6. Changed Department name **from** Engineering and Construction **to** Nuclear Engineering and Technology Services

7. Transferred the responsibility of the Nuclear Business Unit **from** Senior Vice President (Energy Facilities) **to** Vice President and Chief Nuclear Officer.

8. The **Vice President of Nuclear Operations Support** has assumed the responsibility for the following Departments: Nuclear Support, and Performance Monitoring and Improvement.

Please direct any comments or questions to this office.

Sincerely,

for Joseph A. Bauer
Nuclear Licensing Administrator

JAB/gp

Attachment: CECo Topical Report CE-1-A, Revision 64

cc: J.B. Martin, Regional Administrator-RIII, (2 copies)

# TABLE OF CONTENTS & INDEX (Rev. 64) 15 pages

## Preface & Policy (Rev. 64) 1 page

## SECTION 1, ORGANIZATION (Rev. 64) 26 pages

## SECTION 2, QUALITY ASSURANCE PROGRAM (Rev. 64) 10 pages

## SECTION 4, PROCUREMENT DOCUMENT CONTROL (Rev. 64) 5 pages



## SECTION 5, INSTRUCTIONS, PROCEDURES AND DRAWINGS (Rev. 64) 3 pages

## SECTION 6, DOCUMENT CONTROL (Rev. 64) 4 pages



## SECTION 7, CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (Rev. 64) 15 pages

## SECTION 8, IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

(Rev. 64) 3 pages



## SECTION 9, CONTROL OF SPECIAL PROCESSES

(Rev. 64) 4 pages

## SECTION 10, INSPECTION (Rev. 64) 5 pages



## SECTION 11, TEST CONTROL (Rev. 64) 16 pages

## SECTION 12, CONTROL OF MEASURING AND TEST EQUIPMENT (Rev. 64) 5 pages

## SECTION 13, HANDLING, STORAGE AND SHIPPING (Rev. 64) 3 pages

## SECTION 14, INSPECTION, TEST AND OPERATING STATUS (Rev. 64) 6 pages



## SECTION 15, NONCONFORMING MATERIALS, PARTS OR COMPONENTS (Rev. 64) 6 pages

## SECTION 16, CORRECTIVE ACTION (Rev. 64) 8 pages



## SECTION 17, QUALITY ASSURANCE RECORDS (Rev. 64) 4 pages

## SECTION 18, AUDITS (Rev. 64) 4 pages

## SECTION 19, AUGMENTED QUALITY (Rev. 64) 3 pages



## APPENDIX A, DEFINITIONS (Rev. 63b) 21 pages

Approved By [signature] (acting) 8/17/93
Nuclear Oversight Manager Date

# COMMONWEALTH EDISON
# QUALITY ASSURANCE MANUAL

This Quality Assurance Manual has been prepared to delineate the requirements governing the Commonwealth Edison Company Quality Assurance Program for nuclear generating stations. Implementation of the program as described provides a degree of quality assurance commensurate with the requirements of ASME Code Section III (Division 1 & 2 for Concrete Containment), the Code of Federal Regulations and the requirements of the Nuclear Regulatory Commission governing design, procurement, construction, testing, operation, refueling, maintenance, repair, modification, and decommissioning of nuclear power generation facilities. The execution of the Quality Assurance Program will assure that the plants are built and operated to the requirements and with the reliability and safety to safeguard the general public and Company employees.

The Vice President and Chief Nuclear Officer has overall responsibility for the Quality Assurance Program. Although specific positions and responsibilities are delineated in Section 1, the achievement of quality is the responsibility of each individual involved in Nuclear Operations.

The scope of this program covers the Quality Assurance Program for the life of all Commonwealth Edison nuclear generating plants except that the design, construction, testing and startup of Dresden, Quad Cities, and Zion was conducted in accordance with the quality assurance plans contained in the Dresden and Quad Cities FSARs and the Zion Quality Assurance Manual.

James J. O'Connor

Chairman and Chief Executive Officer
Commonwealth Edison Company

# 1. POLICY

This section identifies the Commonwealth Edison Company (the Company) organization as it applies to the Quality Assurance Program. This section also defines responsibility and authority for establishing, executing and verifying the implementation of the Quality Assurance Program.

Each Officer, Manager, Superintendent, or Director identified in this Section is responsible for implementing the quality assurance program in their assigned areas. They may delegate the performance of their duties to qualified personnel reporting to them. Although the individuals identified may be responsible for specific attributes, the achievement of quality in the performance of quality related activities is the responsibility of each individual involved in nuclear operations.

The Company may delegate the performance of work to Architect-Engineers, NSSS Suppliers, contractors, consultants or others, but Commonwealth Edison Company retains responsibility. The Nuclear Oversight Manager is responsible for corporate quality assurance policy, on-site quality audits, off-site quality audits, training standards and certification of auditors, and corporate nuclear safety policy. The manager is assigned this responsibility by the Chairman and Chief Executive Officer of the Company. The Nuclear Oversight Manager also verifies the implementation of the quality assurance program for the design, procurement, construction, and operation of the Company's nuclear power facilities. He is independent of production.

Organizational charts, functional descriptions of departmental responsibilities or descriptions of key quality assurance positions document lines of authority and responsibility for the Quality Assurance Program.

In general, the Quality Assurance Program provides that:

a. Activities are verified as being correctly performed.

b. Quality verification activities are performed independent of the individual or group directly responsible for performing the activity.

c. Quality assurance personnel have the responsibility, authority, and organizational freedom to:

1. identify quality problems
2. initiate, recommend, or provide solutions to quality problems through designated channels
3. verify implementation of the solutions
4. assure that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.
5. stop work on an operation or installation when a violation of the applicable QA Program, procedure, specification or drawing is identified.

d. Following a Stop Work, work can resume only after verification of necessary corrective actions to bring the installation or operation into conformance.

e. Only the individual who places a Stop Work or a person of higher authority in his or her organization may release the stop work order. The Nuclear Oversight Manager or his designee must concur with the release.

NOTE: **The use of "he" and its derivatives throughout this document is not gender specific; all such usage refers to specified individuals regardless of gender.**

## 2. RESPONSIBILITIES

This entire section defines responsibilities for Company personnel.

## 3. REQUIREMENTS

### 3.1 Organization

Commonwealth Edison Company is responsible for the assurance of quality in all phases of the design, procurement, construction, modification, testing and operation of the Stations. Management assigns areas of responsibility to Commonwealth Edison organizational elements and individuals. The Company's Quality Assurance Program describes the policy and requirements to carry out this responsibility. This Quality Assurance Program description documents the Program and is approved by the Nuclear Oversight Manager.

### 3.2 Delegation

The Company may delegate certain phases of the work to contractors, Architect-Engineers, or an NSSS Supplier, who act as the Company's agents in the assigned areas. The Company also assigns the authority required to do this, including certification and stamping in accordance with the ASME Code.

The Company delegates these responsibilities in writing. Commonwealth Edison retains responsibility for procurement, design, construction, modifications, and operation of the plant including certification and stamping in accordance with the ASME Code.

### 3.3 Functional Responsibilities

#### 3.3.1 NSSS Supplier

Responsibility for the Nuclear Steam Supply System is delegated to the NSSS Supplier. The NSSS Supplier shall:

a. Provide the mechanical, structural and electrical design of the NSSS plant to the Engineering and Construction Department or the Site Engineering and Construction Department.

b. Review their own designs.

c. Evaluate the Architect-Engineers' designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Establish and maintain procurement control for NSSS components.

f. Furnish technical and quality control assistance for on-site activities relating to the NSSS.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Work in accordance with a Commonwealth Edison accepted quality program.

#### 3.3.2 Architect-Engineers

Responsibility for the design of structures, systems, and components not within the scope of the NSSS supplier may be delegated to an Architect-

Engineering firm. When delegated, the Architect-Engineer shall:

a. Provide the mechanical, structural and electrical design of the plant to the Engineering and Construction Department or the Site Engineering and Construction Department for their scope of responsibility.

b. Review their own designs.

c. Independently evaluate the NSSS supplier's designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Evaluate the NSSS Supplier procurement specifications.

f. Provide specifications for procurement of non-NSSS components and services.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Independently evaluate vendor proposals for equipment and services, designs, vendor and contractor procedures, test reports, and design reports.

j. Perform document distribution when directed.

k. Work in accordance with a Commonwealth Edison accepted quality program.

### 3.3.3 Construction Contractors

The Company hires contractors to supply labor and service for maintenance, mod fication, and new construction. These contractors shall work to a Commonwealth Edison accepted quality program. This program may be the contractor's or the contractor may work in

accordance with the Company's program. These contractors shall document their organization and any delegated responsibilities necessary to establish, execute, and verify the quality program.

### 3.3.4 Non-delegated Functional Requirements

The following description of the Company's non-delegated functional requirements are separated into two sections: establishment and execution of the quality program, and verification that the program has been implemented.

#### 3.3.4.1 Program Establishment and Execution

In order to establish and execute an effective Quality Assurance Program, Commonwealth Edison is organized to provide management services and administrative controls. These controls and services provide for effective management of all aspects of quality related activities. This includes design, procurement, construction and modification, testing, and operations. The Company administers contracts that affect quality.

##### 3.3.4.1.1 Design

Commonwealth Edison has engineering responsibility and design authority, makes final decisions on designs and implements engineering designs. The Company has the responsibility to properly translate the applicable Safety Analysis Report (SAR), regulatory requirements, ASME Code requirements, and design bases into specifications, drawings, procedures and instructions. This is accomplished by qualified personnel performing detailed design activities or reviewing and controlling the design work involving electrical, mechanical, structural and instrumentation and control designs of the NSSS Supplier and Architect-Engineer.

Commonwealth Edison is responsible for design changes.

The Company performs detailed design activities and issues design documents in accordance with approved procedures.

For operating plants, the Company supervises the electrical, mechanical, structural, instrumentation and control and nuclear engineering activities involved in nuclear station modifications and maintains a configuration management program.

In addition, the Site Engineering and Construction (SEC) organization oversees the Site Architect-Engineer field group at those locations where one is established.

Finally, the Company notifies jurisdictional authorities of the location of Code related permanent records.

#### 3.3.4.1.2 Procurement

Commonwealth Edison performs technical evaluations of service contractors for placement on the Company's Quality Approved Bidders List. The Company directly controls procurement of non-NSSS components and services based on specifications prepared by the Company on Architect-Engineers. The Company receives and furnishes necessary storage facilities for designated items.

For operating plants, the Company prepares and processes Safety-Related and Code specifications for the award of service contracts for maintenance or modification work.

#### 3.3.4.1.3 Construction

The Company is responsible for construction quality assurance and manages all site construction activities.

The Company directs and manages contractors performing new station construction and maintenance and modification work at existing plants.

Further, the Company develops craft labor specifications and provides estimating and quality control services as required.

The Nuclear Support Department administers the Quality Control Inspector Qualification and Certification Program. They oversee Q.C. certification programs and direct Inspection Agency inspection and testing activities performed for the Company. They coordinate Non-Destructive Examination certification programs with the System Material Analysis Department.

For new plant construction, the Company has ASME Section III, Division 1 and 2, constructor responsibilities and maintains Level III personnel on staff. These individuals are responsible for personnel development, certification of inspectors and qualification of procedures, as required by rules established in ASME Section III.

Further, the Company is responsible for the Form N-3 Data Report and other Owner N-type Data Reports, including stamping responsibility for ASME Section III, Division 1 and Division 2.

#### 3.3.4.1.4 Operations Program

Commonwealth Edison controls pre-service testing (preoperational and start-up testing) and writes the final draft of pre-service tests.

For operating plants, the Company plans the modification test programs and provides modification test acceptance criteria.

For operations, the program is planned and implemented to provide the Company with confidence that safety related systems, structures and components perform satisfactorily in service.

For new plants, the Company performs mechanical, electrical instrumentation and structural construction tests.

#### 3.3.4.2 Verification

In order to verify and control the effectiveness of the Quality Assurance Program, the Company is organized to provide for audit, surveillance, review, inspection and testing. These verification methods assure that

activities performed are correct for all aspects of quality related activities which include design, procurement, construction and modification, testing, and operations.

If conditions which are adverse to quality and which require prompt action are found by Nuclear Oversight personnel at locations where work subject to this QA program is conducted and required corrective measures cannot be agreed upon, the Nuclear Oversight Manager will be promptly notified. If necessary, the Vice President, Nuclear Oversight and Regulatory Services will assure resolution in accordance with the ASME Code and this Program.

3.3.4.2.1 Design

Commonwealth Edison reviews and accepts the specifications and drawings for electrical, mechanical instrumentation, nuclear and structural material, equipment and erection work, prepared by the Architect-Engineer and NSSS Supplier. The purpose of these reviews is to verify inclusion of inspection, testing and acceptance criteria.

The Company reviews the Architect-Engineer's evaluation of fabricator and erector's detailed designs, drawings and work instructions for reasonableness and completeness.

The Company assures that personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

Commonwealth Edison assures that Architect/Engineers and NSSS Suppliers maintain procedures to assure that their personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

The Company provides qualified personnel to review and approve the resolution of nonconformances relating to electrical, mechanical instrumentation and structural portions of the plant and to evaluate discrepant modification test results for operating plants.

The Company audits the design review system of Architect-Engineers, Nuclear Fuel Vendors and NSSS Suppliers.

#### 3.3.4.2.2 Procurement

Commonwealth Edison analyzes bids to assure that necessary quality requirements are included in purchase orders and contracts. The Company evaluates the NSSS Supplier procurement specifications and audits and inspects the NSSS Supplier's control measures.

Audits of off-site contractors are performed as required to assure quality functions.

At times, the Company may assign an Independent Inspection Agency to work occurring at off-site supplier's plants. Verify that the Company's Quality Assurance and technical requirements are implemented for work occurring at off-site supplier's plants.

#### 3.3.4.2.3 Construction

The Company provides new project construction quality assurance.

Organizational elements are assigned to:

a. Closely monitor the construction quality assurance activities of on-site contractors and others.

b. Independently evaluate site contractor quality assurance programs.

c. Verify that construction activities carried out by site contractors conform to procurement document requirements.

d. Verify conformance and completeness of contractor's installation or erection to specification requirements.

e. Review, comment, and approve on-site contractor quality instructions and procedures.

f. Prepare checklists for witnessing inspection notification points at vendor plants.

g. Inspect and designate status of incoming material at the site.

h. Review inspection procedures.

i. Monitor quality control activities of contractors at the site.

j. Initiate those actions which are required to ensure that the assigned work is completed, in accordance with technical and design requirements.

k. Provide performance assessments of contractor work.

l. Audit and survey the compliance of the contractors to their accepted quality assurance program.

The Company has the functional responsibility to perform inspections of site construction activities but may assign these responsibilities to an Independent Inspection Agency. If assigned, these activities shall include inspection and testing, and to determine and report whether items conform to design, test and specification requirements or to reject unsatisfactory materials, equipment or workmanship.

The Company shall take the necessary steps to assure repair, rework or processing of a nonconformance report based on rejection by an Independent Inspection Agency.

For new project construction only, Nuclear Oversight will establish a site Nuclear Oversight group. They will provide independent verification of the program compliance by audit and surveillance. This group will be established similar to On-Site Quality Verification Departments at operating sites. Sufficient qualified personnel are assigned to this group to assure program compliance but will average from one to twenty. This group may employ an Independent Inspection Agency to provide inspection and testing.

#### 3.3.4.2.4 Pre-Service Testing

During new project construction, the Company assures that an acceptable test program is implemented. Organizational elements are assigned to:

a. Evaluate and independently confirm test results by internal evaluation.

b. Manage and perform tests with technical assistance from the NSSS Supplier or the Architect-Engineer as appropriate.

