problems, including, for modifications, that nonconformances are incorporated into the appropriate corrective system.

Review and concurrence with procurement quality requirements for nuclear fuel, source audit/surveillance/inspection at fuel supplier facilities, fuel inspection upon delivery, and review of fuel supplier quality-related documentation.

Plant site quality control inspection program, including inspection of maintenance, modifications, testing and fuel handling.

Participation in daily work schedule and status meetings to remain abreast of day-to-day work assignments throughout the plant and to assure adequate QA coverage relative to procedural and inspection controls, acceptance criteria and staffing and qualification of site QA personnel to carry out their assignments.

Review of maintenance, modification, test, and fuel handling procedures and instructions, and work authorizing documents for QA aspects, inspection planning, and inclusion of necessary Hold and Notification points.

Review and concurrence with administrative procedures that control methods for indicating inspection, test and operating status and attachment/removal of inspection status indicators.

Review and concurrence with O-Lists and Q-List changes to assure compliance with QA Program commitments and to assure that the extent that QA controls are to be applied to specific structures, systems and components is appropriate.

b. Quality Assurance Section Heads (Corporate Office) are responsible to the Director, Quality Assurance for the Nuclear Operations QA audit program, QA program development, and special studies including the following:

QA, Security and Environmental audit programs (plant sites and Corporate Office), including follow-up on corrective action for audit findings.

Verification of the implementation and effectiveness of Corporate Office corrective action for significant problems.

Supplier surveys and evaluation including review/approval of supplier QA programs, and maintenance of the NOD Approved Suppliers List.

Review of and concurrence with quality requirements of procurement request packages generated in the Corporate Office, as required.

Corrective action program trend analysis and reporting.

Maintenance/operation of corrective action system.

Maintenance of the QA Program Description for Operational Nuclear Power Plants.

Review of Nuclear Operations Department Standards (NODS) and review and concurrence with Corporate Office administrative procedures for compliance with QA Program requirements.

Development and maintenance of Quality Assurance Department Procedures.

Analysis of new and/or changed regulatory direction, codes and standards to determine their effect on the QA Program.

Administrative control of Nuclear Operations Department Standards.