#### 3.3.4.2.5 Operations Verification

During operations, the Company assures that the Quality Assurance Program described in this document is acceptably established and executed. This is done by assigning organizational elements to:

a. Establish and execute quality procedures to be used by the station staff or those under their direction, for operating, maintenance, modifications, in-service inspection, refueling and stores activities.

b. Assure that such procedures and instructions comply with the policies contained in this Quality Assurance Program.

c. Review and approve Station Procedures and instructions and revisions thereto as provided for in the Technical Specifications.

d. Make temporary changes to station operating procedures which do not change the intent of the original procedures as described by Technical Specifications. These changes are reviewed and approved in the same manner as the original procedure.

## 3.4 DESCRIPTION OF GENERAL RESPONSIBILITIES

The Commonwealth Edison Company organization as related to Quality Assurance is shown in Exhibit 1.

Organizations which will be activated for future nuclear station construction are shown in Exhibit 2.

The Company assigns responsibilities for specific requirements through the Quality Assurance Program Database.

Brief discussions of the duties and responsibilities of those personnel indicated on Exhibit 1 are as follows:

### 3.4.1 Chairman and CEO

The Chairman and Chief Executive Officer (CEO) is responsible for overall corporate policy for quality and safety. The Chairman promulgates corporate policy through a staff which includes:

President
Senior Vice President (Energy Facilities)
Senior Vice President (Commercial Division Operations)

## 1.1 President

The President is responsible for Purchasing, Security, Environmental Affairs, Corporate Counsel, Public Relations and physical plant, other than generating stations. The President fulfills assigned responsibilities through a staff which includes:

Senior Vice President (Corporate Resources)

### 1.1.1 Senior Vice President (Corporate Resources)

The Senior Vice President is responsible for Purchasing, Security, Systems Material Analysis Department, Environmental Services, and buildings except for nuclear facilities. He fulfills these responsibilities through a staff which includes:

Systems Material Analysis Manager
Director, Corporate Security
Manager, Purchasing

#### 1.1.1.1 Systems Material Analysis Manager

The Systems Material Analysis Manager maintains the Company's off-site testing facilities and equipment for chemistry, metallurgy, nondestructive examination, and vibration analysis.

The Manager maintains an SNT-TC-1A qualified and certified Level III NDE person on staff who is responsible for personnel and procedure development and qualification to ASME Code requirements for nondestructive examination. This person may designate deputies for certification of personnel and procedures.

#### 1.1.1.2 Director of Corporate Security

The Director of Corporate Security is responsible for insuring that security programs at the nuclear stations effectively meet all commitments to, and the regulations of, the Nuclear Regulatory Commission.

#### 1.1.1.3 Manager of Purchasing

The Manager of Purchasing purchases non-fuel goods and services to specifications and contract requirement prepared by responsible originating departments.

### 1.2 Senior Vice President (Energy Facilities)

The Senior Vice President (Energy Facilities) provides strategy and policy for energy production in support of corporate needs. He provides resources and support for the operation and maintenance of the stations. He fulfills these responsibilities through a staff which includes:

Vice President and Chief Nuclear Officer
Vice President, Fuels

#### 1.2.1 Vice President and Chief Nuclear Officer

The Vice President and Chief Nuclear Officer provides a single executive focal point for setting policies, objectives and priorities for the Nuclear Operations organization. He brings all resources involved in operations and direct support of operation under a single executive. He has overall responsibility for the Quality Assurance Program. He fulfills these responsibilities through a staff which includes:

Site Vice Presidents (six)
Vice President of Nuclear Operations Support
Nuclear Operations Manager
Nuclear Engineering and Technology Services Manager

#### 1.2.1.1 Site Vice President

Each of the six Site Vice Presidents operates and maintains the station for which he is responsible, including operation, maintenance, modification

and all support functions. He has complete operational and fiscal responsibility for the assigned station.

The Site Vice President is responsible for the Station's compliance with its NRC operating license, government regulations, ASME code requirements and the Company's Quality Assurance Program.

He fulfills these responsibilities through a staff which includes:

Station Manager
Site Engineering and Construction Manager
Support Services Director
Regulatory Assurance Supervisor
Outage Planning Director (where established)

#### 1.2.1.1.1 Station Manager

The Station Manager is responsible for the safe, reliable and efficient day-to-day operation of the station for which he is responsible. He fulfills these responsibilities through a staff which includes:

Operations Manager
Technical Services Superintendent
Maintenance Superintendent
Work Control Superintendent (where established)

The Station Manager supervises the Station's on-site review function as provided in the Administrative Section 6.0 of the Technical Specifications.

During periods when the Station Manager is unavailable, he designates this responsibility to an established alternate who satisfies the ANS 3.1 experience requirements for plant manager.

##### 1.2.1.1.1.1 Operations Manager

The Operations Manager is responsible for the safe, reliable and efficient operations of the station units.

#### 1.2.1.1.1.2 Technical Services Superintendent

The Technical Services Superintendent provides support for plant operations in the areas of technical support, chemistry and health physics.

#### 1.2.1.1.1.3 Maintenance Superintendent

The Maintenance Superintendent manages the day-to-day repair activities for mechanical, electrical and instrumentation equipment. He also supervises the Quality Control activities.

#### 1.2.1.1.1.4 Work Control Superintendent

The Work Control Superintendent plans and oversees the station outages. In this capacity he manages the current outage and plans future outages.

### 1.2.1.1.2 Site Engineering and Construction Manager

The Site Engineering and Construction Manager provides design support engineering, modification engineering, and construction services to the station. He has responsibility and authority for all day-to-day design activities and is responsible for developing design policies and procedures as a member of the Nuclear Engineering Committee (NEC) as well as implementing the design policies and procedures established by the NEC. He maintains plant configuration control. He provides engineering and construction support to the Work Control Superintendent. He fulfills these responsibilities through a staff which includes:

Station Support Engineering Supervisor
Modification Design Supervisor
Site Construction Superintendent
Modifications Administrator (where established)

#### 1.2.1.1.2.1 Station Support Engineering Supervisor

The Station Support Engineering Supervisor provides design support to Operations, Maintenance, and Systems Engineering. He maintains design cognizance in order to provide support for design changes, regulatory responses, and in order to initiate the design change process.

#### 1.2.1.1.2.2 Modification Design Supervisor

The Modification Design Supervisor provides detailed design engineering and implementation of modifications. He oversees architect/engineer activities and is responsible for coordination of design with other plants.

#### 1.2.1.1.2.3 Site Construction Superintendent

The Site Construction Superintendent directs site contractors and contract management. He provides contracted craft labor and contractor administration to Maintenance when requested.

#### 1.2.1.1.2.4 Modifications Administrator

The Modifications Administrator provides support for scheduling and tracking modification activities and contracts for A/E modification services.

### 1.2.1.1.3 Support Services Director

The Support Services Director provides Training, Materials Management, MIS Services, Security Services, and Office Support to all organizations on site. He fulfills these responsibilities through a staff which includes:

Materials Management Supervisor
Training Supervisor

#### 1.2.1.1.3.1 Materials Management Supervisor

The Materials Management Supervisor coordinates parts requirements, specifies and evaluates parts, procures all materials for the site, ships and receives that material and controls the on-site inventory.

#### 1.2.1.1.3.2 Training Supervisor

The Training Supervisor provides training for all site personnel as required.

#### 1.2.1.1.4 Regulatory Assurance Supervisor

The Regulatory Assurance Supervisor is the station's administrative support for regulatory matters. He assists the Site Vice President in assessing the station's regulatory performance. He assists the station in dealing with regulatory agencies and Nuclear Regulatory Services.

### 1.2.1.2 Vice President of Nuclear Operations Support

The Vice President of Nuclear Operations Support is the principal advisor on regulatory and quality assurance matters and requirements. His departments provide nuclear oversight activities and interactions with the NRC at the corporate level. He is responsible for providing reports to management concerning the status as determined by this oversight. He fulfills these responsibilities through a staff which includes:

Nuclear Regulatory Services Manager
Nuclear Oversight Manager
Nuclear Support Manager
Performance Monitoring & Improvement Manager

#### 1.2.1.2.1 Nuclear Regulatory Services Manager

The Nuclear Regulatory Services Manager is the administrative liaison between the Company and regulatory bodies. He coordinates division-wide programs that support licensing or regulatory assurance initiatives, helps in developing positions and coordinates responses to regulatory inquiries and notifications. He fulfills these responsibilities through a staff which includes:

Licensing Operations Director
Regulatory Performance Director
Emergency Preparedness and State Programs Director
Director of Strategic Licensing Policies and Issues
ICC Regulatory Services Director

#### 1.2.1.2.1.1 Licensing Operations Director

The Licensing Operations Director is the liaison between the Company and the NRC staff. He is concerned with the licensing process and the materials issued by the NRC that affect all plants.

#### 1.2.1.2.1.2 Regulatory Performance Director

The Regulatory Performance Director is the liaison between the Company and the NRC Region III Staff. He is concerned with inspections, SALP and Licensee Performance.

#### 1.2.1.2.1.3 Emergency Preparedness and State Programs Director

The Emergency Preparedness and State Programs Director maintains the Company's readiness to respond to certain emergencies at the nuclear plants. He maintains the Emergency Plan and coordinates training to support the plan.

#### 1.2.1.2.1.4 Director of Strategic Licensing Policies and Issues

The Director of Strategic Licensing Policies and Issues develops and oversees implementation of CECo's policy on generic and strategic licensing issues.

#### 1.2.1.2.1.5 ICC Regulatory Services Director

The ICC Regulatory Services Director prepares and responds to all ICC Regulatory Examinations of the Nuclear Operations Division. He supports the Company's Litigation Activities concerning Nuclear Operations.

#### 1.2.1.2.2 Nuclear Oversight Manager

The Nuclear Oversight Manager manages the Quality Assurance Program and the Safety Review. He reports through the Vice President of Nuclear Operations Support to the Vice President and Chief Nuclear Officer and is independent of Nuclear Operations. The Manager must have at least four years experience in the field of quality assurance, or an equivalent number of years of nuclear power plant experience in a supervisory position or a

combination of the two. The Manager shall have at least a baccalaureate degree in Engineering or related science. The Manager may have equivalent educational qualifications in accordance with paragraph 4.1 (items a-j) of ANSI/ANS 3.1. He develops, maintains, and interprets the Company's Quality Assurance policies, procedures, and implementing directives. He conducts audits of the Company organizations responsible for nuclear functions to verify that the Quality Assurance Program is effectively implemented. The Manager verifies conformance through the Director of On-Site Quality Verification and the Off-Site Quality Verification Director and their staffs. He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified. He fulfills these responsibilities
through a staff which includes:

Director of On-Site Quality Verification
Director of Safety Review
Off-Site Quality Verification Director
Quality Assurance Policy Director

#### 1.2.1.2.2.1 Director of On-Site Quality Verification

The Director of On-Site Quality Verification provides on-site assessment of station line and support activities to ensure compliance with Quality Assurance and Nuclear Safety Requirements. He fulfills this responsibility through a staff which includes:

Independent Safety Engineering Group Superintendent
Quality Assurance Superintendent
Site Quality Verification Superintendents

The Director of On-Site Quality Verification and staff have direct access to the Site Vice President for Quality Assurance and Nuclear Safety matters. The Director has the authority and responsibility to stop work when a violation of the Quality Assurance Program or Nuclear Safety issue is identified. The Director monitors the day-to-day station activities involving operating, modifications, maintenance, in-service inspection, refueling and stores through on-site audits, field monitoring, and safety evaluations.

#### 1.2.1.2.2.2 Off-Site Quality Verification Director

The Off-Site Quality Verification Director and his staff audit internal and external organizations as required by the Quality Assurance Program. He verifies that submitted vendors quality assurance programs comply with Company requirements. He reviews procurement documentation to assure compliance with the Quality Assurance Program. He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified.

#### 1.2.1.2.2.3 Director of Safety Review

The Director of Safety Review and his staff provide an independent safety review function for station activities on a routine basis. He is the contact point for industry operating experience and lessons learned information and analysis.

#### 1.2.1.2.2.4 Quality Assurance Policy Director

The Quality Assurance Policy Director establishes, maintains and interprets Company Quality Assurance Policy. He provides training to the Company on Quality Assurance subjects. He and his staff control and maintain the Quality Assurance Program database.

#### 1.2.1.2.3 Nuclear Support Manager

The Nuclear Support Manager provides support to the stations in the areas of Maintenance and Quality Control, Training, Chemistry, Health Physics, Operations, Outages and Technical Support. He and his staff provide an off-site point of contact for Station Quality Control if off-site assistance is necessary for quality related matters. The Manager maintains an appointed Chief Level III Certifying Authority on staff who is responsible for qualification and certification of NQA-1 Inspection and test personnel. This person may designate deputies for certification of personnel.

#### 1.2.1.2.4 Performance Monitoring and Improvement Manager

The Performance Monitoring and Improvement Manager provides a common resource to the Site Vice Presidents for improvement of performance. He serves as the contact point for INPO and as the coordinating point for performance improvement within the Nuclear Operations Department.

#### 1.2.1.3 Nuclear Engineering and Technology Services Manager

The Nuclear Engineering and Technology Services Manager is the Chairman of the Nuclear Engineering Committee (NEC) which is comprised of himself and the six Site Engineering and Construction Managers. The NEC has the responsibility to establish policies and procedures to ensure that design activities are conducted in compliance with regulations and the ASME Code in a manner that supports safe and reliable operation. The Nuclear Engineering and Technology Services Manager provides engineering and construction support to the nuclear stations. He is responsible for the configuration management control programs. He provides generic programs for technical and licensing issues. He provides the design for nuclear fuel and certain in-core components. The manager advises the Chief Nuclear Officer on priorities for engineering and construction activities at the six stations. He manages the centralized stores facilities and services for the Nuclear Operations Division. The Manager is the designated holder of the Company's N-stamps. He notifies the Illinois Department of Nuclear Safety (the jurisdiction) of the location of required Code records. The Manager maintains an appointed Level III Concrete Inspection Engineer on staff responsible for the qualification and certification of concrete inspection and testing personnel. He fulfills these responsibilities through a staff which includes:

Nuclear Fuel Services Manager
Electrical, Instrumentation and Control Design Supervisor
Engineering Performance and Improvement Director
Mechanical Structural Design Supervisor
PRA and Reliability Engineering Supervisor
Regulatory Assurance Supervisor
Parts Stores Supervisor
Nuclear Construction Supervisor

#### 1.2.1.3.1 Nuclear Fuel Services Manager

The Nuclear Fuel Services Manager is responsible for the design and monitoring of nuclear fuel. He monitors fuel reliability, provides design for reload licensing, provides the safety analysis for each reload, and provides support for reactor operation.

#### 1.2.1.4 Nuclear Operations Manager

The Nuclear Operations Manager is responsible for implementation of policy and decisions within the Nuclear Operations Organization. He is responsible for planning and Chief Nuclear Officer policy statements, procedures and instructions. The manager is responsible for all internal and external Chief Nuclear Officer communications. He is the liaison for management training in the Nuclear Operations Organization.

### 1.2.2 Vice President, Fuels

The Vice President, Fuels procures nuclear fuel and reprocessing to specifications furnished by the Nuclear Fuel Services Department.

## 1.3 Senior Vice President (Commercial Division Operations)

The Senior Vice President (Commercial Division Operations) is responsible for the transmission and distribution of electricity to the customers and all support activities associated with it.

Vice President, Transmission and Distribution Operations

### 1.3.1 Vice President, Transmission and Distribution Operations

The Vice President, Transmission and Distribution Operations is responsible for the care and maintenance of the Transmission and Distribution Systems.

T&D Operational Analysis Department Manager

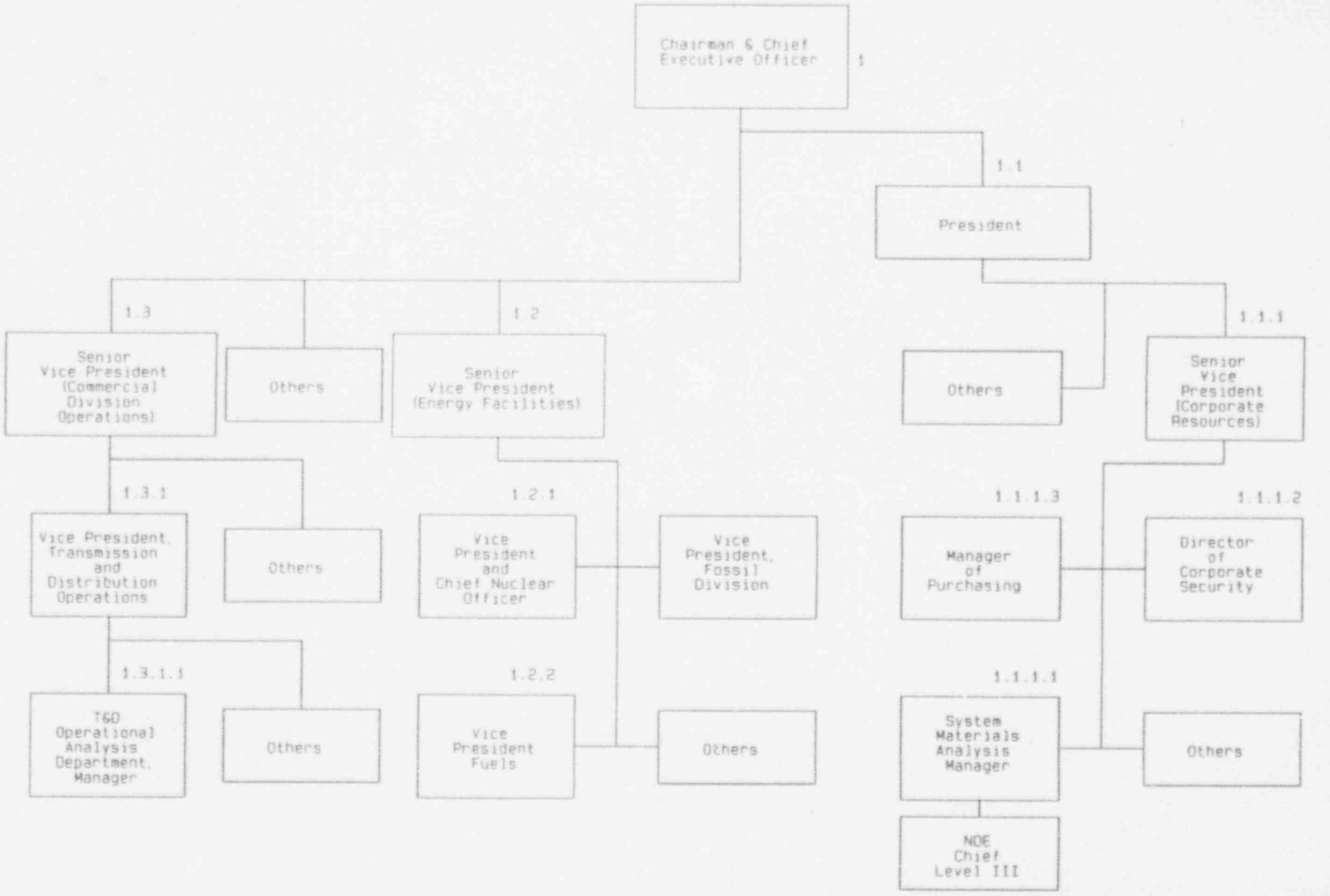
#### 1.3.1.1 T&D Operational Analysis Department Manager

The T&D Operational Analysis Department Manager provides specialized field testing services through technical specialists. He provides calibration services traceable to National Standards for measuring and testing equipment. The Manager retains supporting Quality Assurance documentation. The Manager maintains the Company's electrical testing facilities and equipment required to fulfill assigned responsibilities. His staff reviews design specifications to verify the inclusion of adequate electrical testing requirements. Also, the Manager is responsible for inspection and proof testing of electrical generation, transmission and distribution equipment. During new projects construction, the Manager directs field engineers who conduct electrical construction tests and participate in preoperational and start-up testing.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI/ASME NQA-1
- ASME SEC III NCA 4000
- ANSI N45.2.1
- ANSI N45.2.2
- ANSI N45.2.3
- ANSI N45.2.4
- ANSI N45.2.5
- ANSI N45.2.8
- ANSI N45.2.9
- ANSI N45.2.15
- ANSI N45.2.20

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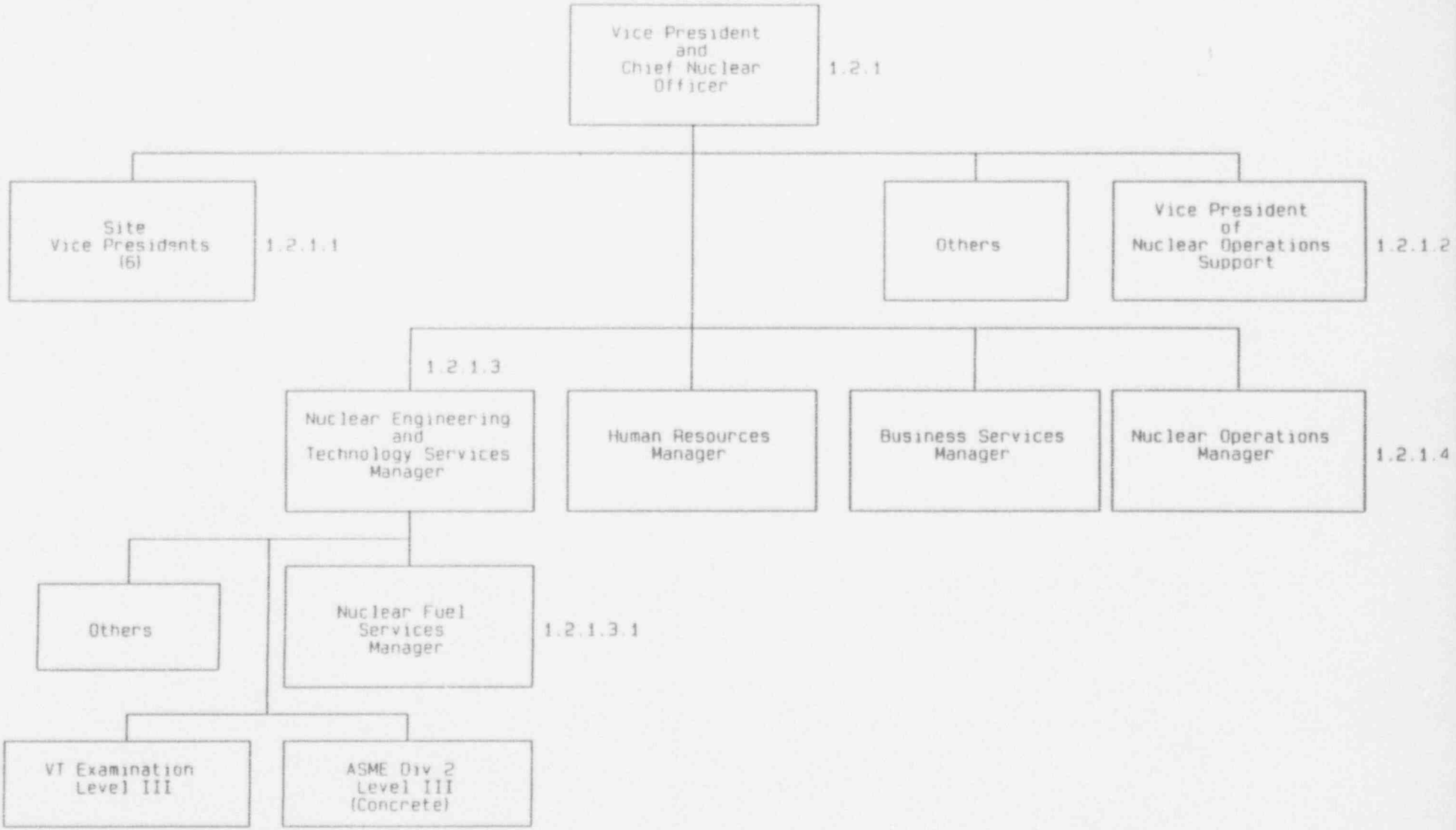
Page 1 of 4

REVISION 64

8/17/93

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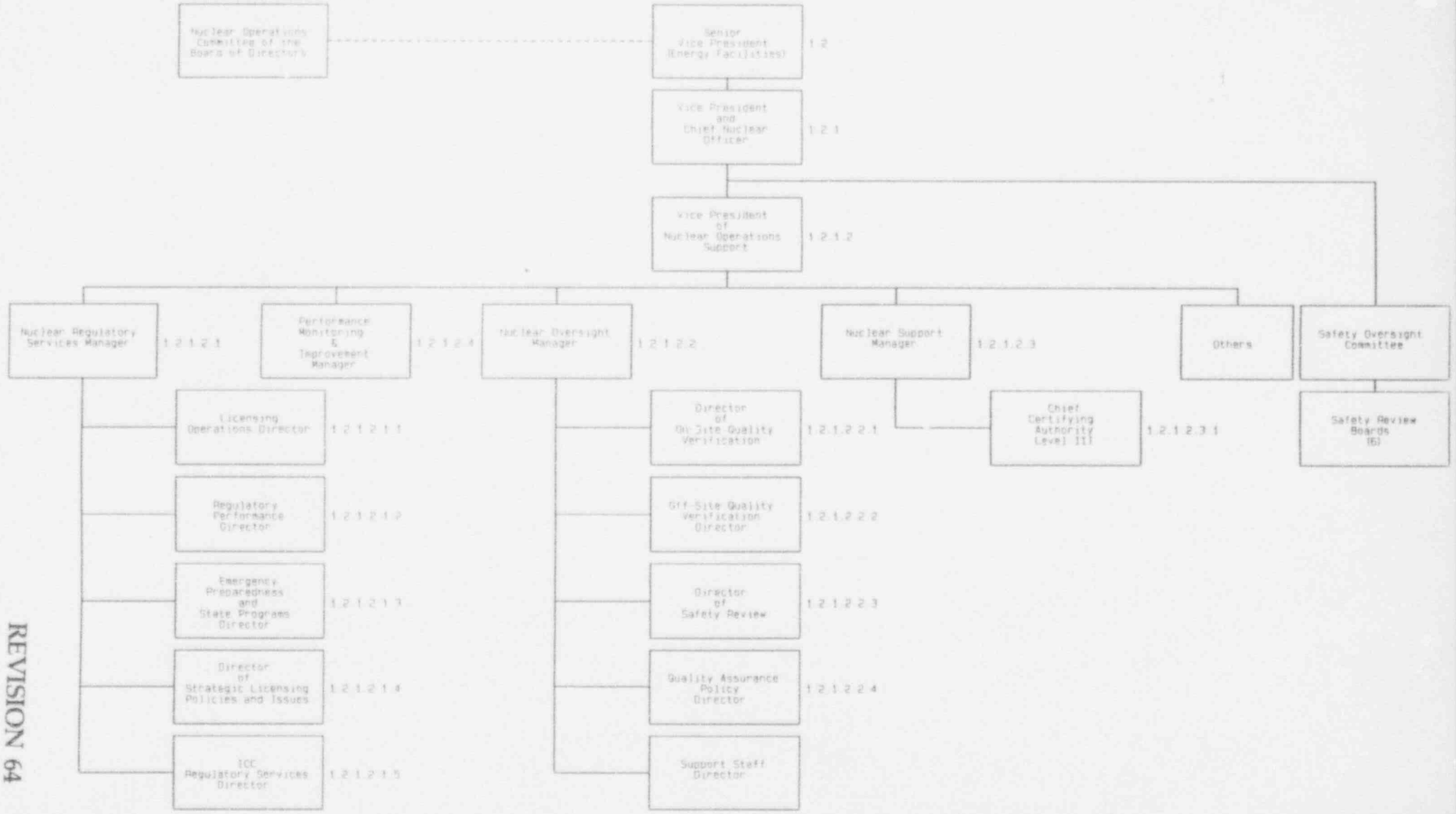
Page 2 of 4




REVISION 64

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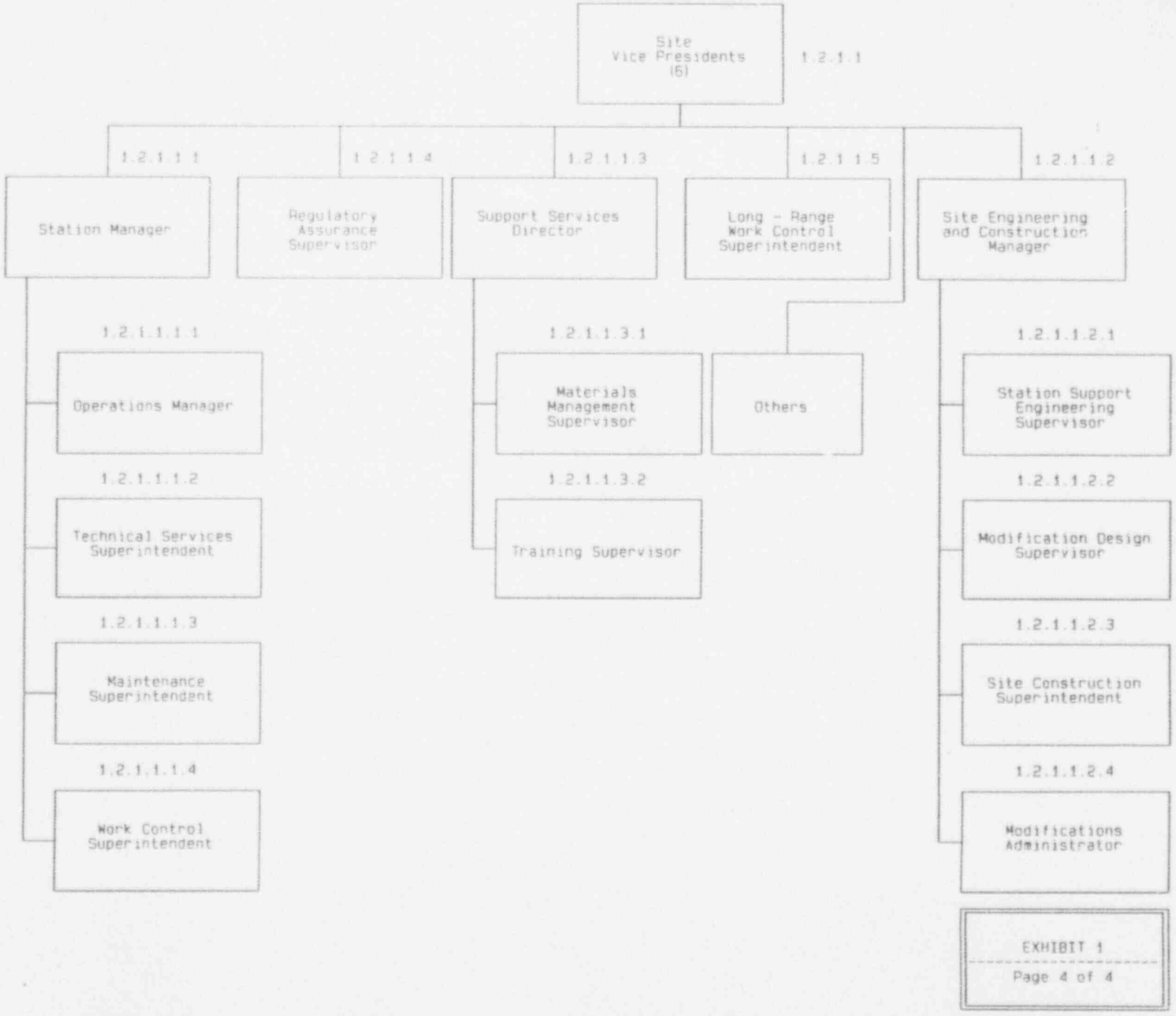
Page 3 of 4