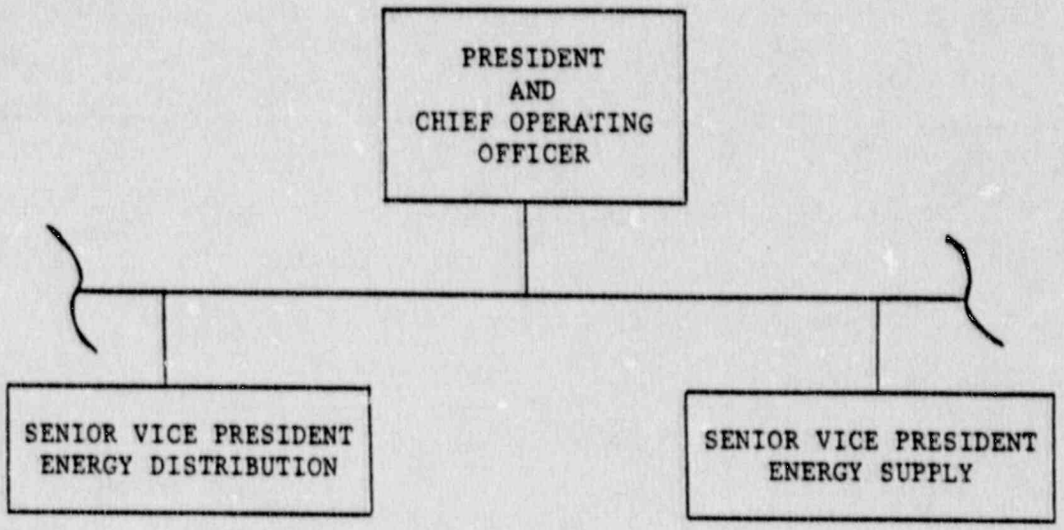

Figure 1 - Consumers Power Company Corporate Organization

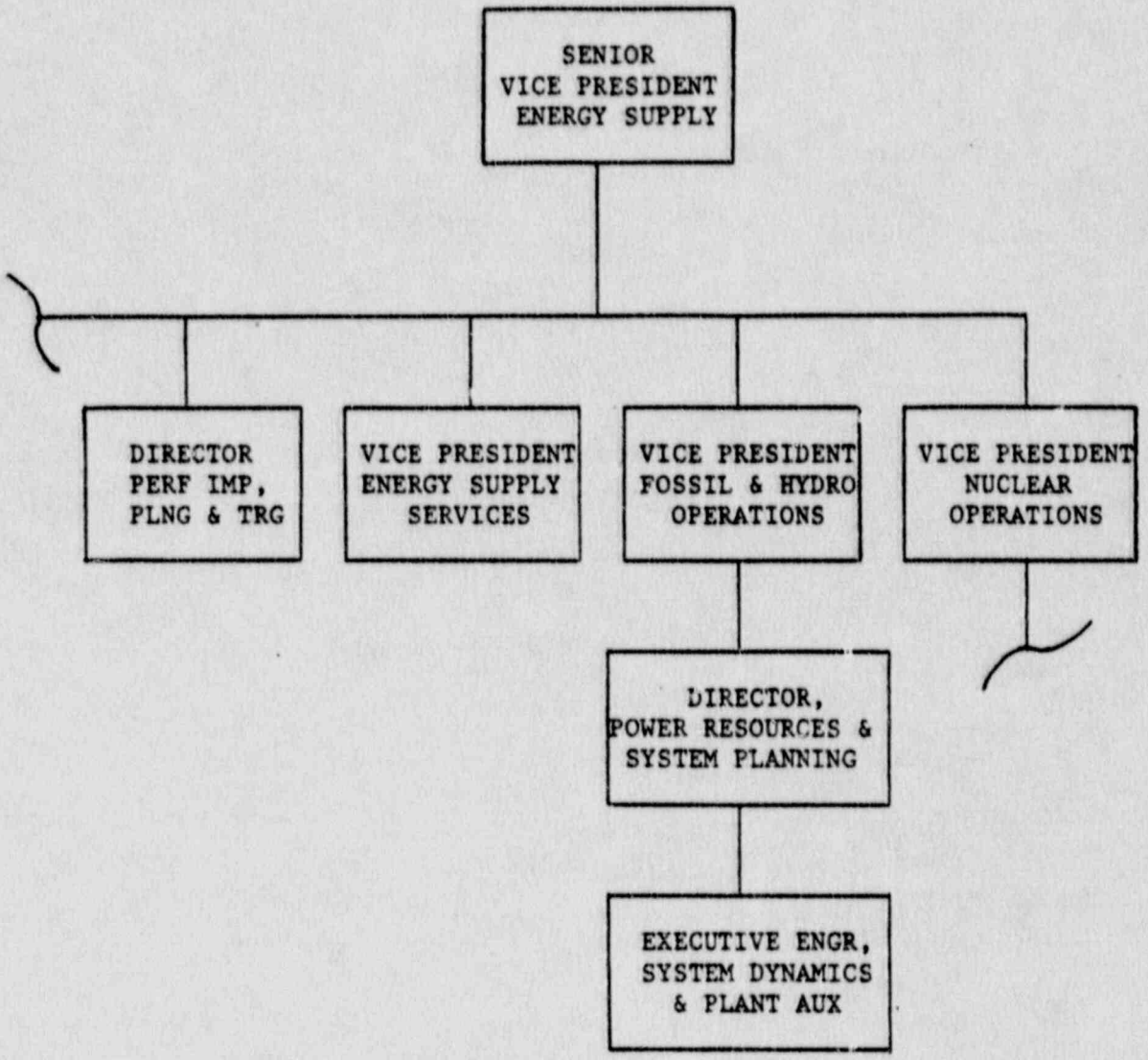

Figure 2 - Energy Supply Organization

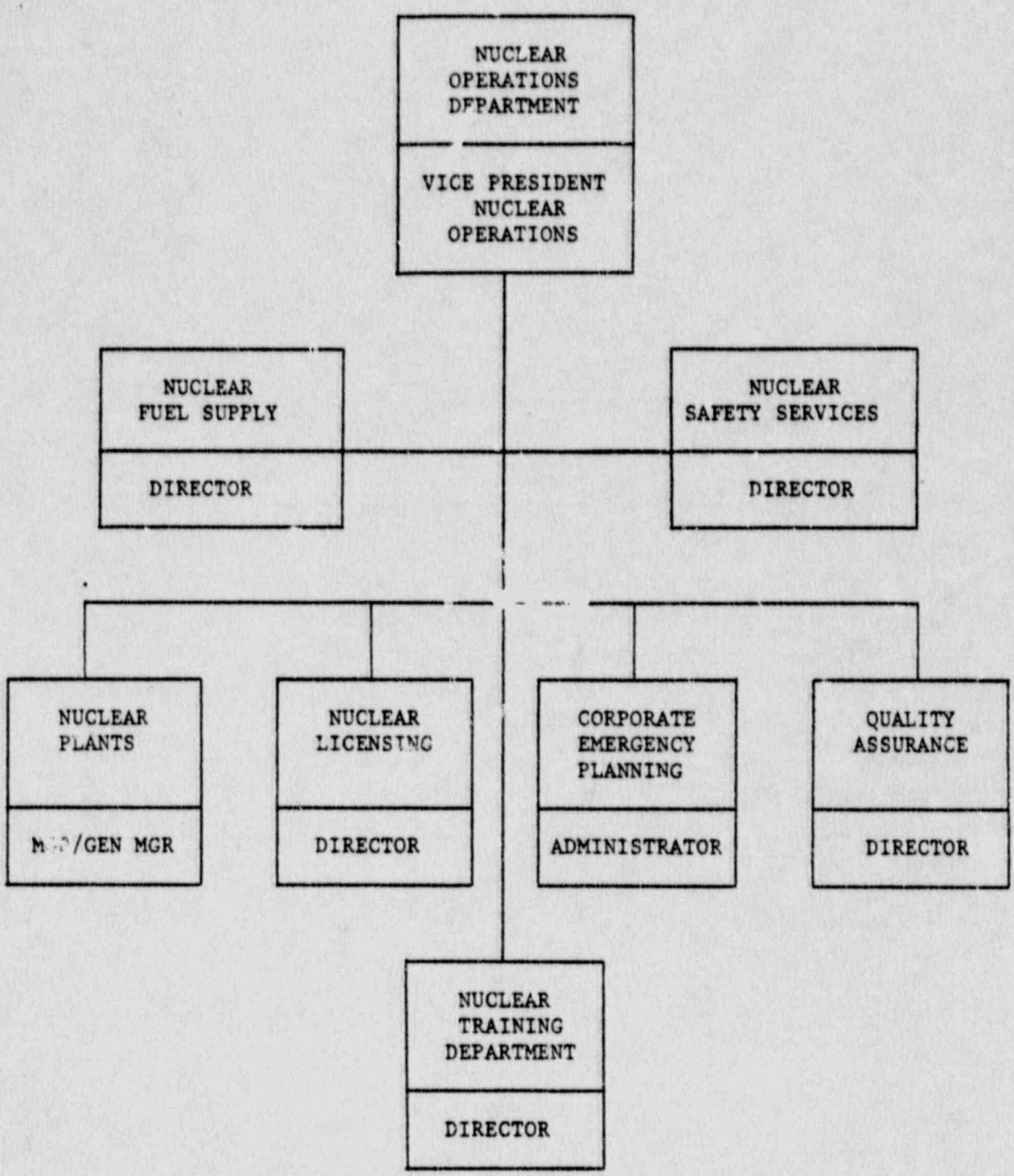

Figure 3 - Nuclear Operations Department Organization

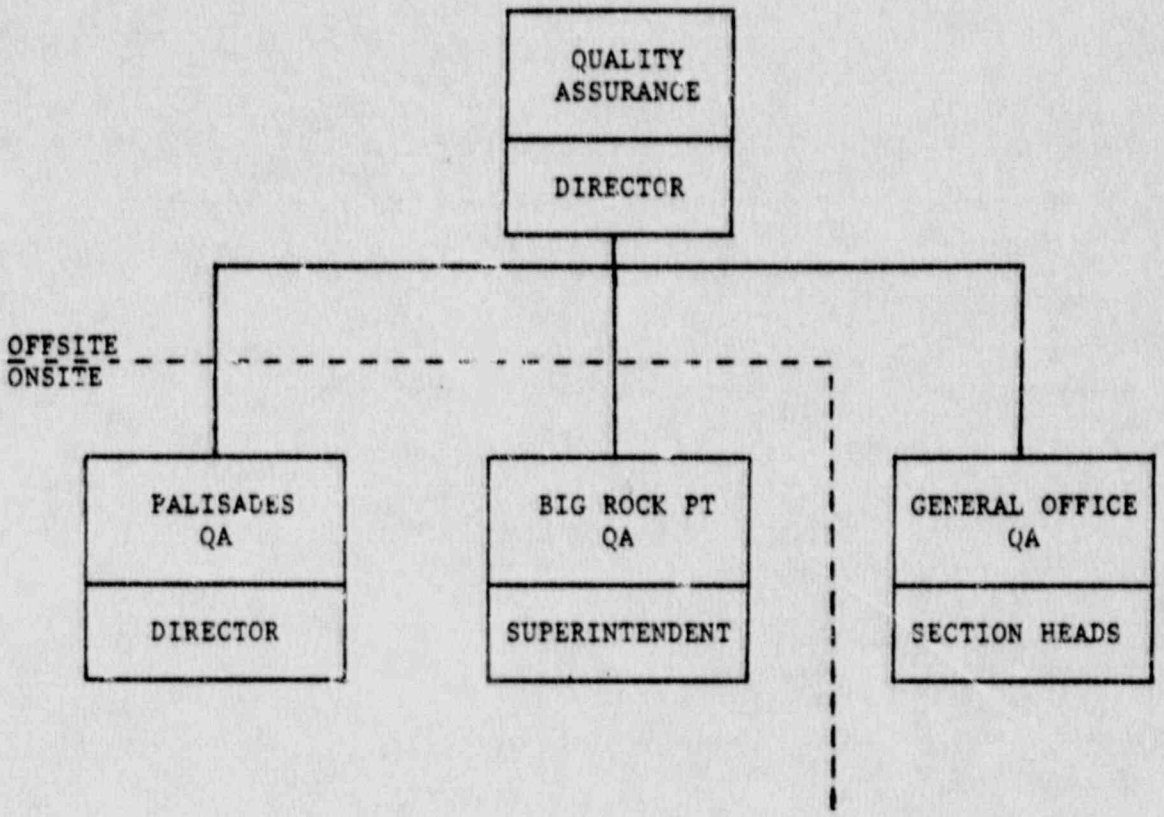

Figure 4 - Quality Assurance Organization

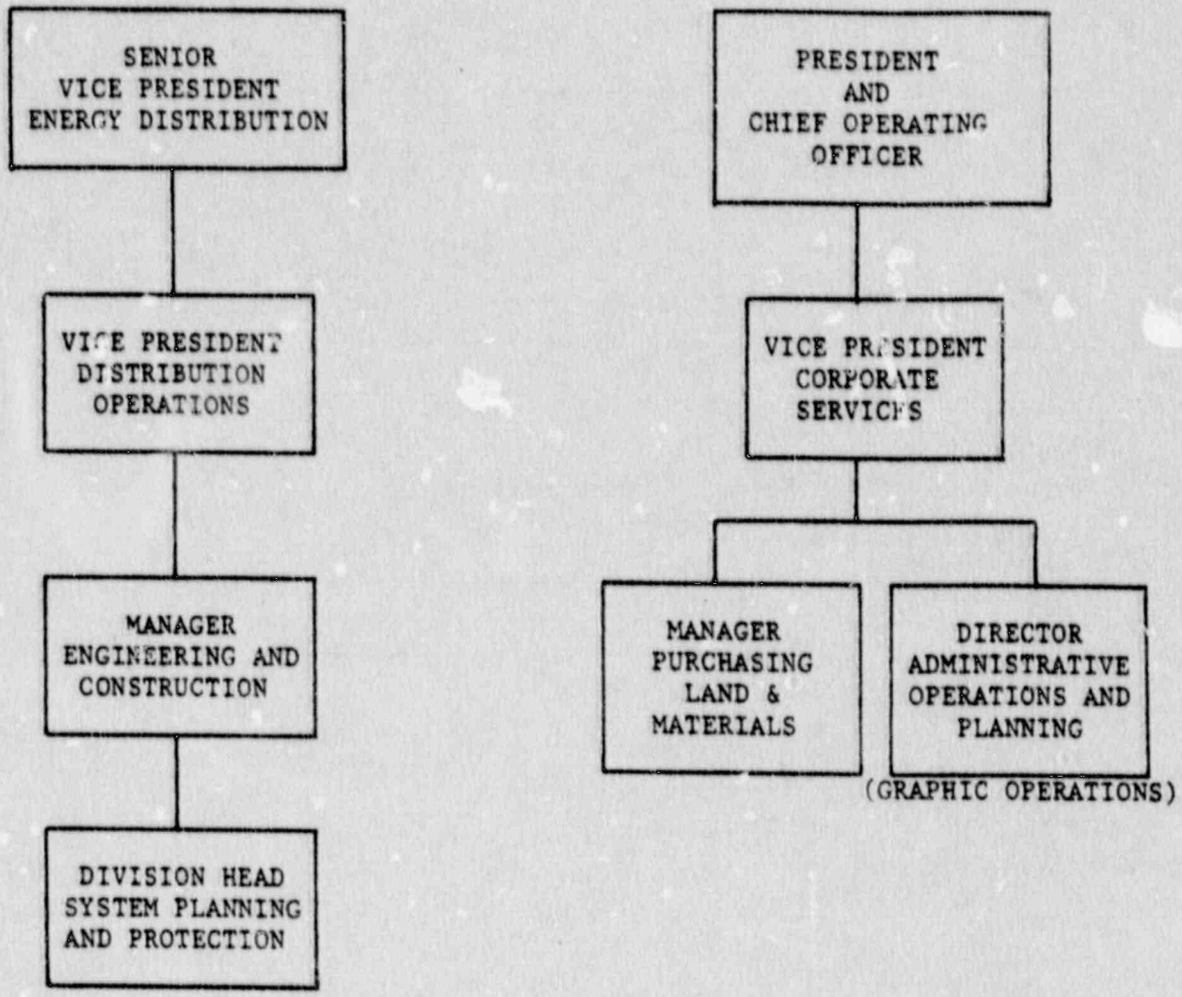

Figure 5 - Energy Distribution and Corporate Services Organizations

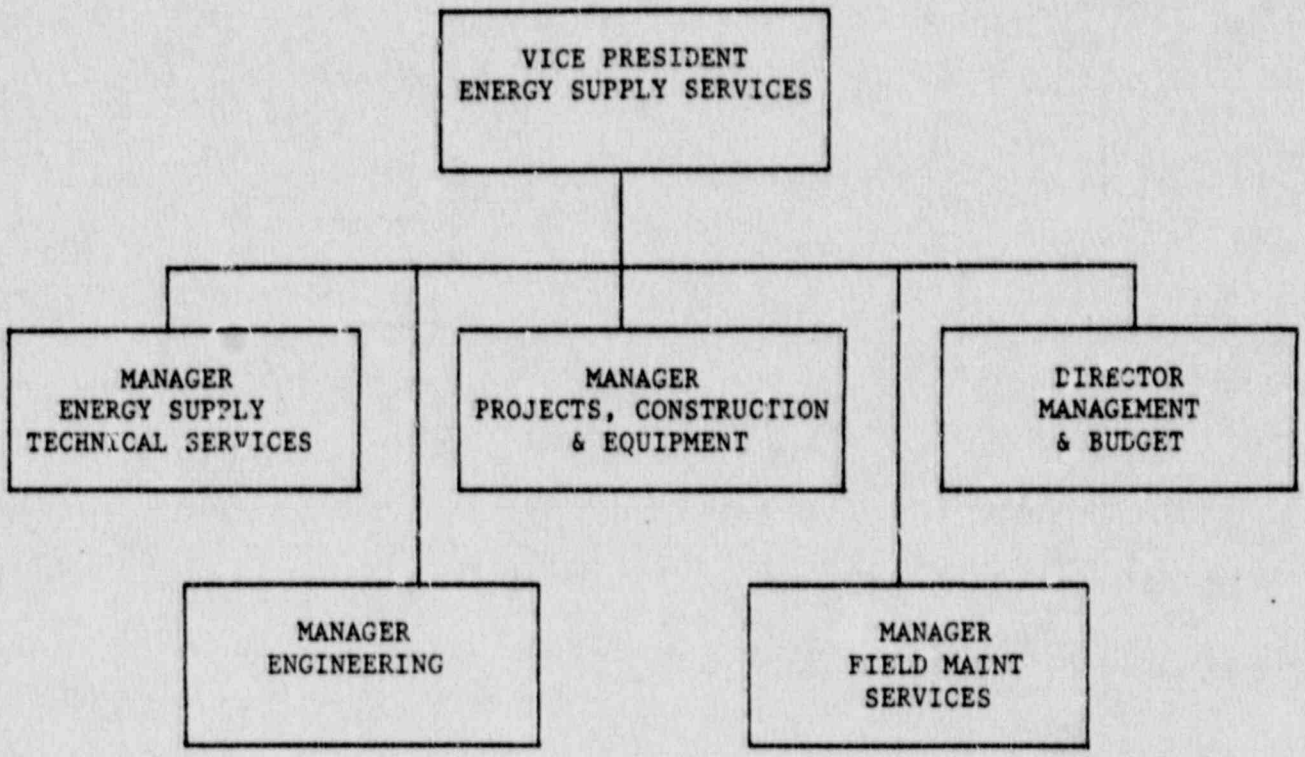

Figure 6 - Energy Supply Services Organization

2.0 QUALITY ASSURANCE PROGRAM

2.1 POLICY

Policies that define and establish the Consumers Power Company (CP Co) Quality Assurance Program for Operational Nuclear Power Plants are stated in the individual sections of this document. The program is implemented through procedures and instructions responsive to provisions of the QAPD and will be carried out for the life of each plant.

Quality assurance controls apply to activities affecting the quality of safety-related structures, systems and components, to an extent based on the importance of those structures, systems, or components to safety. Such activities are performed under suitably controlled conditions, including the use of appropriate equipment, maintenance of proper environmental conditions, assignment of qualified personnel and assurance that all applicable prerequisites have been met.

Quality Assurance Program status, scope, adequacy and compliance with 10CFR50 Appendix B are regularly reviewed by CP Co Management through reports, meetings and review of audit results. Biennially, a pre-planned and documented assessment of the Nuclear Operations QA Program is performed by a management team independent of the Quality Assurance Department.

2.2 IMPLEMENTATION

2.2.1 The President of Consumers Power Company, as Chief Operating Officer, has stated in a formal STATEMENT OF RESPONSIBILITY AND AUTHORITY, signed by him, that it is corporate policy to comply with the provisions of applicable legislation and regulations pertaining to quality assurance for nuclear power plants as defined by 10CFR50 Appendix B. The statement makes this QAPD and the associated implementing procedures and instructions mandatory and requires compliance by all responsible organizations and individuals. It identifies the Management positions in the Company vested with responsibility and authority for implementing the Program and assuring its effectiveness.

2.2.2 The Quality Assurance Program at CP Co consists of controls exercised by organizations responsible for attaining quality objectives and by organizations responsible for assurance functions (see Section 1.0, ORGANIZATION).

2.2.3 The effectivity and applicability of this QAPD are as follows:

a. For Big Rock Point and Palisades, the QAPD became effective on April 1, 1982, with full implementation on January 1, 1983.

b. The QA Program described in this QAPD is intended to apply for the life of CP Co's nuclear power plants.

c. The QA Program applies to activities affecting the quality of safety-related structures, systems, components and related consumables during plant operation, maintenance, testing and all modifications. These activities having a direct impact on Q-listed items shall be procedurally controlled. Safety-related structures, system, components and related consumables are identified in Q-Lists, which are developed and maintained for each plant in accordance with the criteria of Regulatory Guide 1.29 as clarified by Items No. 20a and No. 20b in Part 2 of Appendix A to this QAPD.

2.2.4 This QAPD, organized to present the CP Co Quality Assurance Program for Operational Nuclear Power Plants in the order of the 18 criteria of 10CFR50 Appendix B, states CP Co policy for each of the criteria and describes how the controls pertinent to each are carried out. Any changes made to this QAPD that do not reduce the commitments previously accepted by the NRC must be submitted to the NRC at least annually. Any changes made to this QAPD that do reduce the commitments previously accepted by the NRC must be submitted to the NRC and receive NRC approval prior to implementation. The submittal of the changes described above shall be made in accordance with the requirements of 10CFR50.54.