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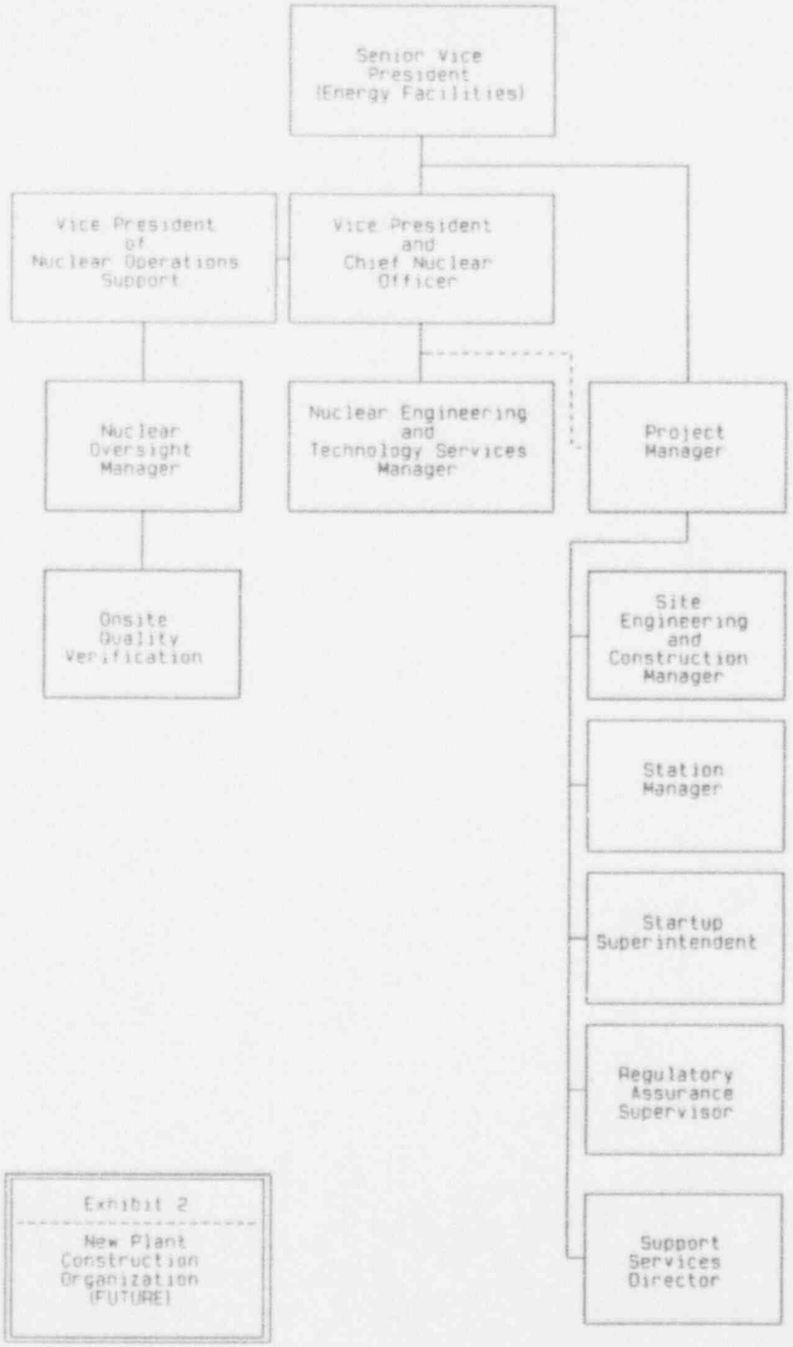



Exhibit 2

New Plant Construction Organization (FUTURE)

# 1. POLICY

It is the policy of the Company to have a Quality Assurance Program that:

a. Complies with ASME Code, Federal Regulations, and other requirements.

b. Defines and documents the requirements and commitments that, when implemented, protect the health and safety of the public and our workers.

c. Serves to protect the interests of the Company.

# 2. RESPONSIBILITIES

All departments involved in the production of nuclear power are governed by this program and are responsible for carrying out the requirements of this section. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
h. Performance Monitoring and Support Department
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department

# 3. REQUIREMENTS

## 3.1 General

Either regulation or the Company, independent of regulations, requires the activities of the Quality Assurance Program. As such, this program meets the intent of the word "shall" as used in regulations and ANSI and ASME documents.

This program applies without limitation to safety related or ASME Code structures, systems, components, and activities. It also applies as described in Section 19 to regulatory related structures, systems, components and activities to a degree consistent with their importance to safety.

This Quality Assurance Program is in effect during all phases of the design, fabrication, erection, testing, operation and decommissioning of the Company's nuclear power plants. "Operation" includes operation, maintenance, repair, modification, refueling, and in-service inspection.

The Quality Assurance Program takes into account the need for special controls, processes, test equipment, tools, and skills necessary to attain the required quality and the need for the verification of quality by inspection and test.

This Quality Assurance Program complies with the quality requirements of:

a. 10CFR50

1. paragraph 55a
2. paragraph 55(e)
3. paragraph 59
4. Appendix A
5. Appendix B
6. Appendix R

b. 10CFR21
c. 10CFR71 Subpart H
d. ASME Boiler and Pressure Vessel Code (CODE) Section III (NCA 4000), Division 1 and Division 2, 1992
e. ASME Code Section XI, 1992
f. ANSI/ANS 3.2, 1988
g. ANSI/ASME NQA-1, 1989 (1a, 1b)
h. ANSI/ASME NQA-2, 1989
i. ANSI/ANS 3.1, 1981

This Quality Assurance Program complies with the programmatic quality requirements of the following standards. Specific work practices and acceptance criteria are reflected in implementing procedures.

j. ANSI N101.4, 1972
k. AWS D1.1-80
l. IEEE Standard 323, 1974

Because of compliance with the above list of standards, this Quality Assurance Program also complies with the regulatory positions of the following Regulatory Guides:

a. 1.26 Rev 3
b. 1.28 Rev 3
c. 1.29 Rev 3
d. 1.33 Rev 2
e. 1.54 (6/73)
f. 1.68 Rev 2
g. 1.143 Rev 1
h. 4.15 Rev 1

ANSI/ASME NQA-1, 1983 and ANSI/ASME NQA-2, 1986 were written to replace ANSI N45.2 and selected daughter standards. Among these the Company had previously been committed to:

a. ANSI N45.2.1, (1973)
b. ANSI N45.2.2, (1972)
c. ANSI N45.2.3, (1973)
d. ANSI N45.2.4, (1974) (IEEE STD 336)
e. ANSI/ASME N45.2.5, (1978)
f. ANSI N45.2.8, (1975)
g. ANSI N45.2.9, (1975)
h. ANSI N45.2.11, (1974)
i. ANSI N45.2.13, (1976)

Because this program complies with NQA-1 and the programmatic requirements of NQA-2, the intent of the following Regulatory Guides is also met:

a. 1.30 Rev 0
b. 1.37 Rev 0
c. 1.38 Rev 2
d. 1.39 Rev 2
e. 1.58 Rev 1
f. 1.64 Rev 2
g. 1.74 (2/74)
h. 1.88 Rev 2
i. 1.94 Rev 1
j. 1.116 Rev 0
k. 1.123 Rev 1
l. 1.144 (9/80)
m. 1.146 (8/78)

The Company's Nuclear Units have differing effective Operating License dates. Each plant's SAR and/or Technical Specifications documents the extent of commitments to technical requirements of Regulatory Guides, Safety Guides and/or ANSI Standards. However, this quality assurance program applies to all operations and includes those quality requirements contained in the documents listed in this section.

Also, the Company requires that each of its vendors maintain a quality assurance program which satisfies the applicable portions of:

a. ANSI/ASME NQA-1 and ANSI N45.2 Standards not covered by ANSI/ASME NQA-1 or the ANSI/ASME N45.2 series of standards for previously accepted, non-ASME quality programs.

b. ANSI/ASME N18.7 Standards

c. ANSI/ASME N626.3, 1988, for firms supplying ASME Code design services.

### 3.2 Planning

#### 3.2.1 General

All quality activities are planned to achieve their objectives. Such planning includes review of relevant requirements. Planning establishes the systematic, sequential progression of actions to meet the defined requirements.

The Company documents these plans in appropriate communications, approvals, instructions, and procedures.

#### 3.2.2 Controlled Conditions

Activities described in this program are accomplished under controlled conditions. Controlled conditions include appropriate equipment, qualified personnel, suitable environment, and use of appropriate procedures. Other sections of this program describe these controlled conditions.

#### 3.2.3 Program Planning

An Audit Program will be planned and conducted in accordance with Section 18 of this program.

A Design Program will be planned and conducted in accordance with Section 3 of this program.

A Procurement Program will be planned and conducted in accordance with Sections 4, 7, 8, and 13 of this program.

### 3.3 Program Description

The Company's total program for providing administrative controls and quality assurance is incorporated in many diverse documents. Exhibit 1 shows the relationship among the most important classes of these documents for the Quality Assurance Program. This document is the QA Program and serves as the company policy directive for Nuclear Quality Assurance. Nuclear Operating Policies may provide implementation of this program. At the interdepartmental level, the Special Process Procedure Manual and the QA Directives describe interdepartmental requirements to implement the QA Program. Nuclear Operating Directives may also provide implementation of the QA Program at this level. At the intra-departmental level, implementing procedures are written to the extent necessary to assure consistent results by all departments which implement the Policy and the QA Program. Approved procedures and instructions implement the quality requirements. Line, staff, administrative, and quality oversight organizations issue these implementing procedures. All activities affecting quality are described in sufficient detail to assure quality.

The implementation of the QA Program will be tracked by the Quality Assurance Database. In the interim, the Quality Procedures serve as the implementing documents for the Quality Assurance Program. Quality Procedure 2.0 provides a description of the implementation of the program and the relationship between the QA Program and the existing Quality Procedures until the Quality Assurance Database is operative for this function.

The Quality Assurance Program Database summarizes the sources of requirements and the relationship among them and the QA program.

### 3.4 Indoctrination & Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained as necessary to assure achievement and maintenance of suitable proficiency. Training programs are developed to indoctrinate, qualify and/or certify personnel in specific activities in which they will be engaged. These training programs include:

a. Quality Assurance Program

b. Quality principles

c. Company policies

d. Implementing procedures

Training is conducted in a time frame adequate to prepare personnel for their job responsibilities and is an extension of formal education or work experience. Training required for specific qualifications or certifications is conducted and documented in accordance with applicable regulations and requirements including the requirements of NQA-1. Qualification documents specify functions and basis of qualification. Personnel performing or verifying activities affecting quality are tested to determine if established levels of knowledge and proficiency are attained. Proficiency of personnel performing and verifying activities affecting quality is maintained by retraining, reexamining and/or recertifying as determined by management or required by Code.

Training and certification of personnel associated with nondestructive examination are carried out in accordance with the requirements of NQA-1 and ASME Section III, NX-5520. A Level III certified person administers all Code examination activities.

Training and certification of personnel associated with concrete containment inspections is in accordance with Appendix VII of ASME Section III, Division 2. The period of qualification for concrete inspectors is three years.

Vendor personnel engaged in inspection, examination and testing activities will be trained, qualified and certified to perform their specific activity under the above requirements.

### 3.5 Program Review

The Company regularly reviews the status and adequacy of the Quality Assurance Program. Reports to management described in Sections 1 and 18 of this Program fulfill this requirement. Vendors are required to perform regular reviews of the status and adequacy of their quality assurance programs. The Nuclear Oversight Department defines and measures the overall effectiveness of the Quality Assurance Program.

The independence of the Nuclear Oversight Department is described in Section 1 of this program. Nuclear Oversight uses its own audits and evaluations in determining quality assurance program and corrective action effectiveness as described in Sections 16 and 18 of this program. Independent reviews are described in Section 18 of this program.

### 3.6 Quality Assurance Manual

The Company Quality Assurance Manual consists of this Quality Assurance Program document, and the Quality Assurance Program Database. The Quality Assurance Program Database contains:

a. The Quality Assurance Program

b. The pertinent parts of source documents

c. Cross-references among these elements

d. Cross-references to the responsible departments and implementing procedures.

The Manual is available to Company personnel, NRC personnel, the Authorized Nuclear Inspector, and other regulatory authorities. The

Company submits revisions to the Quality Assurance Program document (as the Topical Report) to the NRC for acceptance as follows:

a. Programmatic changes which reduce commitments must be accepted prior to implementation.

b. Substantive changes (Organizational, operational, etc.) will be submitted within 30 days of effective date.

c. Changes, editorial changes, reassignments which do not reduce commitments may not be submitted at the time of the change, but are submitted at least annually.

The Authorized Nuclear Inspector Supervisor accepts proposed changes before they are put into effect. Changes are distributed.

## 4. REFERENCES

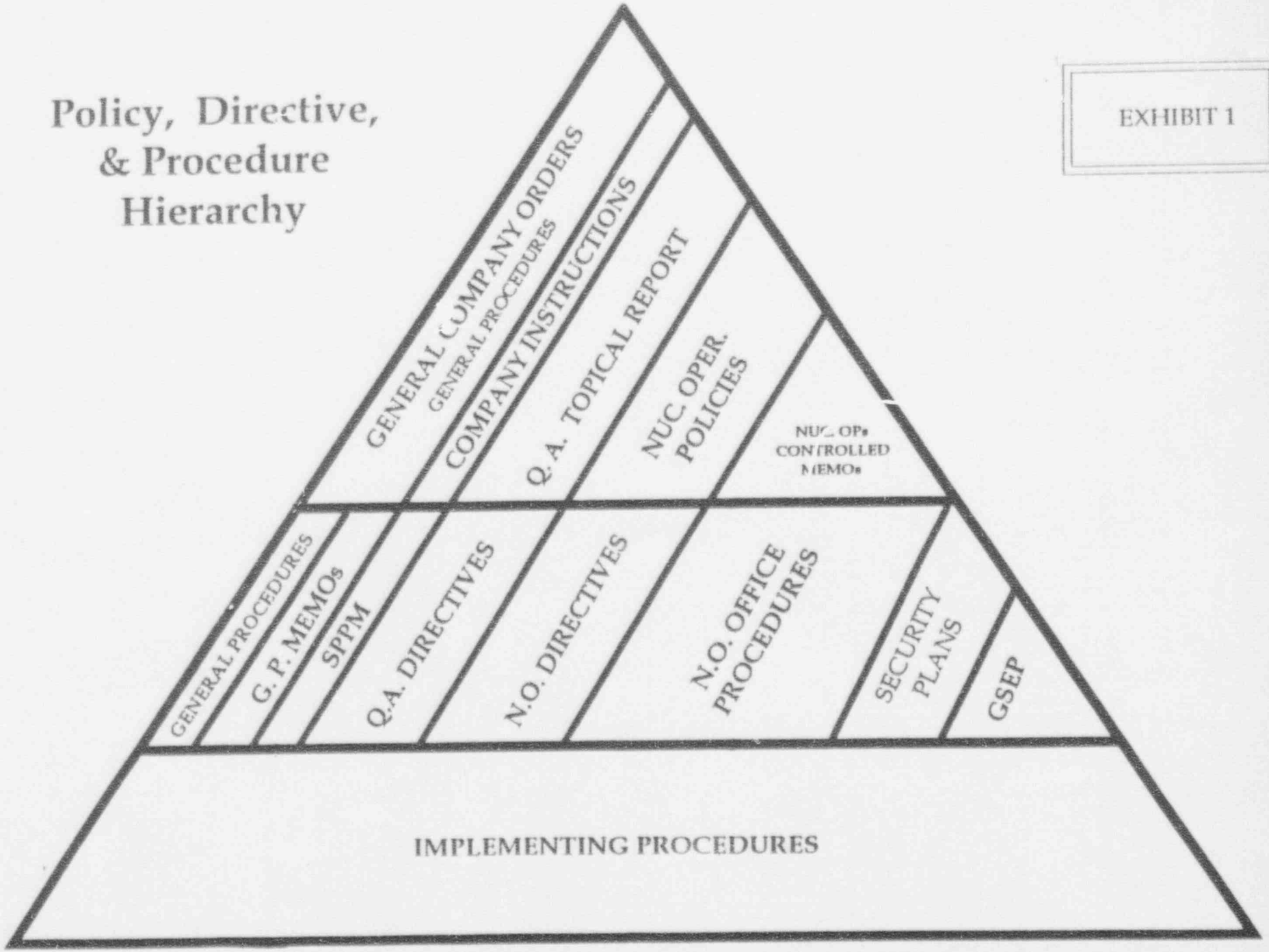
The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in this section. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 APPENDIX B Criteria 2
- ANSI/ASME NQA-1
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI N45.2.11
- ANSI N45.2.9
- ASME Code Section III NCA-4000

- ANSI N45.2.3
- ANSI N 101.4
- LaSalle Station FSAR 7/83
- Byron/Braidwood Stations FSAR 9/79
- ANSI N45.2.4
- IEEE N45.2.1
- ANSI N45.2.1
- ANSI N45 2.5
- ANSI N45.2.13
- ANSI N45 2 8
- Technical Specifications: Byron, Braidwood, Dresden, LaSalle, Quad Cities, Zion Stations

# Policy, Directive, & Procedure Hierarchy

EXHIBIT 1



# 1. POLICY

Design, design interfaces, and design changes shall be defined, controlled and verified.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Engineering and Construction Department and the Site Engineering and Construction Department are responsible for overall design and design control of mechanical, electrical, instrumentation and control, structural and nuclear related systems and components. The Nuclear Fuel Services Department is responsible for reactor core design analysis, core design specifications and design reviews, for nuclear fuel and in-core components. Specific responsibilities for these departments are stated in Section 1.

Design control involves independent review and evaluation of design documents. These design evaluations or reviews are conducted to written procedures and include consideration of quality standards, quality assurance requirements, materials suitability, process suitability, interface control, analytical or testing requirements, design basis, and configuration management.

### 3.2 Design Input

Design inputs, such as design bases, performance requirements, regulatory requirements, codes, and standards shall be identified and documented. Their selection shall be reviewed and approved by the responsible design organization. The design input shall be specified and approved in a timely manner and to the level of detail necessary to provide a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes. Changes from approved design inputs, including the reason for the changes shall be identified, approved, documented, and controlled.

### 3.3 Design Process

The responsible design organization shall prescribe and document the design activities in a timely manner and to the level of detail necessary to permit verification that the design meets requirements. Included in this scope of activities are considerations for field engineering; physics; seismic, stress, thermal, hydraulic, and radiation factors; the Safety Analysis accident scenarios; and accessibility for inservice inspection, maintenance and repairs. Design documents shall be adequate to support facility design, construction, and operation. Selection of the appropriate quality standards shall be documented, reviewed and approved.

Reasons for changes from specified quality standards, shall be identified, documented, approved and controlled. Design methods, materials, parts, equipment, and processes that are essential to the function of the structure, system, or component shall be selected and reviewed for suitability of application. Applicable industry experience, as set forth in reports or other documentation, shall be made available to cognizant

design personnel. The final design output documents and approved changes thereto shall be relatable to the design input by documentation in sufficient detail to permit design verification. The final design shall identify assemblies and/or components that are part of the item being designed. If materials, parts, equipment, or processes are different from the published vendor information, these differences shall be documented.

### 3.4 Design Analyses

Design analyses shall be performed in a planned, controlled, and documented manner. Design analysis documents shall be legible and suitable for reproduction, filing, and retrieval. They shall be sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can independently review and verify the analyses and its results. Calculations shall be identified for retrievability by subject including structure, system, component, originator, reviewer and date or by other unique identifiers.

Computer programs may be utilized for design analysis without individual verification of the program for each application provided:

a. The computer program has been verified to show that it produces correct solutions for the encoded mathematical model within defined limits for each parameter employed; and

b. The encoded mathematical model has been shown to produce a valid solution to the physical problem associated with the particular application.

Computer programs shall be controlled to assure that changes are documented and approved. Verification shall be required for changes to previously verified computer programs including evaluation of the effects of these changes on (a) and (b) above.

Documentation of design analyses shall include:

a. Statement of the objective of the analyses,
b. List of design inputs and their sources,
c. Results of literature searches or other applicable background data,
d. List of assumptions and indication of those that must be verified as the design proceeds,
e. List of any computer calculation and the bases for its use, and
f. Review and approval.

### 3.5 Design Verification

Design adequacy shall be verified by one or more of the following: performance of design reviews, use of alternate calculations, or performance of qualification tests. The design verification method(s) used shall be identified and documented. The results of design verification shall be documented including the identification of the verifier. Design verification shall be performed by competent individual(s) other than those who performed the original design. Cursory supervisory reviews do not satisfy the intent of design verification.

Verification shall be performed in a timely manner. Design verification, for the stage of design activity accomplished, shall be performed prior to release for procurement, manufacture, construction, or release to another organization for use in other design activities provided sufficient data exists. Any unverified portion of the design shall be identified and controlled. In all cases the design verification shall be completed prior to relying upon the component, system, structure, or computer program to perform its function.

### 3.5.1 Extent of Design Verification

The extent of the design verification required is a function of the importance to safety, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously proven designs. Where the design has been subjected to a verification process, the process need not be duplicated for identical designs. For each application the applicability of standardized or previously proven designs for design inputs shall be verified. Known problems affecting the standard or previously proven designs and their effects on other features shall be considered. The original design and associated verification shall be adequately documented and referenced in subsequent applications. Design verification shall be required for changes to previously verified designs. This includes evaluation of the effects of those changes on the overall design and on any affected design analyses.

### 3.5.2 Methods

Acceptable verification methods include one or more of the following: design reviews, alternate calculations, and qualification testing.

#### 3.5.2.1 Design Reviews

Critical design reviews shall provide assurance that the final design is correct and satisfactory.

#### 3.5.2.2 Alternate Calculations

Calculations or analyses shall be made with alternate methods to verify correctness of the original calculations or analyses. The appropriateness of assumptions, input data used, and the computer program or other calculation method used shall be reviewed.

### 3.5.2.3 Qualification Tests

When design adequacy is verified by qualification tests, the tests and test configuration shall be identified. Testing shall demonstrate adequacy of performance under conditions that simulate the most adverse design conditions. Where the test is intended to verify only specific design features, the other features of the design shall be verified by other means. Test results shall be documented and evaluated by the responsible design organization to assure that test requirements have been met. If qualification testing indicates that changes to the item are necessary to obtain acceptable performance, the change shall be documented and verified to assure satisfactory performance.

## 3.6 Change Control

Changes to final designs, field changes, modifications to operating facilities, and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures commensurate with those applied to the original design. These measures shall include assurance that the design analyses for the structure, system, or component are still valid. Changes shall be approved by the same affected groups or organizations which reviewed and approved the original design documents. In the case where the original organization is no longer responsible for design approval, then a new responsible design organization shall be designated. The designated organization shall have demonstrated competence in the specific design area of interest and have an adequate understanding of the requirements and intent of the original design.

When a design change is approved other than by revision to the affected design documents, measures shall be established to incorporate, where appropriate, the change into these documents.

Where a significant design change is necessary because of an incorrect design, the design process and verification procedure shall be reviewed and appropriate action taken.

Plant personnel will be made aware of design changes/modifications which may affect the performance of their duties.

### 3.7 Interface Control

Design interfaces shall be identified and controlled. The company shall coordinate design efforts among the participating organizations. Interface controls shall include the assignment of responsibility and the establishment of procedures among participating design organizations. Controls shall be for the review, approval, release, distribution and revision of documents involving design interfaces.

Design information transmitted across interfaces shall be documented and controlled.

### 3.8 Documentation and Records

Specific requirements are stated in Section 6 and Section 17.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI/ASME NQA-1
- ASME Section III, NCA-4000

# 1. POLICY

This section identifies the requirements for preparation, review and retention of procurement documents.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company establishes procedures for the preparation and review of procurement documents. Procurement documents at all tiers include or reference requirements that are deemed necessary to assure adequate quality. These requirements include reference to 10CFR21 when applicable.

### 3.2 Supplier QA Program Requirements

Procurement Documents require:

a. Each vendor who supplies safety related items or services has and implements a quality assurance program that meets the requirements of 10CFR50 Appendix B.

b. For purchases of ASME Code items or services, the vendor's quality assurance program is consistent with the applicable requirements of the Code.

c. Section 7 contains specific exceptions to these requirements.

### 3.3 Content of Procurement Documents

Procurement documents at all tiers include the following as deemed necessary by the Company.

#### 3.3.1 Scope of Work

Procurement documents describe the scope of the items or services to be furnished by a vendor.

#### 3.3.2 Technical Requirements

The Company specifies technical requirements by reference to specific drawings, specifications, codes, standards, regulations, procedures, or instructions (including revisions thereto) that describes the items or services to be furnished. The procurement documents identify test, inspection and acceptance requirements. The procurement document identifies special instructions and requirements for such activities as designing, identific. tion, fabrication, cleaning, erecting, packaging, handling, shipping, and extended storage.

### 3.3.3 Extension of QA Program to Subtier Suppliers

Procurement documents require the vendors to incorporate quality assurance program requirements in subtier procurement documents.

### 3.3.4 Right of Access for Inspection and Audit

Procurement documents provide for access to the vendor's facilities and records for inspection or audit by the Company or its designated representative.

### 3.3.5 Nonconformances

Procurement documents include requirements for reporting and approving the disposition of nonconformances.

### 3.3.6 Documentation Requirements

Procurement documents identify the documentation requirements including:

a. Required quality assurance records.
b. Those records to be transmitted to the Company.
c. Time of submittal.
d. The retention time and method of disposition of those records the vendor retains.

### 3.3.7 Spare and Replacement Parts

The procurement documents require the identification of appropriate spare and replacement parts or assemblies and the appropriate delineation of the technical and quality assurance related data required for ordering these parts or assemblies.

### 3.4 Procurement Document Review

The Company reviews procurement documents to assure that they include the necessary technical and quality requirements before release for bid and contract award. Records concerning the review and evaluation of procurement documents include, in whole or in part:

a. Minutes of meetings,
b. Comment letters,
c. Design review records,
d. Project quality assurance audits and
e. A copy of the original design document marked with comments or latest revisions.

These records are kept in the Company department files, vendor files, or both locations. Trained personnel who are qualified in QA practices and concepts review procurement documents for adequacy of the referenced quality requirements. They document concurrence in the adequacy of the specified quality requirements.

### 3.5 Control of Procurement Document Changes

Changes to procurement documents are subject to the same review and approval as the original documents. Procurement documents incorporate changes made because of bid evaluations or contract negotiations. The review of these changes and their effects are completed before contract award. The review of changes includes the following:

a. The appropriate requirements specified in paragraph 3.3 of this section.
b. Determination of any additional or modified design criteria.
c. Analysis of exceptions or changes requested by the vendor.
d. Determination of the effects these changes may have on

    1) the intent of the procurement documents or
    2) quality of the procurement documents or
    3) quality of the item or service to be furnished.

Reviews required by this section are done by personnel who have:

a. Access to the pertinent information and
b. Understanding of the requirements and intent of the procurement documents.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Activities governed by the Commonwealth Edison Company Quality Assurance Program shall be performed as directed by documented instructions, procedures, and drawings appropriate for the activity. The requirements for the use of these procedures shall also be prescribed in writing. These instructions, procedures, and drawings shall include acceptance criteria as applicable or appropriate for the activity.

Those participating in any activity shall be aware of and use the proper and current revision of instructions, procedures, drawings and engineering requirements for performing the activity.

# 2. RESPONSIBILITIES

Nuclear Operations is responsible for the preparation and implementation of Nuclear Operations Directives necessary to accomplish the Nuclear Station activities in a uniform and systematic manner.

The Nuclear Stations provide operations procedures and instructions. These procedures will be consistent with NRC license requirements for administering the policies, procedures, and instructions to assure safe operation from the time that the Operating License is issued through the life of the station.

Any Commonwealth Edison Company departmental group involved with nuclear plant design, procurement, maintenance, modification, construction, or operation may propose procedures, as necessary, to meet regulatory, ASME Code or other applicable code requirements. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department

f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
h. Performance Monitoring and Support Department
i. Nuclear Operations Department
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department
p. Vice President, Fuels

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Preparation and Review

Procedures shall be prepared, reviewed, approved, and used as prescribed in writing and shall contain sufficient detail to perform the required actions. Where appropriate, these procedures will include checklists containing the necessary attributes to be observed or measured.

The procedures will be independently reviewed and evaluated by other involved departments with interface responsibilities and the comments forwarded to the issuing department.

### 3.2 General

Operation, maintenance, or modification of equipment shall be preplanned and performed in accordance with written procedures appropriate to the circumstances and which conform to applicable codes, standards, specifications and criteria. When ASME Code work is involved, these documents shall include applicable code requirements and shall be made available to the Authorized Inspector for review and insertion of hold points as applicable.

Temporary procedures may be issued to provide guidance in unusual situations which are not within the scope of the normal procedures. Temporary procedures shall be subject to review and approval, and shall include designation of the time period during which they may be used.

In the event of an emergency not covered by an approved procedure, authorized personnel shall provide appropriate direction to minimize personnel injury and damage to the facility and to protect the health and safety of plant personnel and the general public.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criterion V
- 10CFR50.55
- ASME B&PV Code, Section III, NCA-4000
- ANSI/ASME NQA-1
- ANSI N18.7
- ANS-3.2 1988
- ANSI N45.2
- ANSI/ANS 3.2
- ANSI N45.2.11
- ANSI N45.2.13
- Facility Operating Licenses (Technical Specifications)

# 1. POLICY

The preparation, issue and change of documents, (e.g., instructions, procedures and drawings) shall be controlled by the Company to assure that correct documents are used. For all activities affecting quality these controls will include:

a. A review for adequacy, completeness and correctness;
b. An approval for release by authorized personnel; and
c. The distribution to, and use at, the location where the activity is performed.

# 2. RESPCNSIBILITIES

Any Commonwealth Edison Company organization involved with the preparation, issue, and change of documents affecting quality for nuclear plant activities shall establish procedures necessary to implement the requirements of this section. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
h. Performance Monitoring and Support Department
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department

Individuals participating in any activity shall be made aware of and use proper and current documents.

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Document Preparation, Review, Approval, Issuance and Distribution

Document control measures shall provide for:

a. Identifying individuals or organizations responsible for preparing, reviewing, approving and issuing documents including revisions.

b. Identifying and assuring that proper documents are used in performing this activity.

c. Coordinating and controlling interface documents.

d. Establishing lists of documents required to be controlled by organizations involved with activities affecting quality.

e. Distributing documents approved for issuance in accordance with updated and current distribution lists.

### 3.2 Document Changes

Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless designated to another responsible organization. The reviewing organization shall have access to pertinent background data or information upon which to base their approval. Minor changes to documents, such as editorial corrections, may not require that the revised

documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, procedures will be established to control minor changes.

### 3.3 General

Procedures developed to control documents shall meet the requirements of ANSI N18.7.