The program described in this QAPD will not be changed in any way that would prevent it from meeting the criteria of 10CFR50 Appendix B.

2.2.5 Documents used for implementing the provisions of the QAPD include the following:

a. Nuclear Operations Department Standards (NODS) and/or administrative procedures specify the standard methods of accomplishing operational phase activities. Because the Quality Assurance Program is an integral part of the operational phase activities, the methods for implementing Quality Assurance Program controls are integrated into these documents. The Quality Assurance Department reviews the NODS and administrative procedures for compliance with QA Program requirements and Corporate QA policy.

b. When Contractors perform work under their own quality assurance programs, these programs are reviewed for compliance with the applicable requirements of 10CFR50 Appendix B and the contract and are approved by CP Co prior to the start of work.

c. Applicable elements of the operations Quality Assurance Program are applied to emergency plans, security plans, radiation and fire protection plans for CP Co nuclear power plants. These plans describe QA controls applicable to associated equipment and activities.

2.2.6 Provisions of the Quality Assurance Program for Operational Nuclear Power Plants apply to activities affecting the quality of safety-related structures, systems, components and related consumables. Appendix A to this QAPD lists the ANSI Standards and Regulatory Guides to which CP Co commits. Appendix A also describes necessary exceptions and clarifications to the requirements of those documents. The scope of the program and the extent to which its controls are applied are established as follows:

a. CP Co uses the criteria specified in Regulatory Guides 1.26 and 1.29 in engineering analysis of an item's function in relation to safe operation and shutdown to identify structures, systems and components to which the Quality Assurance Program applies (See Appendix A).

b. This identification process results in the classification of equipment as either Q or non-Q, and the inclusion of this classification in an equipment data base. This data base is available for inquiry by individuals involved in plant operation. The classification of structures, systems and consumables is also identified, documented, and controlled.

c. The extent to which controls specified in the Quality Assurance Program are applied to Q-listed items is determined for each item considering its relative importance to safety. Such determinations are based on data in such documents as the plant risk analysis, plant Technical Specifications and the FSAR/FHSR (See Appendix A).

2.2.7 Activities affecting the quality of safety-related items are accomplished under controlled conditions. Preparations for such activities include confirmation that prerequisites have been met, such as:

a. Assigned personnel are qualified.

b. Work has been planned to the proper revisions of applicable engineering and/or technical specifications.

c. Specified equipment and/or tools, if any, are on hand to be used.

d. Materials and items are in an acceptable status.

e. Systems or structures on which work is to be performed are in the proper condition for the task.

f. Authorized current instructions/procedures for the work are available for use.

g. Items and facilities that could be damaged by the work have been protected, as required.

h. Provisions have been made for special controls, processes, tests and verification methods.

2.2.8 Development, control and use of computer programs affecting nuclear power plant design and operation at CP Co are subject to QA Program design controls (see Section 3.0, DESIGN CONTROL).

2.2.9 Responsibility and authority for planning and implementing indoctrination and training are specifically designated in the CP Co organization (see Section 1.0, ORGANIZATION).

a. The training and indoctrination program provides for ongoing training and periodic refamiliarization with the Quality Assurance Program for Operational Nuclear Power Plants.

b. Personnel who perform inspection and examination functions are qualified in accordance with requirements of Regulatory Guide 1.58, SNT TC-1A, or the ASME Code, or Section 10.2.7 of this QAPD, as applicable.

c. Personnel who participate in quality assurance audits are qualified in accordance with Regulatory Guide 1.146.

d. Personnel assigned duties such as special cleaning processes, welding, etc, are qualified in accordance with applicable codes, standards and regulatory guides.

e. The training/qualification program for personnel performing QA functions includes provisions for retraining, reevaluation and recertification to ensure that proficiency is maintained.

f. Certificates of qualification for personnel performing QA functions designate specific functions that the named personnel are qualified to perform and indicate the performance criteria on which the qualification was based.

g. Training and qualification records including documentation of objectives, content of program, attendees and dates of attendance are maintained at least as long as the personnel involved are performing activities to which the training/qualification is relevant.

h. Personnel responsible for performing activities that affect quality are instructed as to the requirements identified in applicable quality related manuals, instructions and procedures.

i. The Quality Assurance Department provides training in quality assurance principles related to procurement for those personnel performing procurement quality assurance actions, including review of procurement documents, source verification and receipt inspection.

2.2.10 Status and adequacy of the quality assurance program are regularly assessed by CP Co Management. The following activities constitute formal elements of that assessment:

a. Audit reports, including follow-up on corrective action accomplishment and effectiveness, are distributed to appropriate levels of Management (see Section 18.0, AUDIT).

b. Semi-annual QA Program Status Meetings are held, involving the Vice President, Nuclear Operations, the Director, Quality Assurance and the Managers of the organizations responsible for implementing elements of the QA Program for Operational Nuclear Power Plants.

c. Management teams independent from the Quality Assurance organization, but knowledgeable in auditing and quality assurance, biennially review the effectiveness of the Quality Assurance Program for Operational Nuclear Power Plants. This review may be performed as part of the independent audit of the Quality Assurance organization. Conclusions and recommendations are reported to the Senior Vice President, Energy Supply.

Corrective actions in response to recommendations are tracked in the regular corrective action tracking system (see Section 16.0, CORRECTIVE ACTION).

2.3 ENHANCED PERFORMANCE INCENTIVE PROGRAM

2.3.1 The Director, Quality Assurance evaluates performance of organizational units to determine which, if any, may have the level of QA oversight of in-process activities reduced. Consideration is given to the following in making the determination: regulatory performance; qualification, knowledge and performance of personnel; internal audit/surveillance/inspection results; results of assessments by other independent organizations; overall conformance to established requirements; and corrective action performance.

2.3.2 Those organizational units selected may receive reduced QA/QC attention in areas such as direct reviews (for example, maintenance/work order or procedure review), inspection coverage or surveillance, as warranted. Audit frequency is not subject to reduction.

2.3.3 An Enhanced Performance Incentive Program Plan is developed for each organizational unit entering the Program to define the performance criteria to be maintained, the areas where QA/QC will be reduced, and the intervals at which performance will be assessed and reported.

2.3.4 Performance of organizational units in the Program is monitored and reported to the Director, Quality Assurance, at intervals established as part of the entry conditions. Declining performance results in return to normal or increased QA/QC attention.

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3.0 DESIGN CONTROL

3.1 POLICY

Modifications to safety-related structures, systems and components are accomplished in accordance with approved designs. Activities to develop such designs are controlled. Depending on the type of modification, these activities include design and field engineering; the performance of physics, seismic, stress, thermal, hydraulic, radiation and Safety Analysis Report (SAR) accident analyses; the development and control of associated computer programs; studies of material compatibility; accessibility for inservice inspection and maintenance; and determination of quality standards. The controls apply to preparation and review of design documents, including the correct translation of applicable regulatory requirements and design bases into design, procurement and procedural documents.

3.2 IMPLEMENTATION

3.2.1 Authority and responsibility for modification activities is under the cognizance of the Nuclear Operations Department as described in Section 1.0, ORGANIZATION. This authority and responsibility includes the preparation, review, approval and verification of the following design documents: a) System descriptions; b) Design input and criteria; c) Drawings and specifications; and d) Engineering analyses and associated computer programs.

3.2.2 Errors and deficiencies in approved design documents, or in design methods (such as computer codes) that could adversely affect structures, systems and components are documented. Action is taken to assure that the errors and deficiencies are corrected.

3.2.3 Materials, parts and processes that are essential to safety-related functions are selected and specified, based on the requirements of applicable codes and standards or on known, successful use under similar conditions. This includes standard commercial materials, parts and processes. Alternatively, materials, parts and processes may be qualified for use through qualification testing (see Item 3.2.8). The adequacy of the selected materials, parts and processes is assured through the required design verifications or approvals.

3.2.4 Exceptions and waivers to or deviations from the engineering (quality) standards (ie, the required dimensions, material properties, features and other characteristics specified for modifications) are required by procedure and by contract, when applicable, to be documented and controlled. (See, also, Section 15 concerning the approval of "repair" or "use as is" dispositions of nonconformances.)

3.2.5 When modifications involve design interfaces between internal or external design organizations or across technical disciplines, these interfaces are controlled. Procedures are used for the review, approval, release, distribution and revision of documents involving design interfaces to ensure that structures, systems and components are compatible geometrically, functionally and with processes and environment. Lines of communication are established for controlling the flow of needed design information across design interfaces, including changes to the information as work progresses. Decisions and problem resolutions involving design interfaces are made by the CP Co organization having responsibility for engineering direction of the design effort.

3.2.6 Checks are performed and documented to verify the dimensional accuracy and completeness of design drawings and specifications (ie, the products of a design process).

3.2.7 Modification design document packages are reviewed by the Quality Assurance Department to assure that the documents that they contain have been prepared, verified, reviewed and approved in accordance with Company procedures and that they contain the necessary quality assurance requirements. These requirements include the inspection and test requirements, quantitative and/or qualitative acceptance criteria and the requirements for documenting inspection and test results.

3.2.8 The extent of and methods for design verification are documented. The extent of design verification performed is a function of the importance of the item to safety, design complexity, degree of standardization, the state-of-the-art and similarity with previously proven designs. Methods for design verification include evaluation of the applicability of standardized or previously proven designs, alternate calculations, qualification testing and design reviews. These methods may be used singly or in combination, depending on the needs for the design under consideration.

When design verification is done by evaluating standardized or previously proven designs, the applicability of such designs is confirmed. Any differences from the proven design are documented and evaluated for the intended application.

Qualification testing of prototypes, components or features is used when the ability of an item to perform an essential safety function cannot otherwise be adequately substantiated. This testing is performed before plant equipment installation where possible, but always before reliance upon the item to perform a safety-related function. Qualification testing is performed under conditions that simulate the most adverse design conditions, considering all relevant operating modes. Test requirements, procedures and results are documented. Results are evaluated to assure that test requirements have been satisfied. Modifications shown to be necessary through testing are made, and any necessary retesting or other verification is performed. Scaling laws are established and verified, when applicable. Test configurations are clearly documented.

Design reviews are performed by multi-organizational or inter-disciplinary groups or by single individuals. Criteria are established to determine when a formal group review is required and when review by an individual is sufficient.

Unless otherwise stated, the verification of design addresses all information conveyed by the design document. When the verification is limited to certain areas or features, the scope or extent and any limitations on the verification are documented.

3.2.9 Persons representing applicable technical disciplines are assigned to perform design verifications. These persons are qualified by appropriate education or experience but are not directly responsible for the design. The designer's immediate supervisor may perform the verification, provided that:

(1) He is the only technically qualified individual available, and

(2) He has not specified a singular design approach, ruled out certain design considerations or established the design inputs for the particular design aspect being verified, and

(3) His review is either:

a. Approved in advance by the supervisor's management, with documentation of the approval included in the design package, or

b. Controlled by a procedure reviewed and approved by the Quality Assurance Department. Such procedure shall provide specific limitations regarding the types of design work that may or may not be verified by a designer's supervisor, and shall provide for clear documentation that the supervisor performed the design verification.

QA audits cover the frequency, effectiveness, and technical adequacy of the use of supervisors as design verifiers to guard against abuse.

3.2.10 When designs must be released for use before they have been fully completed or before they have been verified, the incomplete or unverified parts of the design and the hold point to which work may proceed are identified. This hold point occurs before the work becomes irreversible or before the item is relied on to perform a safety-related function. Justification for such early release is documented.

3.2.11 Computer codes used in design are appropriately documented, verified, certified for use and controlled. Their use is specified.

3.2.12 Changes to design output documents, including field changes, are controlled in a manner commensurate with that used for the original design. Such changes are evaluated for impact. Those that affect fit, form or function are reviewed and approved by the same, or equivalent, organizations that approved the original design. Information on approved changes is transmitted to all affected organizations.

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 POLICY

Procurement documents for safety-related structures, systems, components and services define the characteristics of item(s) to be procured, identify applicable regulatory and industry codes/standards requirements and specify supplier quality assurance program requirements to the extent necessary to assure adequate quality.

4.2 IMPLEMENTATION

4.2.1 Responsibilities and authorities for procurement planning and for preparation, review and approval of procurement documents are delineated in Section 1.0, ORGANIZATION.

Procurement request packages are reviewed and approved prior to submittal to the Purchasing, Land and Materials Department. Review includes verification that the necessary quality requirements are specified.

The responsible project engineer performs bid evaluations.

4.2.2 Supplier selection is described in Section 7.0, CONTROL OF PURCHASED MATERIALS, EQUIPMENT AND SERVICES.

4.2.3 The contents of procurement documents vary according to the item(s) being purchased and its function(s) in the plant. Provisions of this QAPD are considered for application to suppliers. As applicable, procurement documents include:

a. Scope of work to be performed.

b. Technical requirements, with applicable drawings, specifications, codes and standards identified by title, document number and revision and date, with any required procedures such as special process instructions identified in such a way as to indicate source and need.

c. Regulatory, administrative and reporting requirements.

d. Quality requirements appropriate to the complexity and scope of the work, including necessary tests and inspections.

e. A requirement for a documented QA Program, subject to CP Co review and written concurrence prior to the start of work.

f. A requirement for the supplier to invoke applicable quality requirements on subtier suppliers.

g. Provisions for access to supplier and subtier suppliers' facilities and records for inspections, surveillances and audits.

h. Identification of documentation to be provided by the supplier, identification of documents be compatible with the Engineering Records Center System, the schedule of submittals and identification of documents requiring CP Co approval.

4.2.4 Trained, qualified and certified personnel perform and document reviews of procurement request packages to assure that:

a. Quality requirements (see 4.2.3 of this Section) are correctly stated, inspectable, and controllable.

b. Adequate acceptance and rejection criteria are included.

c. The procurement documents have been prepared, reviewed, and approved per the QA Program requirements.

4.2.5 Changes to the technical or quality requirements in procurement documents are controlled in a manner commensurate with that used for the original requirements. Those that could affect fit, form, function or the necessary assurance of quality are reviewed and approved by the same, or equivalent, organizations that approved the original procurement request packages.

5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.1 POLICY

Activities affecting the quality of safety-related structures, systems and components are accomplished using instructions, procedures and drawings appropriate to the circumstances which include acceptance criteria for determining if an activity has been satisfactorily completed.

5.2 IMPLEMENTATION

The authority and responsibility for performing activities affecting the quality of safety-related structures, systems and components are assigned as described in Section 1.0, ORGANIZATION. Management personnel assigned these responsibilities assure that the instructions, procedures and drawings necessary to accomplish the activity are prepared and implemented.

Instructions, procedures and drawings incorporate (1) a description of the activity to be accomplished and (2) appropriate quantitative (such as tolerances and operating limits) and qualitative (such as workmanship standards) acceptance criteria sufficient to determine that the activity has been satisfactorily accomplished.

Temporary procedures may be issued to provide management instructions which have short-term applicability. Temporary procedures include a designation of the time period during which they may be used.

The procedures used by CP Co to control its activities include the following:

1. Administrative Procedures, including Quality Assurance Department Procedures.

2. System procedures that describe the operation of the plant.

3. Start-up procedures that provide for starting the reactor from hot or cold condition and recovering from reactor trips.

4. Shutdown procedures that provide for controlled reactor shutdown or shutdown following reactor trips.

5. Power operation and load changing procedures that provide for steady state power operation and load changing, including response to unanticipated load changes.

6. Process monitoring procedures that provide for monitoring plant system performance and which, as appropriate, identify limits for significant process parameters.

7. Fuel-handling procedures that provide for activities such as:

   a. Core alterations

   b. Refueling

   c. Fuel accountability

   d. Receipt and shipment of fuel

   e. Nuclear Safety measures

8. Maintenance procedures that provide for:

   a. Preparation for maintenance

   b. Performance of maintenance

   c. Post-maintenance and operability checks and tests

   d. Use of supporting maintenance documents

9. Radiation control procedures that provide for:

   a. Implementation of the radiation control program including the acquisition of radiation data

   b. Identification of equipment for performing radiation surveys

   c. Measurement, evaluation and assessment of radiation hazards

10. Calibration and test procedures that provide for:

   a. Periodic calibration and testing of safety-related instrumentation and control systems

   b. Calibration of portable measuring and test equipment used in activities affecting safety

11. Chemical-radiochemical control procedures that provide for activities including:

   a. Sampling and analyses

   b. Maintenance of coolant quality

   c. Control of deleterious agents

   d. Control, treatment and management of radioactive wastes

   e. The control of radioactive calibration sources

12. Emergency procedures that provide guidance for:

    a. Operations during potential emergencies so that a trained operator will know in advance the expected course of events that will identify an emergency and the immediate action he should take

    b. Identifying symptoms of emergency conditions

    c. Monitoring automatic action

    d. Immediate operator action

    e. Subsequent operator action

13. Emergency Plan Implementing Procedures

14. Inspection, test and examination procedures that identify:

    a. Objectives

    b. Acceptance criteria

    c. Prerequisite and special conditions

    d. Limiting conditions

    e. Test or inspection instructions

    f. Any required special equipment or calibration

    g. Hold and Witness points, as appropriate

15. Modification procedures that provide for:

    a. Administrative control and technical support during plant modifications

    b. The basis for a consistent method of performing recurring engineering, construction and quality assurance activities

    c. Control of the interfaces between CP Co and its suppliers

    d. Offsite management control and visibility

    e. Control of onsite quality-related modification activities that assure the QA Program is implemented and its effectiveness is assessed and reported

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6.0 DOCUMENT CONTROL

6.1 POLICY

Documents controlling safety-related activities within the scope defined in Section 2.0, QUALITY ASSURANCE PROGRAM are issued and changed according to established procedures. Documents such as instructions, procedures and drawings, including changes thereto, are reviewed for adequacy, approved for release by authorized personnel and are distributed and used at the location where a prescribed activity is performed.

Changes to controlled documents are reviewed and approved by the same organizations that performed the original review and approval or by other qualified, responsible organizations specifically designated in accordance with the procedures governing these documents.

6.2 IMPLEMENTATION

6.2.1 The authority and responsibility for the control of documents are described in Section 1.0, ORGANIZATION.

6.2.2 Controls are established for approval, issue and change of documents in the following categories:

a. Design documents (eg, calculations, drawings, specifications, analyses) including documents related to computer codes

b. As-built drawings (record drawings) and related documents

c. Procurement documents

d. Instructions and procedures for activities such as fabrication, construction, modification, installation, inspection, test and plant maintenance and operation

e. Procedures that implement the Quality Assurance Program

f. Final Safety Analysis Report

g. Reports of nonconformances

h. Plant Technical Specifications

6.2.3 The review, approval, issue and change of the above documents are controlled by:

a. Establishment of criteria to ensure that adequate technical and quality requirements are incorporated

b. Identification of the organizations responsible for review, approval, issue and revision

c. Performance and documentation of a review for concurrence with Quality Assurance related aspects of items 6.2.2 a, c, d (except for operating procedures), e and g.

d. Review of changes to documents by the organization that performed the initial review and approval or by the organization designated in accordance with the procedure governing the review and approval of specific types of documents

6.2.4 Controlled documents are issued and distributed so that:

a. The documents are available at the work location prior to commencing work

b. Obsolete or superseded documents are removed from work areas and replaced by applicable revisions in a timely manner

6.2.5 Master lists or equivalent controls are used to identify the current revision of instructions, procedures, specifications, drawings and procurement documents. When master lists are used they are updated and distributed to designated personnel who are responsible for maintaining current copies of the lists.

6.2.6 Accurate as-built drawings (record drawings) and related documentation are prepared in a timely manner.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 POLICY

Activities that implement approved procurement requests for safety-related material, equipment and services are controlled to assure conformance with procurement document requirements. Controls include a system of supplier evaluation and selection, source inspection, examination and acceptance of items and documents upon delivery, and periodic assessment of supplier performance. Objective evidence of quality that demonstrates conformance with specified procurement document requirements is available to the nuclear power plant site prior to use of equipment, material or services.

7.2 IMPLEMENTATION

7.2.1 Authority and responsibility for implementing the controls outlined herein are described in Section 1.0, ORGANIZATION.

7.2.2 CP Co qualifies suppliers by performing a documented evaluation of their capability to provide items or services specified by procurement documents. To remain qualified, suppliers involved in active procurements are reevaluated annually and are audited triennially. If the Coordinating Agency for Supplier Evaluation Register is used to establish the qualifications of the Supplier, the documentation identifies the audit used. Evaluation of suppliers holding applicable ASME Certificates of Authorization is done by reference to the current ASME listing of certificate holders.

Supplier evaluation and triennial audits are not necessary when the items or services supplied are all of the following:

a. Relatively simple and standard in design, manufacture and test, and

b. Adaptable to standard or automated inspections or tests of the end product to verify quality characteristics after delivery, and

c. Such that receiving inspection does not require operations that could adversely affect the integrity, function or cleanness of the item.

In the above cases, source and/or receipt inspection provides the necessary assurance of an acceptable item or service.

7.2.3 Supplier activities that affect quality are verified in accordance with written procedures. These procedures provide the method of verifying (such as audit, surveillance or inspection) and documenting that the characteristics or processes meet the requirements of the procurement document. For commercial "off-the-shelf" items where the requirements for a specific quality assurance program appropriate for nuclear applications cannot be imposed in a practical manner, source

verification is used to provide adequate assurance of acceptability unless the quality of the item can be adequately verified upon receipt.

7.2.4 Spare and replacement parts are procured in such a manner that their performance and quality are at least equivalent to those of the parts that will be replaced.

a. Specifications and codes referenced in procurement documents for spare or replacement items are at least equivalent to those for the original items or to properly reviewed and approved revisions.

b. Parts intended as spares or replacements for "off-the-shelf" items, or other items for which quality requirements were not originally specified, are evaluated for performance at least equivalent to the original.

c. Where quality requirements for the original items cannot be determined, requirements and controls are established by engineering evaluation performed by qualified individuals. The evaluation assures there is no adverse effect on interfaces, interchangeability, safety, fit, form, function or compliance with applicable regulatory or code requirements. Evaluation results are documented.

d. Any additional or modified design criteria, imposed after previous procurement of the item(s), are identified and incorporated.

7.2.5 Receipt inspections are performed to verify that items are undamaged and properly identified, that they conform with safety-related procurement requirements not previously verified by source surveillance or inspection and that required supplier furnished documentation is available. Items inspected are identified as to their acceptance status prior to their storage or release for installation.

7.2.6 Suppliers are required to furnish the following records:

a. Applicable drawings and related engineering documentation that identify the purchased item and the specific procurement requirements (eg, codes, standards and specifications) met by the item.

b. Documentation identifying any procurement requirements that have not been met.

c. A description of those nonconformances from the procurement requirements dispositioned "accept as is" or "repair."

d. Quality records as specified in the procurement requirements.

The acceptability of these documents is evaluated during source and/or receipt inspection.

7.2.7 Supplier's certificates of conformance are periodically evaluated by audits, independent inspections or tests to assure that they are valid. The results of these evaluations are documented.

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8.0 IDENTIFICATION AND CONTROL OF ITEMS

8.1 POLICY

Safety-related materials, parts and components (items) are identified and controlled to prevent their inadvertent use. Identification of items is maintained either on the items, their storage areas or containers or on records traceable to the items.

8.2 IMPLEMENTATION

8.2.1 Controls are established that provide for the identification and control of materials (including consumables), parts and components, (including partially fabricated assemblies). Responsibility for the identification and control of items is described in Section 1.0, ORGANIZATION.

8.2.2 Items are identified by physically marking the item, its storage area or its container or by maintaining records traceable to the item. The method of identification is such that the quality of the item is not degraded.

8.2.3 Items are traceable to applicable drawings, specifications or other pertinent documents to ensure that only correct and acceptable items are used. Verification of traceability is performed and documented prior to release for fabrication, assembly or installation.

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9.0 CONTROL OF SPECIAL PROCESSES

9.1 POLICY

Special processes affecting safety-related structures, systems and components are controlled and are accomplished by qualified personnel using qualified procedures and equipment in accordance with applicable codes, standards, specifications, criteria and other special requirements.

9.2 IMPLEMENTATION

9.2.1 Processes subject to special process controls at CP Co are those for which full verification or characterization by direct inspection is impossible or impractical. Such processes include welding, heat treating, chemical cleaning, application of protective coatings, concrete placement and nondestructive examination.