Procedures shall be reviewed and approved prior to initial use. The frequency of subsequent reviews shall be specified by the Company and shall be at an interval of 24 months or less unless justification for a longer interval between reviews has been established. Based on this justification, certain classes of procedures may not require a formal review cycle. The reviews will be accomplished by individuals other than the originator, knowledgeable in the area affected by the procedure.

Document controls required by ASME Section III, Division 1 and Division 2 are as stated in the ASME Code Interface.

ASME Code documents will be made available to the authorized Nuclear Inspector.

Document control procedures shall assure that proper documents are accessible and are being used. Obsolete documents are to be recalled or identified.

The scope of the document control program is to be defined. Examples of documents to be controlled include, but are not limited to: as-built drawings, engineering calculations, design specifications, computer codes, purchase orders and related documents, audit and surveillance procedures, operating procedures, emergency operating procedures, technical specifications, nonconformance reports, corrective action reports, work instructions and procedures, calibration procedures, quality verification procedures, inspection and test reports, Safety Analysis Reports, and Topical Reports.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 6
- ANSI/ASME NQA-1
- ASME B & PV Code, Section III, NCA-4000
- ANSI N18.7
- ANSI N45.2
- ANSI N45.2.11
- ANSI/ANS-3.2

# 1. POLICY

This section establishes the quality system elements and related policies that assure the quality of purchased material, equipment and services.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Material Management Department
d. Site Engineering and Construction Department
e. Nuclear Engineering and Technology Services Department
f. Nuclear Oversight Department
g. Purchasing Department
h. Corporate Security Department
i. Systems Materials Analysis Department
j. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Supplier Selection

### 3.1.1 General

The Company establishes measures to assure that purchased material, equipment and services conform to the procurement documents.

### 3.1.2 Company Responsibilities

The Company assigns responsibilities in the supplier selection process to the following organizations:

a. The Nuclear Oversight Department evaluates the Quality Program.

b. The following departments, as appropriate, evaluate vendors technical capabilities:

1) Nuclear Engineering and Technology Services Department
2) Site Engineering and Construction Department
3) Nuclear Stations
4) T&D Operational Analysis Department
5) System Materials Analysis Department

### 3.1.3 Methods

The Company establishes measures for evaluation and selection of procurement sources. These measures include one or more of the following:

a. Evaluation of the supplier's history of providing an identical or similar product that performs satisfactorily in actual use.

b. Vendor's current quality records supported by documented qualitative and quantitative information that can be objectively evaluated.

c. Vendor's technical and quality capability as determined by a direct evaluation of his or her facilities and personnel and the implementation of his or her quality assurance program.

The Company documents and files the results of these measures.

### 3.2 Bid Evaluations

The Company reviews and evaluates bids and awards contracts using written procedures. The results shall be documented. The Company reviews bids to assure that they conform to the procurement document requirements. Individuals or organizations designated to evaluate the following subjects make the bid evaluation as applicable to the type of procurement:

a. Technical considerations.
b. Quality assurance requirements.
c. Research and development effort.
d. Supplier's personnel
e. Supplier's production capability.
f. Supplier's past performance.
g. Alternates.
h. Exceptions.

The Company obtains commitments to resolve unacceptable conditions resulting from the bid evaluation before award of the contract.

### 3.3 Supplier In-Process Control

#### 3.3.1 General

The Company establishes measures to interface with vendors and to verify vendor's performance. The measures include the following:

a. Establishing an understanding between the company and vendor.

b. Requiring the vendor to identify planning techniques and processes to be used in fulfilling procurement document requirements.

c. Reviewing vendor documents that are generated or processed during activities fulfilling procurement requirements.

d. Identifying and processing necessary change information.

e. Establishing method of document information exchange between the Company and vendor.

f. Establishing the extent of source surveillance and inspection activities.

### 3.3.2 In-Process Control and Verification Planning

Depending on the complexity or scope of the item or service, the Company communicates with the supplier to establish:

a. An understanding between the Company and the supplier of the procurement requirements.

b. The intent of the Company in monitoring and evaluating the vendor's performance.

c. The planning, manufacturing techniques, tests, inspections, and processes to be employed by the supplier in meeting procurement requirements.

The Company and supplier mutually agree on notification points, including hold and witness points. They document this agreement. The Company plans and does the verification of vendor's activities to assure conformance to the purchase order requirements with QA organization participation. This verification uses written procedures or checklists. Verification activity plans, as applicable to the method of procurement, provide for:

a. Specifying the characteristics or processes to be witnessed, inspected, or verified, and accepted.

b. The method of surveillance and the extent of documentation required.

c. Those responsible for carrying out these procedures.

d. Audits, surveillances, or inspections that assure that the supplier complies with the quality requirements.

### 3.3.3 Programmatic Verification

The Company or its agents verify the effectiveness of the vendor's quality program by survey, audit or surveillance. The Company does these verifications at intervals consistent with the importance to safety, complexity and quality of the product, or services furnished. The Company witnesses or observes activities when source verification is used. The Company does audits per the requirements established in Section 18. The Company conducts verification activities as early as practicable so that subsequent activities do not prevent disclosure of deficiencies. The Company's verification activities do not relieve the vendor of his or her responsibility for verification on quality achievement.

### 3.3.4 Quality Verification at Source

Qualified personnel do verification activities at the vendor location per approved checklists or procedures. These activities verify conformance to identified technical and quality requirements.

### 3.3.5 In- Process Documentation Verification

The Company establishes methods to control, handle and approve vendor documents. Vendors submit these documents per procurement requirements. The Company uses acceptance criteria for the acquisition, processing, and record evaluation of technical inspection and test data.

### 3.3.6 Documentation of Verification Activities

The Company records activities done to verify vendor conformance to the requirements of procurement documents. The Company documents source surveillances, inspections, audits, receiving inspections, nonconformances, dispositions, waivers and corrective actions concerning vendor activities. The Company evaluates the documentation to determine the vendor's quality assurance program effectiveness.

### 3.3.7 Control of Procurement Changes

The Company documents changes to procurement documents involving technical or quality assurance matters. These changes are subjected to the same review and approval process as the original procurement document.

## 3.4 Acceptance of Purchased Items and Services

### 3.4.1 General

The Company uses approved procedures to accept purchased items and services. The methods used to accept an item or services from a vendor include one or more of the following:

a. Vendor Certificate of Conformance
b. Source verification
c. Receiving Inspection
d. Post installation testing
e. Product testing. (See section 3.4.6 for acceptance of services.)

The vendor identifies procurement requirements that have not been met. The vendor explains the disposition of all nonconformances per Section 15.

### 3.4.2 Acceptance by Receiving Inspection

Acceptance solely by receiving inspection is satisfactory only when the item or services are:

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

b. Adaptable to standard or automated inspection or test of the 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.

(Receipt inspection of an item supplied by a vendor that has been audited or surveyed and has supplied a certificate of conformance or compliance is over and above the meaning of "acceptance solely by receiving inspection.") When procurement documents require documentation to be furnished before receiving inspection, the company reviews such documentation during receiving inspection. During receiving inspection, the Company inspects as necessary to verify conformance to specified requirements, taking into account source verification and audit activities and the demonstrated quality performance of the vendor. The Company does receiving inspections using procedures and inspection instructions to verify, by objective evidence, such features as proper configuration; identification; dimensional, physical and other characteristics; freedom from shipping damage; and cleanliness. The Company coordinates the review of vendor documentation with receiving inspection when procurement documents require such documentation to be furnished prior to receiving inspection.

### 3.4.3 Acceptance by Source Verification

The Company considers acceptance by source verification when the item or service is:

a. Vital to plant safety; or
b. Difficult to verify quality characteristics after delivery; or
c. Complex in design, manufacture and test.

Source verification activities (for receipt inspection) include the following, as applicable:

a. The vendor has submitted documentation as required.

b. Documentation provides verification of approvals, material, applicable inspections and tests.

c. The Company has approved fabrication procedures and processes.

d. The vendor has complied with fabrication procedures and processes.

e. The applicable qualifications, process records and certifications are available.

f. The vendor has inspected, examined and tested components and assemblies as required.

g. Applicable inspection, test and certification records are available.

h. The vendor has dispositioned nonconformances as required.

i. The vendor has cleaned, preserved, packed and identified components and assemblies per specified requirements.

Upon acceptance by source verification, the Company furnishes documented evidence of acceptance to the receiving destination of the item, to the Purchaser, and to the vendor.

### 3.4.4 Acceptance by Certificate of Conformance

Acceptance by this method is satisfactory when the item or service is of simple design and involves standard materials, processes and tests. Such items may be fabricated subject to selected qualification, sample or batch testing to establish or maintain a minimum quality confidence level. When not precluded by other requirements, documentary evidence may take the form of written certificates of conformance that identify the requirements met by the items, provided means are available to verify the validity of such claims. When used, a certificate of conformance meets the following minimum criteria:

a. The certificate identifies the purchased material and purchase order number.

b. The certificate identifies the specific procurement requirements such as codes, standards or other specifications applicable to the purchased item.

c. The procurement requirements identified include any approved changes, waivers, or deviations that apply to the subject item.

d. The certificate identifies any procurement requirements that have not been met with an explanation and the means for resolving the nonconformances.

e. A person who is responsible for the quality function attests to the certificate.

f. Procedures describe the certification system, including the procedures to be followed in filling out a certificate.

g. Audits, surveys, or surveillances of the supplier verify the validity of supplier certificates and the effectiveness of the certification system.

h. The Company conducts these at intervals commensurate with the supplier's past quality performance.

The procurement documents specify supplemental documentation such as material certificates or test reports when necessary.

### 3.4.5 Acceptance by Post-Installation Testing

When post-installation testing is used, the Company and vendor mutually establish post-installation test requirements and acceptance documentation. Acceptance by this method is satisfactory when performed following the accomplishment of at least one preceding method and when:

a. It is difficult to verify the quality characteristics of the item without it being installed and in use; or

b. The item requires an integrated system checkout or test with other items to verify its quality characteristics; or

c. The item cannot prove its ability to perform its intended function except when in use.

### 3.4.6 Acceptance of Services Only

In cases involving procurement of services only, the Company accepts the service by any of the following methods:

a. Technical verification of data produced;

b. Surveillance or audit of the activity;

c. Review of objective evidence for conformance to the procurement document requirements such as certifications, stress reports, etc.

The Company does a receiving inspection for items sent off site for repair, testing, or rework.

### 3.4.7 Acceptance of ASME Code Items

Personnel receiving ASME code items use a checklist. The checklist includes the following:

a. All characteristics that the material specifications require to be reported. (Receiving personnel examine each such characteristic using accepted procedures and record the results.) (Characteristics included on certified material test reports or certificates of compliance need not be duplicated in the checklists.)

b. A record that the certified material test reports and certificates of compliance have been received, reviewed and found acceptable.

c. Proper documentation of the results of the examination or test procedure conducted by the certificate holder when necessary to show the compliance with material specifications or other requirements.

### 3.4.8 Commercial Grade Items

Where the design utilizes commercial grade items, the following requirements are an acceptable alternate to other requirements of this section:

a. An approved design document identifies the commercial grade item. (An alternate commercial grade item may be

applied, provided the cognizant design organization provided verification that the alternate commercial grade item will perform the intended function and will meet design requirements applicable to both the replaced item and its application.)

b. The Company performs source evaluation and selection, where determined necessary based on complexity and importance to safety.

c. The Company identifies commercial grade items in the purchase order by the vendor's published product description.

d. After receipt of a commercial grade item, the Company determines the following:

1) Damage was not sustained during shipment.
2) The item received was the item ordered.
3) Inspection and/or testing is accomplished, as required by the purchaser, to assure conformance with the manufacturer's published requirements.
4) Documentation, as applicable to the item, was received and is acceptable.

### 3.5 Presence of Documentary Evidence

Documented evidence that material or equipment conforms to procurement requirements is present at the site before use or installation. This documentary evidence shall be retained at the nuclear power plant site and shall be sufficient to identify the specific requirements such as codes, standards or specifications met by the purchased material and equipment.

## 3.6 Spares

### 3.6.1 General

Procedures control the procurement, storage and issue of materials and components including spare and replacement parts. Procurement documents for these items identify the appropriate technical and quality related requirements. The Company purchases spare parts and replacement items, equipment and components to original or better design requirements.

### 3.6.2 Equivalent Specifications and Code Requirements

The Company purchases materials and components associated with safety-related structures or systems to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision. When the Company cannot obtain material that has been manufactured and supplied in conformance with ASME Section III, the Company may procure stock material and upgrade it by appropriate tests to ASME Section III. The Company provides certification covering such upgrading (i.e. Providing a Certified Material Test Report) for all operations performed by the Company or their vendors. Where the QA requirements of the original item cannot be determined, qualified individuals conduct an engineering evaluation to establish the requirements and controls. This evaluation insures that interfaces, interchangeability, safety, fit and function are not adversely affected or contrary to applicable regulatory or Code requirements. The evaluators document the results. Where the company procured the original item with no specifically identified quality assurance program requirements, or from an Original Equipment Manufacturer/Supplier (OEM/OES) who no longer is on the Quality Approved Bidders List, identical (like-for-like) items may be similarly procured from the OEM/OES. In such cases, the Company conducts a joint technical engineering and quality assurance documented evaluation to established requirements and controls to assure at least equivalent product performance. The evaluation shall assure that

interfaces, interchangeability, safety, fit and function are not adversely affected or are not contrary to applicable regulatory or Code requirements.

### 3.6.3 Procurement from Other Utilities

Purchases of Safety Related items can be made from other utilities who have had an NRC approved QA Program in effect at the time of their procurement and receipt. Such utility has maintained a Quality System Program for storage, handling and maintenance with documented traceability to the manufacturer of the items. Certificates of Conformance to the above requirements and associated required documentation are provided.

### 3.6.4 Equivalent Production/ Fabrication Requirements

Items associated with safety-related structures or systems are produced or fabricated under requirements at least equivalent to that of the original equipment, or those specified by a properly reviewed and approved revision.

### 3.6.5 Maintenance or Modification

The Company performs maintenance or modifications that may affect function of safety-related structures, systems, or components in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications and inspection requirements.

### 3.6.6 Testing or Design for Equivalence

Replacement items receive adequate testing or are of a design for which experience shows a high probability of satisfactory performance. The Company considers phased replacement to permit in-service performance of the new component to be evaluated. When used, this minimizes the possibility of a hidden deficiency producing a systematic failure.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N45.2.13

# 1. POLICY

This section establishes the requirements for identification and control of materials, parts, and components.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Identification and Traceability

### 3.1.1 General

The Company establishes procedures for the identification and control of materials, parts and components, including partially fabricated assemblies. The Company establishes procedures to control welding and brazing materials. The Company establishes controls to assure that only

correct and accepted items are used or installed. The Company maintains identification on the items or in documents traceable to the items. The Company controls nonconforming items according to Section 15. The Company maintains parts, material, and equipment in storage traceable to quality assurance documents.

### 3.1.2 Traceability

The responsible organizations document and maintain identification and traceability of items (including partially fabricated subassemblies) throughout fabrication, installation and use of the item. Before use or installation of an item, the installer verifies that identification and traceability have been maintained. The Company reestablishes the identification before installation or use, if it has been lost. Audits and surveillances assure that an identification and traceability system are provided and maintained.

### 3.1.3 Identification Methods

Identification is on the item where practicable. Identification is clear, unambiguous and indelible. Identification does not affect the function of the item. If the item cannot be practicably marked, the Company uses records traceable to the item for identification. If physical identification is either impractical or insufficient for proper control, the Company controls an item by physical separation, procedural control or other appropriate means.

### 3.1.4 Transfer of Markings

Before cutting or dividing material, the Company transfers marks or coded markings to the unmarked portions. The Company independently verifies proper identification of each piece.

### 3.1.5 Limited Life Items

The Company identifies and controls items having limited life to preclude use of items whose shelf life or operating life has expired.

### 3.1.6 Stored Items

The Company uses procedures to assure proper control of identification of items in storage.

### 3.1.7 Special Materials

The Company clearly identifies and marks special nuclear materials, radioactive sources and hazardous materials.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI N45.2
- ASME Code, Section III
- ANSI/ASME NQA-1
- ANSI N45.2.4
- ANSI N45.2.8
- ANSI N45.2.13

# 1. POLICY

When the quality of a process cannot be assured through observation of the final product, the process is referred to as a special process. The quality of such processes is assured through reliance on operator skill and in-process control. Examples of special processes include welding, brazing, heat treating, non-destructive examination (NDE), chemical cleaning, coating, and concrete placement. Special processes will be performed in accordance with applicable requirements. These requirements are defined as codes, standards, specifications, or special instructions.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.0 General

The Company department directing the work during construction, repair, replacement, modification, or inservice inspection (ISI) activities will be

responsible for controlling special processes. This includes:

a. Procedure Development and Qualification
b. Procedure Implementation
c. Personnel Qualification
d. Maintenance and Retention of Records

Special process controls will be assured through audit or surveillance activities.

### 3.1 Procedure Qualification and Control

Special processes will be controlled by instructions, procedures, drawings, checklists, travelers, or other appropriate means. Special process controls will specify the preparatory steps, processing details, conditions to be maintained during the process, equipment requirements, inspection and test requirements, acceptance criteria, and records requirements.

Special process procedures will be written and qualified in accordance with applicable requirements.

Special process procedures will be reviewed and approved as follows:

a. Company heat treating, welding, brazing and other non-NDE procedures will be reviewed and approved by the Mechanical and Structural Design ISI/Materials Supervisor.

b. Company NDE, coating, and ASME Code concrete placement procedures will be reviewed and approved by the appropriate Company Level III.

c. Contractor and subcontractor Section III and XI and other ISI-related NDE procedures will be reviewed and approved by the Company NDE Level III.

d. Other contractor and subcontractor special process procedures will be reviewed by the responsible Company engineering organization.

When permitted by applicable requirements, the Company may direct contractors or subcontractors to use Company special process procedures.

The Company will assure that qualification of Company, contractor, and subcontractor ASME Code NDE procedures is verified by the ANI or ANII.

When there is a specific reason to question whether special process procedure requirements are being met, the Company, the ANI, or the ANII may require re-evaluation of the procedure before work may proceed.

### 3.2 Personnel Qualification and Certification

When required, Company, contractor, and subcontractor personnel performing special processes will be trained, tested, qualified, or certified in accordance with a procedure which meets applicable requirements.

When permitted by applicable requirements, the Company may qualify and control contractor and subcontractor personnel.

The Company will assure that qualification of Company, contractor and subcontractor ASME Code NDE personnel is verified by the ANI or ANII.

When there is a specific reason to question the ability of an individual performing special processes, the Company, the ANI, or the ANII may require re-evaluation before that individual will be permitted to resume work.

Individuals failing any retest will be removed from applicable operations pending requalification.

### 3.3 Special Process Records

Special process records will provide evidence that special processes were performed in accordance with approved procedures by qualified personnel. These records will be retained by the Company, or by the contractor or subcontractor as required by procurement documents.

Records will be maintained for currently qualified personnel, processes, and equipment of each special process.

Completion of special process records will be verified by Station Tech Staff, Station Quality Control, or by the responsible Company engineering organization.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 9
- ANSI/ASME NQA-1
- ASME Sec. III Divisions 1 and 2
- ASME Sec. XI

# 1. POLICY

The company will plan and execute an inspection program to verify that activities affecting quality conform to documented requirements. The independent inspections described in this section are not intended to dilute or replace the clear responsibility of the first line supervisors for the quality of work performed under their supervision.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company will establish controls for coordination and execution of inspection plans. Company Quality Control or other qualified organizations are responsible for implementation of established inspection plans. If the inspection plan includes inspections by personnel other than the quality organization, the inspection requirements, personnel qualification criteria, and inspector independence will be accepted by the responsible quality organization prior to implementation.

### 3.2 Inspection Plans

The company will prepare documented inspection plans. Related codes, standards, specifications and design documents will be used to develop the inspection plans. The plans will identify:

a. Activities to be inspected
b. Inspection characteristics
c. Inspection techniques/equipment (including accuracy requirements)
d. Acceptance criteria
e. Responsible organizations
f. Qualification requirements
g. Provisions for the recording of inspection results
h. Provisions for inspection and test status

The inspection plans may be separate documents or an integral part of approved instructions, procedures or drawings.

### 3.3 Inspection Personnel

Inspections will be performed by qualified personnel. Inspections for acceptance will be performed by inspectors with valid certifications. Inspectors will be independent, other than those who performed or directly supervised the activity being inspected. Inspection of operating activities may be conducted by second line supervisory personnel or other qualified personnel not assigned first line supervisory responsibility for the conduct of the work. Operating activities are defined as work functions associated with normal operations of the plant, routine maintenance, and certain technical services routinely assigned to the on-site operating organization. On-the-Job training and team inspections shall be performed under the direct supervision of qualified personnel.

### 3.4 Inspector Qualification

A qualification program will be established and documented to conform to applicable codes, standards, or licensing requirements. Qualifications and certifications will be kept current.

### 3.5 Inspection Process

Inspections will be performed using approved instructions, procedures, process sheets, travelers, or checklists and applicable drawings.

#### 3.5.1 Inspection

Inspections will be performed for each work or operating activity where necessary to verify quality. Where inspection sampling is used to verify acceptability of a group of items the sampling procedure shall be based on recognized standard practices.

#### 3.5.2 Process Monitoring

Process monitoring may be used when inspection of processed material or products is impossible or impractical. When necessary to ensure quality throughout the duration of the process, both inspection and process monitoring will be systematically used to verify conformance to requirements.

#### 3.5.3 Hold Points/ Witness Points

When inspections must be performed before work can continue, hold points will be established in appropriate documents. Consent to waive hold points will be recorded prior to continuation of work. When inspection is desired but not mandatory before work can continue, witness points will be established. Completion of hold and witness points will be documented.

### 3.5.4 Re-inspection

When acceptance criteria are not met, corrected areas will be reinspected. Changes to, or rework of, an item after inspection will require re-inspection of the affected areas.

### 3.5.5 Final Inspection Review

A final evaluation will be performed. Inspection results will be reviewed to confirm that required inspections and quality records have been completed, identified nonconformances have been resolved and the item conforms to specified requirements. Final acceptance of the item will be approved by authorized personnel.

### 3.5.6 Inspection Records

Inspection records will be of sufficient detail to confirm completion and as a minimum identify:

a. Item inspected
b. Date of inspection
c. Inspector/Data recorder
d. Type of observation
e. MT&E used
f. Results or acceptability
g. Reference to action taken in connection with identified nonconformances
h. Authorized individual approving results

When the inspection activity is performed using a separate procedure, the procedure and its revision will be recorded.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 10
- ANSI/ASME NQA-1
- ANSI/ANS 3.2
- ASME SEC. III NCA 4000

# 1. POLICY

This section identifies the requirements for preparation, review, performance and documentation of testing at nuclear stations.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

### 3.1.1 Testing Program

The company's overall testing program falls into two broad categories described as the initial testing phase and the operational testing phase. The initial testing phase ends approximately at the time of fuel load (receipt of operating license). The operational testing phase begins at this time. Tests performed after fuel load and those tests which lead directly to and support fuel load fall in the operational testing phase. In

traditional terms, start-up testing, surveillance testing, and post modification testing fall into the operational testing phase, while vendor testing, construction testing and preoperational testing fall into the material testing phase.

The Company establishes and controls a test program to assure that design and performance criteria have been satisfied. The test program includes, as appropriate, procedures to ensure that structures, systems, subsystems and components will perform in service. See paragraph 3.1.2, Test Procedures, of this Section.

The test program covers all required tests including:

a. tests during design,
b. tests during fabrication,
c. tests during construction activities associated with plant maintenance and modification during the plant operational phase
d. the demonstration of satisfactory performance following plant maintenance and modifications or procedural changes.

The program includes, as applicable:

a. proof tests prior to installation,
b. construction tests,
c. preoperational tests,
d. start-up tests as required for a new plant
e. operational tests,
f. those tests required by plant maintenance or modifications,
g. prototype qualification tests, and
h. production tests.

### 3.1.2 Test Procedures

The program uses written test procedures which include the requirements and acceptance limits from applicable design documents. The Company reviews and approves test procedures. The Company reviews and approves changes to test procedures, including changes which alter test sequence, in a similar manner to the original.

The organization responsible for the design of the item to be tested establishes the test requirements and acceptance criteria. The Company bases test requirements and acceptance criteria upon specified requirements contained in applicable design or other pertinent documents. Test requirements include specific characteristics to be tested. The Company specifies specific test methods when they must be employed. The Company uses written procedures or checklists. It documents the status of equipment both before and after testing.

Test procedures include provisions to assure that:

a. proper calibrated inspection and test instruments are used,
b. equipment to be tested is properly released for testing,
c. inspections and tests are done under suitable environmental conditions, (See paragraph 3.1.2.1, Prerequisites, of this Section)
d. data documentation is in compliance with test procedures and
e. retention control of test data documentation is adequate.

The Company may use appropriate sections of related documents, such as ASTM methods, supplier manuals, equipment maintenance instructions, or approved drawings or travelers with acceptance criteria in lieu of specially prepared written test procedures. Such documents must include adequate instructions to assure the required quality of work.

Test and inspection procedures contain:

a. A description of objectives;

b. responsibilities;

c. test or inspection requirements contained in applicable design documents;

d. acceptance criteria or limits contained in applicable design or other source documents, such as vendor's literature, engineering drawings or plant specifications that will be used to evaluate results;

e. Prerequisites for or checks to be made prior to performing the tests or inspections including any special conditions to be used to simulate normal or abnormal operating conditions;

f. limiting conditions;

g. instructions or check-lists used to verify or document that affected plant systems are arranged in their correct lineup and for restoring the system to the condition consistent with the normal plant operating status;

h. any special equipment or calibrations required to conduct the test or inspection;

i. Test or inspection procedure.

Where tests and inspections are to be witnessed, the procedure identifies hold points or witness points in the testing sequence to permit witnessing. The procedure requires appropriate approval for the test to continue beyond the designated hold point.

### 3.1.2.1 Prerequisites

Prerequisites include the following, as applicable:

a. Calibrated instrumentation, in accordance with Section 12, Control of Measuring and Test Equipment;

b. Appropriate Test Equipment;
c. Trained Personnel;
d. Condition of test equipment and the item to be tested;
e. Suitable environmental conditions; and
f. provisions for data acquisition.

Procedures ensure that prerequisite steps for equipment testing, such as:

a. completion of necessary construction,
b. prior testing,
c. formal release for testing,
d. safety precautions, and
e. measures to preserve equipment status have been or will be performed.

A detailed prescribed physical inspection of equipment components and facilities is performed to ensure readiness for operation. Typical items to be covered include:

a. cleanliness,
b. lubrication,
c. setting of limit switches,
d. calibration of instruments and
e. presence of safety devices.

### 3.1.2.2 Schedule

The Company provides a schedule to assure that all necessary tests are performed and properly evaluated on a timely basis. It schedules testing so that the safety of the plant is never dependent on the performance of an untested system.

### 3.1.3 Test Results

The Company evaluates test results to assure conformance with design and performance requirements.

The Company documents inspection and test results in a test report or data sheet. Each report identifies the following:

a. the item to which it applies,
b. the procedures or instruction followed in performing the task,
c. the identification of the conditions encountered which were not anticipated,
d. Identity of inspector or tester
e. completion date and other significant dates and times
f. location where testing was performed or where test samples were taken.
g. measuring and test equipment used,
h. the acceptability of the test,
i. the deviation of test results from acceptance criteria (nonconformance),
j. the actions taken to correct the deviations noted,
k. as-found condition, and
l. as-left condition.

### 3.1.4 Test Records

Test records include:

a. test procedures,
b. test results,
c. documents that provide acceptance criteria, and
d. data sheets completed during the tests.

## 3.2 Initial Test Program

### 3.2.1 Construction Tests

The company plans, executes, documents, and evaluates tests required to collect data, such as for siting or design input.

Surveillance of construction activities includes tests to verify that items being installed and the installation comply with specified quality and performance requirements. These tests are performed at appropriate points in the construction phase as access permits or when questions arise as to the quality of components or workmanship.

A component test is a functional, operational, or performance test of an individual piece of equipment or unit system under prescribed conditions. Typical parameters to be examined are:

a. direction of rotation,
b. bearing temperatures,
c. vibration,
d. time delays, and
e. ability to operate with remote and local controls.

The Company performs hydrostatic tests to verify conformance to specified requirements the reactor coolant system, including all or parts of connected systems which cannot be isolated from the test pressure. The applicable test requirements are contained in section III of the ASME code.

Where preliminary operation of equipment, during construction, is utilized for a testing function, the Company clearly establishes and documents the purpose of the test, its scope, and results.

Tests are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

Tests and shakedown runs are made on energized systems where necessary to evaluate operations and to properly condition for service (for example, the seating of brushes or bearings, the stabilization of instrumentation and burn-in of electronic devices).

The Company considers providing a run-in period to minimize early failures during operation of the plant, where appropriate.

### 3.2.1.1 Coatings

The company uses the specifications of ANSI N101.4-1972 for test requirements for applied coatings when these tests are required during design, manufacture, and installation.

### 3.2.1.2 Compacted Fill

The Company conducts in-process tests on compacted fill in accordance with ANSI 45.2.5.

### 3.2.1.3 Concrete

The Company conducts in-process tests on concrete and pre-stressing steels in accordance with ANSI 45.2.5.

### 3.2.1.4 Instrumentation

The Company tests instrumentation and control channels to assure that they are properly calibrated. In addition, the Company performs specific tests at critical levels such as "set points" in a manner simulating the approach toward the set point. These calibrations are made with these devices in their normal positions if the calibration is dependent upon location or attitude. The Company makes tests to determine that proper response is obtained over the operating range of the device. It gives particular attention to verifying independence and dependence, as appropriate, of the elements of the systems. The Company tags or labels items after calibration indicating date of calibration and identity of the person that performed the calibration.

The Company prepares and documents installation, inspection and test procedures and work instructions for instrumentation and electrical equipment. These documents are kept current and revised as necessary

to assure that installation, inspections and tests are performed in accordance with latest information. They include as appropriate:

a. installation specifications;
b. inspection and test objectives;
c. precautions to avoid component or system damage during testing or inspection;
d. inspection and test equipment required;
e. sequence of tests (if applicable);
f. sequential actions to be performed;
g. frequency of inspection or test;
h. prerequisites;
i. approvals;
j. data report form;
k. identification of test equipment and date or required recalibration where required for interpretation of test results; and
l. inspection and test acceptance limits.

### 3.2.1.5 Electrical Tests

Electrical tests include:

a. continuity tests, short circuit tests, polarity and rotational tests;
b. control system tests including indicating meters, recorders, transducers, targets and lamps, annunciators and alarms, controls and interlocks;
c. voltage breakdown tests on liquid insulation;
d. overpotential (HIPOT) tests as specified; and
e. insulation resistance measurements as specified.

Overpotential tests conform to the applicable codes and standards. The manufacturer's recommendations are always considered.

### 3.2.1.6 Mechanical Tests

The Company performs mechanical tests to ascertain that electric and/or instrumentation components or systems can withstand system pressure ratings. As a minimum, the Company applies such tests to pressure sensing and transmitting devices operating in steam, hydraulic, and vacuum systems and their hydraulic or pneumatic interconnecting piping or tubing and associated instruments. Pressurized equipment which is a part of electric apparatus such as heat exchangers, circulating systems, actuating systems, and electric and instrumentation containment penetrations are likewise tested if site assembled or fabricated. If equipment is assembled at the construction site, the Company conducts tests after the assembly is complete even though the components may have been previously tested. Manufacturer' tests of fabricated items may be accepted for equipment not disturbed during the construction phase. The Company performs these tests in accordance with the applicable codes and standards.