9.2.2 Organizational responsibility for implementation of special processes and for qualification of procedures, personnel, and equipment used to perform special processes is indicated in Section 1.0, ORGANIZATION.

9.2.3 Special process procedures are prepared by personnel with expertise in the discipline involved. The procedures are reviewed for technical adequacy by other personnel with the necessary technical competence, and are qualified by testing, as necessary.

9.2.4 Special process personnel qualification is determined by individuals authorized to administer the pertinent examinations. Certification is based on examination results. Personnel qualification is kept current by performance of the special process(es) and/or reexamination at time intervals specified by applicable codes, specifications and standards. Unsatisfactory performance or, where applicable, failure to perform within the designated time intervals requires recertification.

9.2.5 For special processes that require qualified equipment, such equipment is qualified in accordance with applicable codes, standards and specifications.

9.2.6 Qualification records are maintained in accordance with QAPD Section 17.

9.2.7 The Quality Assurance Department audits special process qualification activities and performs inspection and surveillance of special processes to assure they are satisfactorily performed when specified by applicable inspection planning and/or site procedures. Such inspection and surveillance includes verification that process data are recorded as required, are within specified limits and are performed in accordance with applicable requirements.

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10.0 INSPECTION

10.1 POLICY

Activities affecting the quality of safety-related structures, systems and components are inspected to verify their conformance with requirements. These inspections are performed by people other than those who perform the activity being inspected. Direct inspection, process monitoring, or both, are used as necessary. Hold points are used as necessary to ensure that inspections are accomplished at the correct points in the sequence of work activities.

10.2 IMPLEMENTATION

10.2.1 Organizational responsibilities are as described in Section 1.0, ORGANIZATION.

10.2.2 Inspections are applied to procurement, maintenance, modification, testing, fuel handling and inservice inspection to verify that items and activities conform to specified requirements. Work authorizing documents (eg; procedures, instructions, maintenance work orders) are reviewed in accordance with established criteria to do the following as necessary:

a. Determine the need for inspection(s).

b. Identify the inspection organization.

c. Identify Hold and Notification points.

d. Determine how and when the inspections are to be performed.

e. Specify measuring and test equipment of the necessary accuracy for performing inspection.

f. Provide for documentation of inspection results to provide adequate objective evidence of acceptability.

Inspection is performed at each operation where it is necessary to verify quality.

Process monitoring is used in whole or in part where direct inspection alone is impractical or inadequate.

10.2.3 Training and qualification programs for personnel who perform inspections, including nondestructive examination, are established, implemented and documented in accordance with Section 2.0, QUALITY ASSURANCE PROGRAM. These programs meet the requirements of applicable codes and standards. The Quality Assurance Department reviews and concurs with any such programs that are not under its direct responsibility. Qualifications and certifications of inspection and NDE personnel are maintained.

10.2.4 Inspection requirements are specified in procedures, instructions, drawings or checklists and are either provided or concurred with by the authorized inspection planning organization. They (procedures, etc) provide for the following as appropriate:

a. Identification of applicable revisions of required instructions, drawings and specifications.

b. Identification of characteristics and activities to be inspected.

c. Inspection methods.

d. Specification of measuring and test equipment having the necessary accuracy.

e. Identification of personnel responsible for performing the inspection.

f. Acceptance and rejection criteria.

g. Recording of the inspection results and the identification of the inspector.

10.2.5 Inspection points are designated as mandatory hold points by designated inspection personnel when confirmation is needed that the work accomplished up to that point is acceptable before the work can be allowed to proceed further. Hold point inspections are performed, and work is released for further processing or use, by designated inspection personnel. Hold points may be waived only by the designated inspection planning organization.

10.2.6 Inspections are performed and documented in accordance with the written instructions provided. The results are evaluated by designated personnel in order to ensure that the results substantiate the acceptability of the item or work. Evaluation and review results are documented.

10.2.7 Inspection of work associated only with normal operation of the plant, such as surveillance tests and verifications of routine maintenance may be performed by individuals in the same group as that which performed the work, but not by personnel who directly performed or supervised the work. Peer inspection is acceptable provided:

a. The quality of the work can be demonstrated through a functional test when the work involves breaching a pressure retaining item.

b. The qualification criteria for the inspection personnel have been reviewed and found acceptable by the Quality Assurance Department. Minimum criteria are that individuals performing inspection must possess qualifications at least equal to those of the persons authorized to perform the task(s) that will be inspected.

11.0 TEST CONTROL

11.1 POLICY

Testing is performed in accordance with established programs to demonstrate that safety-related structures, systems and components will perform satisfactorily in service. The testing is performed in accordance with written procedures that incorporate specified requirements and acceptance criteria. The test program includes qualification (as applicable), acceptance, pre-operational, start-up, surveillance and maintenance tests. Test parameters, including any prerequisites, instrumentation requirements and environmental conditions are specified and met. Test results are documented and evaluated.

11.2 IMPLEMENTATION

11.2.1 Organizational responsibilities for testing are described in Section 1.0, ORGANIZATION.

11.2.2 Tests are performed in accordance with programs, procedures and criteria that designate when tests are required and how they are to be performed. Such testing includes the following:

a. Qualification tests, as applicable, to verify design adequacy in accordance with Section 3.0, DESIGN CONTROL.

b. Acceptance tests of equipment and components to assure their proper operation prior to delivery or to pre-operational tests.

c. Pre-operational tests to assure proper and safe operation of systems and equipment prior to start-up tests or operations.

d. Start-up tests, including precritical, criticality, low-power and power ascension tests, performed after refueling to assure proper and safe operation of systems and equipment.

e. Surveillance tests to assure continuing proper and safe operation of systems and equipment.

f. Maintenance tests after preventive or corrective maintenance.

11.2.3 Test procedures and instructions include provisions for the following, as applicable:

a. The requirements and acceptance limits contained in applicable design and procurement documents.

b. Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including accuracy requirements, completeness of the item to be tested, suitable and controlled environmental conditions and provisions for data collection and storage.

c. Instructions for performing the test.

d. Mandatory inspection hold points for witness by the appropriate authority.

e. Acceptance and rejection criteria.

f. Methods of documenting or recording test data and results.

g. Assuring that test prerequisites have been met.

h. QA verification of completion of modification activities.

Test procedures and instructions are reviewed by the engineering organizations for technical content and by the Quality Assurance Department for QA aspects.

11.2.4 The Quality Assurance Department verifies, through audits, inspection and surveillances, that test results are documented, evaluated and their acceptability is determined by responsible personnel.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 POLICY

Measuring and testing equipment used in activities affecting the quality of safety-related systems, components and structures are properly identified, controlled, calibrated and adjusted at specified intervals to maintain accuracy within necessary limits.

12.2 IMPLEMENTATION

12.2.1 The authority and responsibility of personnel establishing, implementing and assuring effectiveness of calibration programs is described in Section 1.0, ORGANIZATION.

12.2.2 Procedures are established for measuring and test equipment utilized in the measurement, inspection and monitoring of structures, systems and components. These procedures describe calibration technique and frequency and maintenance and control of the equipment.

12.2.3 Measuring and test equipment is uniquely identified and is traceable to its calibration source.

12.2.4 CP Co uses a system of labels to be attached to measuring and test equipment to display the next calibration due date. Where labels cannot be attached, a control system is used that identifies to potential users any equipment beyond the calibration due date.

12.2.5 Measuring and test equipment (M&TE) and installed plant instrumentation is calibrated at specified intervals based on the required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement.

Calibration of M&TE is against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, when this is not possible, have an accuracy that assures the equipment being calibrated will be within required tolerance and the basis of acceptance is documenced and authorized by responsible management.

Calibration standards used for installed plant instrumentation shall normally have greater accuracy than the instrumentation being calibrated. Standards with the same accuracy may be used when shown to be adequate for specific calibration requirements. The basis for this acceptance is documented and is approved by responsible management.

12.2.6 Calibrating standards have greater accuracy than standards being calibrated. Calibrating standards with the same accuracy may be used if it can be shown to be adequate for the requirements and the basis of acceptance is documented and authorized by responsible management.

12.2.7 Reference and transfer standards are traceable to nationally recognized standards; where national standards do not exist, provisions are established to document the basis for calibration.

12.2.8 When measuring and testing equipment used for inspection and test is found to be outside of required accuracy limits at the time of calibration, evaluations are conducted to determine the validity of the results obtained since the most recent calibration. The results of evaluations are documented. Retests or reinspections are performed on suspect items.

13.0 HANDLING, STORAGE AND SHIPPING

13.1 POLICY

Activities with the potential for causing contamination or deterioration that could adversely affect the ability of a safety-related item to perform its intended safety functions, and activities necessary to prevent undetected or uncorrectable damage are identified and controlled. These activities include cleaning, packaging, preserving, handling, shipping and storing. Controls are effected through the use of appropriate procedures and instructions implemented by suitably trained personnel.

13.2 IMPLEMENTATION

13.2.1 The authority and responsibility of personnel implementing and assuring the effectiveness of material cleaning, handling, storing, packaging, preserving and shipping activities is described in Section 1.0, ORGANIZATION.

13.2.2 Procedures are used to control the cleaning, handling, storing, packaging, preserving and shipping of materials, components and systems in accordance with design and procurement requirements. These procedures include, but are not limited to, the following functions:

a. Cleaning, to assure that required cleanliness levels are achieved and maintained.

b. Packaging and preservation, to provide adequate protection against damage or deterioration. When necessary, these procedures provide for special environments such as inert gas atmospheres, specific moisture content levels and temperature levels.

c. Handling, to preclude damage or safety hazards.

d. Storing, to minimize the possibility of loss, damage to or deterioration of items in storage, including consumables such as chemicals, reagents and lubricants. Storage procedures also provide methods to assure that specified shelf lives are not exceeded.

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14.0 INSPECTION, TEST AND OPERATING STATUS

14.1 POLICY

Operating status of safety-related structures, systems and components is indicated by tagging of valves and switches, or by other specified means, in such a manner as to prevent inadvertent operation. The status of inspections and tests performed on individual items is clearly indicated by markings and/or logging under strict procedural controls to prevent inadvertent bypassing of such inspections and tests.

14.2 IMPLEMENTATION

14.2.1 Organizational responsibilities are as described in Section 1.0, ORGANIZATION.

14.2.2 For modification activities, including item fabrication, installation and test, procurement documents, service contracts and procedures specify the degree of control required for the indication of inspection and test status of structures, systems and components.

14.2.3 Application and removal of inspection and welding stamps and of such status indicators as tags, markings, labels, etc, are controlled by procedures.

14.2.4 The sequence of inspections, tests and other operations important to safety are controlled by procedures. Changes in the approved sequence are subject to the same review and approval as the original.

14.2.5 The status of nonconforming, inoperable or malfunctioning structures, systems and components is clearly identified and documented to prevent inadvertent use.

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15.0 NONCONFORMING MATERIALS, PARTS OR COMPONENTS

15.1 POLICY

Safety-related materials, parts or components that do not conform to requirements are controlled in order to prevent their inadvertent use. Nonconforming items are identified. documented, segregated when practical and dispositioned. Affected organizations are notified of nonconformances.

15.2 IMPLEMENTATION

15.2.1 Items, services or activities that are deficient in characteristic, documentation or procedure, which render the quality unacceptable or indeterminate, are identified as nonconforming and any further use is controlled. Nonconformances are documented and dispositioned, and notification is made to affected organizations. Personnel authorized to disposition, conditionally release and close out nonconformances are designated. The authority and responsibility for the implementation of activities related to the processing and control of nonconforming materials, parts or components are described in Section 1.0, ORGANIZATION.

a. Nonconforming items are identified by marking, tagging or segregating or by documented administrative controls. Documentation describes the nonconformance, the disposition of the nonconformance and the inspection requirements. It also includes signature approval of the disposition.

b. The original inspection planning authority reviews the disposition of nonconformances, and documents concurrence with the acceptance, conditional release or repair of a nonconforming item.

c. Items that have been repaired or reworked are inspected and tested in accordance with the original inspection and test requirements or alternatives that have been documented as acceptable and concurred with by the original inspection planning authority.

d. Items that have the disposition of "repair" or "use as is" require documentation justifying acceptability. The changes are recorded to denote the as-built condition.

e. The Quality Assurance Department reviews "use as is" or "repair" dispositions which result in deviation from original design or specification requirements.

15.2.2 Dispositions of conditionally released items are closed out before the items are relied upon to perform safety-related functions.

15.2.3 Prior to the initiation of preoperational testing on an item, all nonconformances are corrected or dispositioned and evaluated for impact upon the item or the testing program.

15.2.4 Nonconformance reports are analyzed to identify quality trends. Trend reports, which highlight significant results, are issued periodically to upper management for review and assessment.

16.0 CORRECTIVE ACTION

16.1 POLICY

Conditions adverse to quality of safety-related structures, systems, components or activities, such as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances are identified promptly and corrected as soon as practical.

For significant conditions adverse to quality, the cause of the condition is determined and corrective action is taker to preclude repetition. In these cases, the condition, cause and corrective action taken is documented and reported to appropriate levels of management for review and assessment.

16.2 IMPLEMENTATION

16.2.1 The responsibility and authority for the control of corrective action are described in Section 1.0, ORGANIZATION.

16.2.2 Controls are established to assure that conditions adverse to quality are identified and documented and that appropriate remedial action is taken.

16.2.3 For significant conditions adverse to quality, necessary corrective action is promptly determined and recorded. Corrective action includes determining the cause and extent of the condition, and taking appropriate action to preclude similar problems in the future. The controls also assure that corrective action is implemented in a timely manner. The Quality Assurance Department reviews and documents concurrence with actions taken to prevent recurrence of significant conditions adverse to quality, performs follow-up to verify proper implementation and determines if additional action (such as audit or surveillance) is necessary to verify the effectiveness of action(s) taken.

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17.0 QUALITY ASSURANCE RECORDS

17.1 POLICY

Records that furnish evidence of activities affecting the quality of safety-related structures, systems and components are maintained. They are accurate, complete and legible and are protected against damage, deterioration or loss. They are identifiable and retrievable.

17.2 IMPLEMENTATION

17.2.1 Responsibilities for the identification and control of QA records are described in Section 1.0, ORGANIZATION.

17.2.2 Documents that furnish evidence of activities affecting quality are generated and controlled in accordance with the procedures that govern those activities. Upon completion, these documents are considered records. These records include:

a. Results of reviews, inspections, surveillances, tests, audits and material analyses

b. Qualification of personnel, procedures and equipment

c. Operating logs

d. Maintenance and modification procedures and related inspection results

e. Reportable occurrences

f. Records required by the plant technical specifications

g. Nonconformance reports

h. Corrective action reports

i. Other documentation such as drawings, specifications, procurement documents, calibration procedures and reports

17.2.3 Inspection and test records contain the following where applicable:

a. A description of the type of observation

b. The date and results of the inspection or test

c. Information related to conditions adverse to quality

d. Inspector or data recorder identification

e. Evidence as to the acceptability of the results

f. Action taken to resolve any discrepancies noted

17.2.4 When a document becomes a record, it is designated as permanent or nonpermanent and then transmitted to file. Nonpermanent records have specified retention times. Permanent records are maintained for the life of the item.

17.2.5 Temporary storage of completed documents during processing to become records is in special fire-resistant file cabinets.

17.2.6 Only authorized personnel may issue corrections or supplements to records.

17.2.7 Traceability between the record and the item or activity to which it applies is provided.

17.2.8 Records are stored in remote, dual facilities to prevent damage, deterioration or loss due to natural or unnatural causes. Records that can only be stored as originals, such as radiographs and some strip charts are retained in a four-hour fire-rated facility.

18.0 AUDITS

18.1 POLICY

A comprehensive system of audits is carried out to provide independent evaluation of compliance with and the effectiveness of the Quality Assurance Program, including those elements of the program implemented by suppliers and contractors. Audits are performed in accordance with written procedures or checklists by qualified personnel not having direct responsibility in the areas audited. Audit results are documented and are reviewed by management. Follow-up action is taken where indicated.

18.2 IMPLEMENTATION

18.2.1 Responsibility and authority for the audit program is described in Section 1.0, ORGANIZATION.

18.2.2 Internal audits are performed in accordance with established schedules that reflect the status and importance to safety of the activities being performed. All areas where the requirements of 10 CFR 50 Appendix B apply are audited within a period of two years. The following are audited at least once every 12 months:

a. Conformance of facility operations with applicable conditions of the technical specifications and license

b. The performance, training and qualifications of the facility staff

c. Controls over plant modifications, including the frequency, effectiveness and technical adequacy of the use of supervisors as design verifiers.

18.2.3 Audits of suppliers and contractors are scheduled based on the status and safety importance of the activities being performed and are initiated early enough to assure effective quality assurance during design, procurement, manufacturing, construction, installation, inspection and testing.

18.2.4 Principal contractors are required to audit their suppliers systematically in accordance with the foregoing scheduling criteria.

18.2.5 Regularly scheduled audits are supplemented by special audits when significant changes are made in the Quality Assurance Program, when it is suspected that quality is in jeopardy or when an independent assessment of program effectiveness is considered necessary.

18.2.6 Audits include an objective evaluation of quality-related practices, procedures, instructions, activities and items and review of documents and records to confirm that the QA Program is effective and properly implemented.

18.2.7 Audit procedures and the scope, plans, checklists and results of individual audits are documented.

18.2.8 Personnel selected for auditing assignments have experience or are given training commensurate with the needs of the audit and have no direct responsibilities in the areas audited.

18.2.9 Audit data are analyzed by the Quality Assurance Department. The resulting audit reports identify any quality deficiencies and assess the effectiveness of the QA Program in the area audited. The reports are distributed to the responsible management of both the audited and auditing organizations.

18.2.10 Management of the audited organization identifies and takes appropriate corrective action to correct observed deficiencies and to prevent recurrence of any significant conditions adverse to quality. Follow-up is performed by the Quality Assurance Department to ensure that the appropriate corrective action is taken and is effective. Such follow-up includes reaudits when necessary.

18.2.11 Audits of operational nuclear safety-related facility activities shall be performed under the cognizance of Nuclear Safety Services Department.

QAPD MANUAL
APPENDIX A, PART 1
REGULATORY GUIDE AND ANSI STANDARD COMMITMENTS

The Consumers Power Company Quality Assurance Program complies with the regulatory position of the Regulatory Guides referenced in this appendix as modified by the exceptions stated in Part 2.

1. Appendix B to 10 CFR, Part 50, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants.

2. 10 CFR, Part 50.55a - Codes and Standards.

3. Regulatory Guide 1.8 - (9/80 Draft) - Personnel Qualification and Training - Endorses ANSI/ANS 3.1 - (12/79 Draft).

4. Regulatory Guide 1.26 - (2/76, Rev 3) - Quality Group Classification, and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants.

5. Regulatory Guide 1.29 - (9/78, Rev. 3) - Seismic Design Classification.

6. Regulatory Guide 1.30 (Safety Guide 30) - (8/11/72) - Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electrical Equipment - Endorses ANSI N45.2.4 - 1972.

7. Regulatory Guide 1.33 - (2/78, Rev 2) - Quality Assurance Program Requirements (Operation) - Endorses ANSI N18.7 - 1976.

8. Regulatory Guide 1.37 - (3/16/73) - Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants - Endorses ANSI N45.2.1 - 1973.

9. Regulatory Guide 1.38 - (5/77, Rev 2) - Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants - Endorses ANSI N45.2.2 - 1972.

10. Regulatory Guide 1.39 - (9/77, Rev 2) - Housekeeping Requirements for Water-Cooled Nuclear Power Plants - Endorses ANSI N45.2.3 - 1973.

11. Regulatory Guide 1.58 - (9/80, Rev 1) - Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel - Endorses N45.2.6 1978.

12. Regulatory Guide 1.64 - (6/76, Rev 2) - Quality Assurance Requirements for the Design Of Nuclear Power Plants - Endorses N45.2.11 - 1974.

13. Regulatory Guide 1.74 - (2/74) - Quality Assurance Requirements Terms and Definitions - Endorses ANSI N45.2.10 - 1973.

14. Regulatory Guide 1.88 - (10/76, Rev 2) - Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records - Endorses N45.2.9 - 1974.

15. Regulatory Guide 1.94 - (4/76, Rev 1) - Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants - Endorses ANSI N45.2.5 - 1974.

16. Regulatory Guide 1.116 - (5/77) - Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems - Endorses ANSI N45.2.8 - 1975.

17. Regulatory Guide 1.123 - (7/77, Rev 1) - Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants - Endorses N45.2.13 - 1976.

18. Regulatory Guide 1.144 - (9/80, Rev 1) - Auditing of Quality Assurance Programs for Nuclear Power Plants - Endorses N45.2.12 - 1977.

19. Regulatory Guide 1.146 - (8/80) - Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants - Endorses N45.2.23 - 1978.

20. Branch Technical Position ASB9.5.1 (Rev 1) Guidelines for Fire Protection for Nuclear Power Plants.

21. 10CFR50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979, Sections III G., III J. and III O.

QAPD MANUAL
APPENDIX A, PART 2
CP CO EXCEPTIONS TO OPERATING PHASE STANDARDS AND REGULATORY GUIDES

1. General

Requirement

Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses.

Certain ANSI Standards invoke or imply additional standards.

Exception/Interpretation

The CP Co commitment refers to the Regulatory Guides and ANSI Standards specifically identified in Appendix A, Part 1. Additional Regulatory Guides, ANSI Standards and similar documents implied or referenced in those specifically identified are not part of this commitment.

Imposition of these Regulatory Guides on CP Co suppliers and subtier suppliers will be on a case-by-case basis depending upon the item or service to be procured.

2. N18.7 General

Exception/Interpretation

Consumers Power Company has established an organizational unit, Nuclear Safety Services Department (NSSD), for independent review activities.

The standard numeric and qualification requirements may not be met by the NSSD. Procedures will be established to specify how NSSD will acquire necessary expertise to carry out its review responsibilities in accordance with Plant Technical Specifications.

2a. N18.7, Sec 3.4.2

Requirement

"The Plant Manager shall have overall responsibility for the execution of the administrative controls and quality assurance program at the plant to assure safety."

Exception/Interpretation

Since CP Co has more than one nuclear unit and more than one organization providing services to these units, overall responsibility cannot be centralized in a single on-site position. Instead, responsibilities are as designated within the QA Program Description.

2b. Sec 4.3.1

Requirement

"Personnel assigned responsibility for independent reviews shall be specified in both number and technical disciplines and shall collectively have the experience and competence required to review problems in the following areas:..."

Exception/Interpretation

Nuclear Safety Services Department will not have members specified by number or by technical disciplines and its members may not have the experience and competence required to review problems in all areas listed in this section; however, the NSSD will function as described in Plant Technical Specifications and will acquire the services of personnel having such experience and competence as necessary.

2c. Sec 4.3.4

Requirement

"The following subjects shall be reviewed by the independent review body:"

Exception/Interpretation

Subjects requiring review will be as specified in the Plant Technical Specifications.

2d. Sec 4.3.4(3)

Requirement

"Changes in the Technical Specifications or license amendments relating to nuclear safety are to be reviewed by the independent review body prior to implementation, except in those cases where the change is identical to a previously reviewed proposed change.

Exception/Interpretation

The Nuclear Safety Services Department will not review Technical Specification Changes after NRC approval prior to implementation. The basis for this position is that NSSD reviews all Technical Specification changes prior to submittal to the NRC.

2e. Sec 4.5

Requirement

"Written reports of audits specified in ANSI N18.7 shall be reviewed by the independent review body and by appropriate members of Management including those having responsibility in the area audited."

Exception/Interpretation

The independent review body reviews or arranges for reviews of those audits over which it has cognizance, in accordance with the individual plant Technical Specifications.

Some of the QA audits required during the operational phase are in areas other than those requiring independent review in accordance with ANSI N18.7, Section 4.3.4.

2f. Sec 4.5

Requirement

Periodic review of the audit program shall be performed by the independent review body or by a management representative at least semiannually to assure that audits are being accomplished in accordance with requirements of technical specifications and of this standard.

Exception/Interpretation

Audits of operational nuclear safety related facility activities are performed under the cognizance of the offsite Nuclear Safety Services Department as described in individual plant technical specifications.

2g. Sec 5.2.1

Requirement

"The responsibilities and authorities of the plant operating personnel shall be delineated."

Exception/Interpretation

On-site personnel not directly associated with operating activities, as defined in ANSI N18.7, Section 2.2, are not considered to be operating personnel.

2h. Sec 5.2.2

Requirement

"Temporary changes, which clearly do not change the intent of the approved procedure, shall as a minimum be approved by two members of the plant staff knowledgeable in the areas affected by the procedures. At least one of these individuals shall be the supervisor in charge of the shift and hold a senior operators license on the unit affected."

Exception/Interpretation

CP Co considers that this requirement applies only to procedures identified in plant technical specifications. Temporary changes to these procedures shall be approved as described in plant technical specifications.

2i. Sec 5.2.6

Requirement

"In cases where required documentary evidence is not available, the associated equipment or materials must be considered nonconforming in accordance with Section 5.2.14. Until suitable documentary evidence is available to show the equipment or material is in conformance, affected systems shall be considered to be inoperable and reliance shall not be placed on such systems to fulfill their intended safety functions."

Exception/Interpretation

CP Co initiates appropriate corrective action when it is discovered that documentary evidence does not exist for a test or inspection which is required to verify equipment acceptability. This action includes a technical evaluation of the equipment's operability status.

2j. Sec 5.2.8

Requirement

"A surveillance testing and inspection program...shall include the establishment of a master surveillance schedule reflecting the status of all planned inplant surveillance tests and inspections."

Exception/Interpretation

Separate master schedules may exist for different programs such as ISI, Pump and Valve Testing and Technical Specification Surveillance Testing.

2k. Sec 5.2.13.1

Requirement

"To the extent necessary, procurement documents shall require suppliers to provide a quality assurance program consistent with the pertinent requirements of ANSI N45.2 - 1971."

Exception/Interpretation

To the extent necessary, procurement documents require that the supplier have a documented quality assurance program consistent with the pertinent requirements of ANSI N45.2 or other nationally recognized codes and standards.

21. Sec 5.2.13.2

Requirement

ANSI N18.7 and N45.2.13 specify that where required by code, regulation or contract, documentary evidence that items conform to procurement requirements shall be available at the nuclear power plant site prior to installation or use of such items.

Exception/Interpretation

The required documentary evidence is available at the site prior to use, but not necessarily prior to installation. This allows installation to proceed while any missing documents are being obtained, but precludes dependence on the item for safety purposes.

2m. Sec 5.2.15

Requirement

Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable.

Exception/Interpretation

Based on amplification provided in ANSI/ANS 3.2-1982, section 5.2.15, Consumers Power Company interprets that this requirement for routine followup review can be accomplished in several ways, including (but not limited to): documented step-by-step use of the procedure (such as occurs when the procedure has a step-by-step checkoff associated with it) or detailed scrutiny of the procedure as part of a documented training program, drill, simulator exercise, or other such activity.

2n. Sec 5.2.16

Requirement

Records shall be made and equipment suitably marked to indicate calibration status.

Exception/Interpretation

See Item 9c.

2o. Sec 5.3.5(3)

Requirement

Instructions shall be included, or referenced, [in maintenance procedures], for returning the equipment to its normal operating status.

Exception/Interpretation

At CP Co, equipment is returned to its normal operating status, ie, declared operable, by licensed Operations Department personnel, not Maintenance personnel. Operations personnel verify and document equipment operability through second level line-up verification or appropriate functional testing. Thus "maintenance procedures" do not contain or directly reference such instructions.

2p. Sec 5.3.5(4)

Requirement

This section requires that where sections of documents such as vendor manuals, operating and maintenance instructions or drawings are incorporated directly or by reference into a maintenance procedure, they shall receive the same level of review and approval as operating procedures.

Exception/Interpretation

Such documents are reviewed by appropriately qualified personnel prior to use to ensure that, when used as instructions, they provide proper and adequate information to ensure the required quality of work. Maintenance procedures which reference these documents receive the same level of review and approval as operating procedures.

3a. RG 1.33, Sec C4a

Requirement

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

Exception/Interpretation

The corrective action system trend reports are reviewed by the independent review body. In addition, the corrective action system is audited at least once every two years with additional audits and investigations performed as indicated necessary by the trend report reviews.

3b. RG 1.33, Sec C4b

Requirement

The conformance of facility operations to provisions contained within the technical specifications and applicable license conditions - at least once per 12 months.

Exception/Interpretation

Consistent with guidance presented in NRC letters dated March 29, 1983 (RLSpessard to JMTaylor) and January 30, 1984 (JGPartlow to RLSpessard), Consumers Power Company interprets the commitment to audit technical specification/license conditions contained in 18.2.2(a) of this QAPD, and in section 6.5.2.8(a) of both Palisades and Big Rock Point technical specifications, as follows:

Consumers Power Company maintains a matrix that identifies all applicable Technical Specification line items to be audited. The matrix is updated annually to conform to approved Technical Specification changes. During each 12 month period, a selected sample of line items in each of the following elements is audited:

1. Limiting Conditions for Operation
2. Limiting Safety System Settings
3. Reactivity Control Systems
4. Power Distribution Limits
5. Instrumentation

6. Reactor Coolant System
7. Emergency Core Cooling System
8. Containment Systems
9. Plant Systems
10. Electrical Power Systems
11. Refueling Operations
12. Special Tests
13. Onsite Committee
14. Offsite Committee
15. Administrative Controls

Audits are scheduled so that all line items are covered within a maximum period of 5 years. The audit period for any of the above elements may be reduced depending on Technical Specification compliance history.

4a. ANS 3.1, General

Exception/Interpretation

The CP Co commitment in this QA Program Description to ANS 3.1 is limited to those requirements which apply to the training and qualification of personnel performing QA/QC functions.

5a. RG 1.8, C.3.1, General

Exception/Interpretation

The CP Co commitment in this QA Program Description is limited to those requirements which apply to the training and qualification of personnel performing QA/QC functions.

5b. C1.2.2

Requirement

"When an individual is hired to temporarily function as a plant employee, such as for contracted services, evidence of previous education, experience and training should be provided and reviewed by the appropriate professional-technical group leaders. The appropriate group leaders should then determine the content for that individual's training, including plant-specific training. As a minimum, each individual should receive General Employee Training."

Exception/Interpretation

CP Co understands that this requirement applies both to CP Co employees from another site and to contract personnel who are temporarily assigned to a nuclear power plant either as replacements for regular employees or to augment the staff during outages. CP Co employees so

assigned possess the required qualifications as a prerequisite to the assignment and the review is waived. The qualifications of contract personnel are reviewed and arrangements made for any necessary training. Temporarily assigned personnel requiring unescorted access receive the site general orientation as embodied in General Employee Training.

6a. N45.2.1, Sec 3.1

Requirement

N45.2.1 establishes criteria for classifying items into "cleanness levels," and requires that items be so classified.

Exception/Interpretation

Instead of using the cleanness level classification system of N45.2.1, the required cleanness for specific items and activities is addressed on a case-by-case basis.

Cleanness is maintained, consistent with the work being performed, so as to prevent the introduction of foreign material. As a minimum, cleanness inspections are performed prior to system closure. Such inspections are documented.

6b. Sec 5

Requirement

"Fitted and tack-welded joints (which will not be immediately sealed by welding) shall be wrapped with polyethylene or other nonhalogenated plastic film until the welds can be completed."

Exception/Interpretation

CP Co sometimes uses other nonhalogenated material, compatible with the parent material, since plastic film is subject to damage and does not always provide adequate protection.

7a. N45.2.2, General

Requirement

N45.2.2 establishes requirements and criteria for classifying safety-related items into protection levels.

Exception/Interpretation

Instead of classifying safety-related items into protection levels, controls over the packaging, shipping, handling and storage of such items are established on a case-by-case basis with due regard for the

item's complexity, use and sensitivity to damage. Prior to installation or use, the items are inspected and serviced as necessary to assure that no damage or deterioration exists which could affect their function.

7b. Sec 2.4

Requirement

"...Offsite inspection, examination or testing shall be audited and monitored by personnel who are qualified in accordance with N45.2.6."

Exception/Interpretation

Offsite inspection, examination or testing activities are audited or inspected by persons qualified and certified in accordance with ANSI N45.2.23-1978, as endorsed by Reg Guide 1.146, or ANSI N45.2.6, as endorsed by Reg Guide 1.58, respectively. Monitoring activities not involving audit or inspection may be conducted by persons trained and qualified to effectively carry out such tasks, but not necessarily certified to either ANSI N45.2.23 or N45.2.6.

7c. Sec 3.4.1 and Appendix A, 3.4.1(4) and (5)

Requirement

"(4) ... However, preservatives for inaccessible inside surfaces containing reactor coolant water shall be indicated to facilitate touch up.

(5) The name of the preservative used shall be the water flushable type."

Exception/Interpretation

Based on comparison of these statements to ANSI/ASME NQA-2 1983, CP Co believes the intent was to establish the following as requirements:

(4) ... However, preservatives for inaccessible inside surfaces of pumps, valves and pipe for systems containing reactor coolant water shall be the water flushable type.

(5) The name of the preservative used shall be provided to facilitate touch-up.

7d. Sec 3.9 and Appendix A 3.9

Requirement

"The item and the outside of containers shall be marked."

(Further criteria for marking and tagging are given in the appendix.)

Exception/Interpretation

These requirements were originally written for items packaged and shipped to construction projects. Full compliance is not always necessary in the case of items shipped to operating plants and may, in some cases, increase the probability of damage to the item. The requirements are implemented to the extent necessary to assure traceability and integrity of the item.

7e. Sec 5.2.2

Requirement

"The inspections shall be performed in an area equivalent to the level of storage."

Exception/Interpretation

Receiving inspection area environmental controls may be less stringent than storage environmental requirements for an item. However, such inspections are performed in a manner and in an environment which do not endanger the required quality of the item.

7f. Sec 6.2.4

Requirement

"The use or storage of food, drinks and salt tablet dispensers in any storage area shall not be permitted."

Exception/Interpretation

Packaged food for emergency or extended overtime use may be stored in material stock rooms. The packaging assures that materials are not contaminated. Food will not be "used" in these areas.

7g. Sec 6.3.4

Requirement

"All items and their containers shall be plainly marked so that they are easily identified without excessive handling or unnecessary opening of crates and boxes."

Exception/Interpretation

See N45.2.2, Section 3.9 (Exception 7d.).

7h. Sec 6.4.1

Requirement

"Inspections and examinations shall be performed and documented on a periodic basis to assure that the integrity of the item and its container...is being maintained."

Exception/Interpretation

The requirement implies that all inspections and examinations of items in storage are to be performed on the same schedule. Instead, the inspections and examinations are performed and documented in accordance with material storage rocedures which identify the characteristics to be inspected and include the required frequencies. These procedures are based on technical considerations which recognize that inspections and frequencies needed vary from item to item.

8a. N45.2.3, Sec 2.1

Requirement

Cleanness requirements for housekeeping activities shall be established on the basis of five zone designations.

Exception/Interpretation

Instead of the five-level zone designation system referenced in ANSI N45.2.3, CP Co bases its controls over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are effected through procedures or instructions which, in the case of maintenance or modifications work, are developed on a case-by-case basis. Factors considered in developing the procedures and instructions include cleanliness control, personnel safety, fire prevention and protection, radiation control and security. The procedures and instructions make use of standard janitorial and work practices to the extent possible. However, in preparing these procedures, consideration is also given to the recommendations of Section 2.1 of ANSI N45.2.3.

9a. N45.2.4, Sec 2.2

Requirement

Section 2.2 establishes prerequisites which must be met before the installation, inspection and testing of instrumentation and electrical equipment may proceed. These prerequisites include personnel qualification, control of design, conforming and protected materials, and availability of specified documents.

Exception/Interpretation

During the operations phase, this requirement is considered to be applicable to modifications and initial start-up of electrical equipment. For routine or periodic inspection and testing, the prerequisite conditions will be achieved as necessary.

9b. Sec 2.2(5)

Requirement

Section 2.2(5) of ANSI N45.2.4 lists documents which are to be available at the construction site.

Exception/Clarification

All of the documents listed are not necessarily required at the plant site for installation and testing. CP Co assures that they are available to the site as necessary.

9c. Sec 6.?.1

Requirement

"Items requiring calibration shall be tagged or labeled on completion, indicating date of calibration and identity of person that performed the calibration."

Exception/Interpretation

Frequently, physical size and/or location of Installed Plant Instrumentation (IPI) mandates that calibration labels or tags not be affixed to IPI. Instead, each instrument is uniquely identified and is traceable to its calibration record.

A scheduled calibration program assures that each instrument's calibration is current.

10a. N45.2.5, Sec 2.4

Requirement

"Persons charged with engineering managerial responsibility of the inspection and testing organization at the site in either a resident or non-resident capacity shall be certified for Level III capability."

Exception/Interpretation

This standard (N45.2.5) was written for the construction phase of nuclear power plants; as such, it presumes significant activity in the areas of concrete and structural steel which do not generally occur at an operating plant. At Consumers Power, persons having engineering managerial responsibility for inspections and tests* may be certified to Level III, or may meet other qualification criteria established for the position, including, but not limited to, nuclear power and management experience. For major modifications involving significant concrete or structural steel work, the services of a properly qualified Level III individual will be obtained in at least an advisory capacity.

*within the scope of N45.2.5

10b. N45.2.5, Sec 2.5.2

Requirement

"When discrepancies, malfunctions or inaccuracies in inspection and testing equipment are found during calibration, all items inspected with that equipment since the last previous calibration shall be considered unacceptable until an evaluation has been made by the responsible authority and appropriate action taken."

Exception/Interpretation

CP Co uses the requirements of N18.7, Section 5.2.16, rather than N45.2.5, Section 2.5 2. The N18.7 requirements are more applicable to an operating plant.

10c. Sec 5.4

Requirement

"Hand torque wrenches used for inspection shall be controlled and must be calibrated at least weekly and more often if deemed necessary. Impact torque wrenches used for inspection must be calibrated at least twice daily."

Exception/Interpretation

Torque wrenches are controlled as measuring and test equipment in accordance with ANSI N18.7, Section 5.2.16. Calibration intervals are based on use and calibration history rather than as per N45.2.5

11a. N45.2.6, Sec 1.2

Requirement

"The requirements of this standard apply to personnel who perform inspections, examinations, and tests during fabrication prior to and during receipt of items at the construction site, during construction, during preoperational and start-up testing and during operational phases of nuclear power plants."

Exception/Interpretation

Qualification of plant personnel who are involved with testing associated with plant operation is provided in specific plant specifications.

In addition, personnel participating in inspection or testing who take data or make observations, where special training is not required to perform this function, need not be qualified in accordance with ANSI N45.2.6 but need only be trained to the extent necessary to perform the assigned function.

12a. RG 1.58, Sec 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

CP Co endorses this position, as also stated in 11a, above, except that offsite support organizations involved in testing may apply ANSI N45.2.6. Some of these departments have already developed their qualification programs based on ANSI N45.2.6, and provide services throughout the operations phase of CP Co Nuclear Plants.

12b. Sec 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 CP Co as requiring personnel who review, approve or evaluate such procedures to be certified as Level III personnel.

12c. Sec 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 our qualification and certification program is based upon these recommendations, and more significantly, upon satisfactory completion of capability testing prior to certification. It is our position that a candidate should not be required to be a high school graduate or have earned the GED equivalent for the above reasons.

12.d Sec 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

We will maintain documented objective evidence that demonstrates that an individual 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.

13a. N45.2.8, Sec 2.7

Requirement

Section 2.7 requires that personnel performing inspection and test activities be qualified according to ANSI N45.2.6.

Exception/Interpretation

See Exception/Interpretation 11a and 12a. Test personnel who are part of the plant staff need not be certified to N45.2.6, provided they meet applicable qualification criteria of plant Technical Specifications.

13b. Sec 2.9

Requirement

Section 2.9 establishes prerequisites which must be met before the installation, inspection and testing of mechanical equipment may proceed. These prerequisites include personnel and procedure qualification, control of design, material selection and fabrication, and availability of specified documents.

Exception/Interpretation

During the operations phase, this requirement is considered to be applicable to modifications of mechanical equipment. For routine or periodic inspection and testing, the prerequisites will be achieved as necessary.

13c. N45.2.8, Sec 2.9e

Requirement

Section 2.9e of N45.2.8 lists documents relating to the specific stage of installation activity which are to be available at the construction site.

Exception/Interpretation

All of the documents listed are not necessarily required at the plant site for installation and testing. CP Co assures that they are available to the site as necessary.

13d. Sec 2.9e

Requirement

Evidence that engineering or design changes are documented and approved shall be available at the construction site prior to installation.

Exception/Interpretation

Equipment may be installed before final approval of engineering or design changes. However, the system is not declared operable until such changes are documented and approved.

13e. Sec 4.5.2

Requirement

"Installed systems and components shall be cleaned, flushed and conditioned according to the requirements of ANSI N45.2.1. Special consideration shall be given to the following requirements:...."
(Requirements are given for chemical conditioning, flushing and process controls.)

Exception/Interpretation

Systems and components are cleaned, flushed and conditioned as determined on a case-by-case basis. Measures are taken to help preclude the need for cleaning, flushing and conditioning through good practices during maintenance or modification activities.

14a. N45.2.9, Sec 5.4, Item 2

Requirement

Records shall not be stored loosely. They shall be firmly attached in binders or placed in folders or envelopes for storage on shelving in containers. Steel cabinets are preferred.

Exception/Interpretation

Records are suitably stored in steel file cabinets or on shelving in containers. Methods other than binders, folders or envelopes (for example, dividers) may be used to organize the records for storage.

14b. Sec 6.2

Requirement

"A list shall be maintained designating those personnel who shall have access to the files."

Exception/Interpretation

Rules are established governing access to and control of files as provided for in ANSI N45.2.9, Section 5.3, Item 5. These rules do not always include a requirement for a list of personnel who are authorized access. It should be noted that duplicate files and/or microforms exist for general use and backup.

14c. RG 1.88, C2

Requirement

"Two methods of protection of quality assurance records from the hazards of fire are described in Subdivision 5.6 of ANSI N45.2.9-1974. NFPA No 232-1975 . . . also contains provisions for records protection equipment and records handling techniques that provide protection from the hazards of fire. This standard, within its scope of coverage, is considered by the NRC staff to provide an acceptable alternative to the fire protection provisions listed in Subdivision 5.6 . . . When NFPA 232-1975 is used, quality assurance records should be classified as NFPA Class 1 records . . ."

Exception/Interpretation

CP Co adheres to ANSI N45.2.9-1974, Subdivision 5.6 for the facility for permanent storage of non-duplicated records. Temporary storage of documents after completion and during processing as records is in file cabinets selected in accordance with provisions of NFPA 232-1975 for Class 1 records (usually NFPA Class C, 1 hour or UL-Class 350).

15a. RG 1.64, C2

Requirement

"Regardless of their title, individuals performing design verification should not (1) have immediate supervisory responsibility for the individual performing the design...."

Exception/Interpretation

CP Co follows the requirements of ANSI N45.2.11-1974, Section G.1, and the guidance of Section 3E4(a) of the Standard Review Plan, with the exception that use of supervisors as design verifiers may be controlled by a procedure instead of individually approved in advance in each case (see Section 3.2.9, herein). This approach is necessary to allow small organizational units (having limited numbers of technically qualified staff, or having the only technically qualified staff available in the Company) the flexibility needed to most effectively accomplish their assigned tasks.

16a. RG 1.144, Sec C3a(1)

Requirement

This section requires that for operational phase activities, RG 1.33 "Quality Assurance Program Requirements (Operations)" are to be followed. One of the RG 1.33 requirements is that the results of actions taken to correct deficiencies that affect nuclear safety and occur in facility equipment, structures, systems, or method of operation are to be audited at least once per six months.

Exception/Interpretation

See Item 3a for the exception to this requirement.

16b. Sec C3a(2)

Requirement

Applicable elements of an organization's quality assurance program (for "design and construction phase activities") should be audited at least annually or at least once within the life of the activity, whichever is shorter.

Exception/Interpretation

Since most modifications are straightforward, they are not audited individually. Instead, selected controls over modifications are audited periodically.

16c. Sec C3b(1)

Requirement

This section identifies procurement contracts which are exempted from being audited.

Exception/Interpretation

In addition to the exemptions of RG 1.144, CP Co considers that Authorized Inspection Agencies, National Bureau of Standards or other State and Federal Agencies which may provide services to CP Co are not required to be audited.

17a. N45.2.13, Sec 3.2.2

Requirement

N45.2.13 requires that technical requirements be specified in procurement documents by reference to technical requirement documents. Technical requirement documents are to be prepared, reviewed and released under the requirements established by ANSI N45.2.11.

Exception/Interpretation

For replacement parts and materials", CP Co follows ANSI N18.7, Section 5.2.13, Subitem 1, which states: "Where the original item or part is found to be commercially 'off the shelf' or without specifically identified QA requirements, spare and replacement parts may be similarly procured, but care shall be exercised to ensure at least equivalent performance."

17b. Sec 3.2.3

Requirement

"Procurement documents shall require that the supplier have a documented quality assurance program that implements parts or all of ANSI N45.2 as well as applicable quality assurance program requirements of other nationally recognized codes and standards."

Exception/Interpretation

Refer to Item 2k.

17c. Sec 3.3(a)

Requirement

Reviews of procurement documents shall be performed prior to release for bid and contract award.

Exception/Interpretation

Documents may be released for bid or contract award before completing the necessary reviews. However, these reviews are completed before the item or service is put into service or before work has progressed beyond the point where it would be impractical to reverse the action taken.

17d. Sec 3.3(b)

Requirement

"Changes made in the procurement documents as a result of the bid evaluations or precontract negotiations shall be incorporated into the procurement documents. The review of such changes and their effects shall be completed prior to contract award."

Exception/Interpretation

This requirement applies only to quality related changes (ie, changes to the procurement document provisions identified in ANSI N18.7, Section 5.2.13.1, Subitems 1 through 5.) The timing of reviews will be the same as for review of the original procurement document.

17e. Sec 7.5

Requirement

"Personnel responsible for performing verification activities shall be qualified in accordance with ANSI N45.2.6 as applicable."

Exception/Interpretation

Consumers Power qualifies audit personnel according to N45.2.23. Thus, personnel performing source verification audits may not be certified according to N45.2.6. Personnel performing inspection as part of source verification will be certified to N45.2.6.

17f. Sec 10.1

Requirement

"Where required by code, regulation or contract requirement, documentary evidence that items conform to procurement documents shall be available at the nuclear power plant site prior to installation or use of such items, regardless of acceptance methods."

Exception/Interpretation

Refer to Item 21.

17g. Sec 10.3.4 (as modified by RG 1.123, C6e)

Requirement

"Post-installation test requirements and acceptance documentation shall be mutually established by the purchaser and supplier."

Exception/Interpretation

In exercising its ultimate responsibility for its QA program, CP Co establishes post-installation test requirements, giving due consideration to supplier recommendations.

18a. RG 1.26, General

Requirement

RG 1.26 establishes a system for classifying pressure boundary items into four quality groups, which are then correlated with ASME B&PV Code and ANSI Standards requirements. (However, RG 1.26 does not indicate which of the four quality groups are safety-related, and which are not.)

Exception/Interpretation

RG 1.26 was used as a reference to establish piping system boundaries, but not for defining specific quality groups or making safety-related determinations. Regulatory Guide 1.29, subject to Exception/Interpretation 20a, is used to determine what systems and equipment are safety-related.

19a. Branch Technical Position ASB9.5.1 and 10CFR50 Appendix R, Sections III G., III J. and III O., General

Exception/Interpretation

Fire protection measures, equipment and the individual plant Fire Protection Plans are in compliance with the NRC Safety Evaluation Reports and the required sections of 10CFR50 Appendix R except for the specific exemptions approved by the NRC.

20a. RG 1.29, Sec C, Regulatory Position

Requirement

The Regulatory Position states that the identified structures, systems, and components are to be designated Seismic Category I and should be designed to withstand the SSE.

Exception/Interpretation

Both CP Co nuclear plants (Big Rock Point and Palisades) were designed, constructed and licensed based on criteria available prior to Revision 3 of this Regulatory Guide being issued. The specific design criteria and seismic designations are reflected in the FHSR and FSAR, respectively, and in other docketed analysis. Thus, the design bases and seismic designations do not correspond to those of Regulatory Guide 1.29.

The criteria of this Regulatory Guide are used at CP Co primarily in the identification of systems, structures, and components to which the QA Program is applied (see 20b, below).

20b. RG 1.29, General

Requirement

Apply pertinent Quality Assurance requirements of 10CFR50, Appendix B.

Exception/Interpretation

The pertinent QA requirements for these systems, structures and components will be determined in a graded manner using tools such as the plant specific Probabilistic Risk Assessment and the Technical Specifications, and other docketed analyses to determine the degree which Appendix B of 10CFR50 applies.