### 3.2.1.7 Physical and Chemical Tests

Physical and chemical tests, in accordance with the applicable codes, include, as appropriate:

a. chemical analyzing of fluids for oxygen or moisture content and purity
b. radiation sensitivity testing to confirm that radiation sensors and controlling devices are properly functioning.

### 3.2.2 Preoperational Tests

The preoperational testing, when completed, involves the operation of all items in a system to assure that the operation of that system is in accordance with the design criteria and functional requirements. The preoperational phase demonstrates proper coordinated operation of the plant systems, to the extent feasible. The Company demonstrates

required independence and dependence of subsystems. The Company tests to verify that the quality of installed equipment has not deteriorated during the construction phase.

Partial systems or more than one system as defined by the test boundaries may also be tested to assure that operation is in accordance with the design criteria and functional requirements. Where mechanical equipment's and systems' operation must coordinate with non-mechanical equipment or systems, the preoperational test performed includes verifying the compatibility of interfacing equipment and functions.

The Company designs preoperational tests to permit evaluation of system performance. They include, for example:

a. the measurement of flow,
b. the measurement of temperature,
c. the measurement of pressure response time,
d. the measurement of vibration,
e. transfer of the power supply to emergency power and
f. the measurement of the accuracy and response of control devices.

Preoperational tests demonstrate , as nearly as can be practicably simulated, the overall integrated operation of the plant systems at rated conditions, including simultaneous operations of the auxiliary systems. Preoperational tests require variation on control parameters, such as pump stops, and restarts, cycling valves and varying flows so that system performance can be evaluated.

The test procedure identifies and describes any temporary or simulated conditions or equipment. If not previously planned, the Company prepares and issues a documented notice with approval of the

responsible organization stating the substitutions that existed for the test. The Company provides written verification that temporary installations have been satisfactorily replaced by the permanent installations.

Preoperational testing includes, but is not limited to the following:

a. system integrity;
b. in-line instrument installation is consistent with specified flow directions;
c. Sensing lines are phased correctly in in-line elements and sensors;
d. Service requirements for initial operation such as flow alignments, limiting flow orificing and relief devices have been performed;
e. Operation of controls, valves, dampers, operators, and load limiting devices;
f. Rotating equipment (motors, pumps, blowers)-rotation, speed, vibration, noise, and no-load operation;
g. Handling equipment-load tests of cranes, hoists, conveyors, hooks, and handling adapters, and accessories;
h. containment systems;
i. air handling systems;
j. fuel storage and handling systems;
k. Reactor components handling systems;
l. instrument air systems;
m. fluid service systems;
n. waste effluent systems; and
o. auxiliary building systems.

The final preoperational test includes the review of the construction tests made on assemblies and components with particular attention given to those construction tests that demonstrate functional or operational results. When these tests serve as a prerequisite or a part of the final system test, the Company reviews construction activity which may have affected the results.

Where necessary, the Company demonstrates freedom from unwanted or harmful effects of conducted or induced electrical noise.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

Tests, or portions thereof, are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

The Company rectifies the following before final testing:

a. temporary electrical connections,
b. temporary piping sections,
c. abnormal chemical solutions,
d. unspecified setting of devices,
e. the fixing of a moving component, or
f. the effecting of any other abnormality.

Exceptions to this are cases where fuel loading or other critical operations prevent using the complete assembly for the test. In these instances, the Company documents the substitutions that existed for the test.

The Company uses normal system readout devices and installed transducers as far as possible to monitor the operation during the test. It uses special measuring instruments and simulating devices where the installed equipment in not adequate for the purpose of conducting tests.

Test equipment used has adequate capacity and is compatible with system under test so that the results will not be distorted.

### 3.2.2.1 Cold Functional Tests

These tests follow preoperational testing of individual systems including reactor coolant systems. The Company performs this testing to obtain operational data of equipment with maximum allowable simultaneous operation on interfacing systems and equipment and final verification of functional performance of these systems.

The Company tests the required individual systems to demonstrate cold functional operability of individual components, subsystems, and systems, and to demonstrate compatibility with other systems. These tests, where appropriate, demonstrate the following:

a. system pressure drop;
b. flow rate;
c. controls and throttling device settings;
d. function of interlocks, alarms and automatic features;
e. instrument calibration;
f. setting of meter biases;
g. system stability;
h. adequacy of pipe and equipment support settings;
i. heat runs on rotating equipment;
j. adequacy of ventilation, lubrication and cooling systems under sustained operating conditions; and
k. ability to meet water chemistry requirements.

### 3.2.2.2 Hot Functional Tests for PWR Plants Only

Hot functional tests for PWR plants usually follow cold functional tests and simulate plant operating conditions at elevated temperatures and pressures. All auxiliary and support systems exclusive of those required for pre-criticality testing must be available for these tests. If any of these systems are not available, the responsible organization specifically authorizes exclusion of these systems or subsystems from testing and document those exceptions.

These tests include the following as a minimum:

a. system pressure drop;
b. flow rate;
c. controls and throttling device settings;
d. function of interlocks, alarms and automatic features;
e. instrument calibration;
f. setting of meter biases;
g. systems stability;
h. adequacy of pipe and equipment support settings;
i. heat runs on rotating equipment;
j. verification of heat exchanger performance;
k. verification of boron control system performance;
l. thermal insulation effectiveness;
m. set points of temperature, pressure and level devices;
n. system heatup tests;
o. system cooldown tests;
p. hot flow tests;
q. setting protective devices;
r. hot clearances; and
s. vibration measurements of major equipment and piping

### 3.3 Operational Tests Program

#### 3.3.1 Start-up Tests

Start-up tests demonstrate the performance of systems that could not be tested prior to operation and to confirm those physical parameters, hydraulic or mechanical characteristics that need to be known, but which could not be predicted with the required accuracy, and to confirm that plant behavior conforms to design criteria. The Company plans the start-up test program to permit safe fuel loading and start-up; to increase power in safe increments; and to perform major testing at specified power plateaus. If tests require the variation of operating parameters outside of their normal range, the Company prescribes the limits within which such variation is permitted. The scope of the testing demonstrates

insofar as practicable that the plant is capable of withstanding the design transients and accidents.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

### 3.3.2 Surveillance Tests

The Company's test program covers surveillance testing during the operational phase to provide assurances that failures or substandard performance do not remain undetected and that the required reliability of safety related systems is maintained.

### 3.3.3 Maintenance or Major Procedure Change

The Company performs tests following plant modification or significant changes in operating procedures to confirm that the modification or changes produce expected results. These tests also demonstrate that the change does not produce an unsafe operating condition.

## 4.0 REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Measuring and test equipment (M&TE) will be calibrated and controlled to maintain its accuracy.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The T&D Operational Analysis Department is responsible for maintenance and calibration (traceable to National Standards) of Company M&TE except analytical chemistry and radio-chemistry laboratory equipment.

Part or all of this responsibility may be delegated to the Stations.

The Stations are responsible for the control of Station analytical chemistry, radio-chemistry laboratory M&TE, and standard solutions. They are also responsible for the control of the station M&TE program.

The Nuclear Engineering and Technology Services Department is responsible for the establishment of accuracy requirements for M&TE. Excluded are analytical chemistry and radiochemistry M&TE. Normally this will be the manufacturer's published accuracy. If such published accuracy is not required, new accuracy requirements will be established by Nuclear Engineering and Technology Services. The Nuclear Engineering and Technology Services Department is responsible for resolution of technical issues including when certification is required.

### 3.2 Control

A program will specify how M&TE will be stored, handled, and used. As a minimum the following items will be addressed:

a. Environmental restrictions
b. Personnel Qualifications
c. M&TE selection
d. Usage history
e. Certification requirements
f. Status
g. Damage or suspect M&TE
h. Administrative controls
i. Repairs and maintenance
j. Items not requiring certification

### 3.3 Accuracy

M&TE will be calibrated against standards at least four times more accurate than the item being calibrated. Deviation from this standard will be controlled.

The accuracy ratio of M&TE to the plant equipment being calibrated will be determined by an engineering process.

Standards will be calibrated against standards having a greater accuracy. When this is not possible, equal accuracy may be used if it is adequate. Such deviations will be controlled.

### 3.4 Traceability

M&TE will be calibrated against certified standards having valid relationships to nationally recognized standards.

### 3.5 Interval

A calibration interval will be established for all M&TE. The M&TE program will specify how this interval is established. "Upon Request", "Not To Be Calibrated", and "Before and After Use" are acceptable frequencies.

### 3.6 ASME Code

M&TE used in Code applications will meet all requirements of the applicable Code sections.

### 3.7 Certification

Certification of M&TE is required for:

a. calibration of other M&TE
b. verification of design parameters

Certification of M&TE is not required when the measurements do not require specific accuracy.

### 3.8 Corrective Actions

When M&TE is found to be out of tolerance, an evaluation will be made of its previous uses to determine corrective action. Out of tolerance or suspect equipment will be identified and segregated to prevent inadvertent use.

### 3.9 Vendor Control

Vendors supplying certification services will be on the Company Quality Approved Bidders List.

### 3.10 Commercial Devices

Control measures are not required for rulers, tape measures, levels, and other such commercial devices, if such equipment provides adequate accuracy.

### 3.11 Records

M&TE calibration records will contain, as a minimum:

a. Last calibration date
b. Next calibration date
c. Standards used
d. Serial Number
e. Calibration Data
f. As found/As left condition
g. Repairs (If any)
h. Calibration Procedure Used
i. Individual performing calibration
j. Equipment location
k. Out of tolerance notification
l. Established accuracy
m. Results Approval

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 12
- ANSI/ASME NQA-1
- ASME Section III NCA 4000

# 1. POLICY

This section identifies the requirements for material control. This includes handling, storage, shipping, cleaning and preservation of material and equipment.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General Material Control

The Company uses written procedures or instructions to specify special protective conditions per the item's design and procurement requirements necessary to prevent damage or deterioration of materials components, and systems during handling, preservation, storage, and shipping. These procedures include provisions for inspection, examination, testing and documentation. The vendor's Quality Program includes shipping procedures that provide for inspection and control of items leaving the vendor's plant. The Company establishes instructions for marking and labelling to identify, maintain, and preserve an item, including indication of the presence of special environments or the need for special controls. These requirements apply to the storage of chemicals, reagents, lubricants and other consumable materials.

### 3.2 Special Equipment and Environments

When required, the Company:

a. Specifies special equipment (such as containers, shock absorbers and accelerometers).

b. Specifies special protective environments (such as inert gas atmosphere, specific moisture content levels and temperature levels).

c. Provides special equipment and special protective environments.

d. Verifies the maintenance of special equipment and special protective environments.

### 3.3 Classification of Items

The Company classifies each item received into one of four levels established in ANSI N45.2.2. This classification considers the manufacturer's requirements. The Company packages, ships, receives, stores and handles according to the established level or a higher level. When a package or assembly contains items of different levels, the Company classifies it to the highest level designated for any of the items contained.

### 3.4 Cleaning, Shipping, Storage and Preservation

The Company uses written procedures or instructions for cleaning, packaging, shipping, storage and preservation. These procedures specify special protective conditions necessary to prevent damage or deterioration of materials and equipment.

### 3.5 Handling Tools and Equipment

The Company inspects and tests special handling tools and equipment using procedures at specified time intervals to verify adequate maintenance. The Company provides special handling procedures and

instructions for items that are susceptible to handling damage. These procedures delineate acceptable techniques, necessary qualifications and precautions for maintenance and use. Operators of special handling and lifting equipment have experience or are trained in its use.

### 3.6 Additional Requirements

The Company uses written procedures or instructions to specify detailed requirements for the following subjects:

a. Storage records
b. Access to storage areas
c. Housekeeping
d. Fire Protection
e. Removal of items from storage.

The vendors ship special nuclear materials and sources as specified in the NRC license and other regulatory requirements.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50, Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N4.2.2
- ANSI N45.2.4

# 1. POLICY

This section identifies the requirements for tracking the status of inspection and test performed on equipment at nuclear plants.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Corporate Security Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses marking, tags, stamps, routing cards, labels, forms, or other means to identify the operating status of plant equipment. This identification helps avoid inadvertent bypassing of the inspections and tests required prior to its use. The Company provides control procedures which describe the use of such tags, stamps, routing cards, labels, forms, and other methods. The Company specifies the authority for application and removal of tags, markings, labels and stamps.

The Company identifies items that are acceptable or unacceptable for installation by tagging, labeling, color coding, physical separation, or using an inventory system. When tags are used:

a. the stock is made from material which will not deteriorate during storage,

b. the stock used is not deleterious to the item, and

c. tags are securely affixed to the items and displayed in an area that is readily accessible.

The Company indicates the date the item was placed in the acceptable or unacceptable installation status. The program for quality control regulates this activity. The Company conditionally releases items for installation pending subsequent correction of the nonconformance.

The Company maintains records and marks equipment to indicate calibration status. The Company clearly identifies test equipment found to be out of calibration.

The Company clearly identifies and documents all temporary connections, such as jumpers and bypass lines, and temporary set points of control equipment to allow restoration before placing the item in service.

The Company tags critical valves, controls and switches to prevent inadvertent actuation during flushing.

### 3.1.1 Procedures

The Company uses procedures for control of equipment to maintain personnel and reactor safety and to avoid unauthorized operation of equipment. These procedures require control measures such as locking or tagging to secure and identify equipment in a controlled status. The

procedures require independent verifications, where appropriate, to ensure that necessary measures, such as tagging equipment, have been done correctly.

### 3.2 Operating Status

#### 3.2.1 Release for Maintenance

Operating personnel, including a senior reactor operator, as applicable grant permission to release plant systems or equipment for maintenance or surveillance tests. Prior to granting permission, such operating personnel:

a. verify that the equipment or system can be released,

b. determine how long it may be out of service,

c. determine what functional testing or redundant systems are required prior to and during the out-of-service period.

The Company documents such permission. The Company uses independent verification to the extent necessary to ensure that the proper system was removed from service. The Company considers the degraded protection available when one subsystem of a redundant safety system has been removed for maintenance or surveillance testing.

#### 3.2.2 Preparation for Work

After permission has been granted to take the equipment out of service, measures provide for protection of equipment and workers. The Company clearly identifies the status of equipment and systems at any location where the equipment can be operated. The Company enforces strict control measures for such equipment. The operating staff can easily identify equipment which is in other than normal conditions.

In addition to the requirements of the technical specifications conditions to be considered in preparing equipment for maintenance or surveillance testing include, for example:

a. Shutdown margin;
b. method of emergency core cooling;
c. establishment of a path for decay heat removal;
d. temperature and pressure of the system;
e. valves between work and hazardous materials;
f. venting, draining and flushing;
g. entry into closed vessels;
h. hazardous atmospheres and ALARA considerations;
i. handling hazardous materials; and
j. electrical hazards.

When entering a closed system, the Company prevents the entry of extraneous material and removes foreign material before reclosing the system.

Appropriate personnel inform control room supervision of changes in equipment status, including temporary modifications, and the effects of such changes.

### 3.2.3 Temporary Modifications

The Company controls temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings with approved procedures. These procedures include requirements for the period of time for which the temporary modification is in effect. They also include a requirement for:

a. an independent verification by a second person of the proper installation or removal of the temporary modification, or

b. a functional test which conclusively proves the proper installation or removal of the temporary modification.

The Company maintains a log or other documented evidence for the current status of such temporary modifications. The Company reviews temporary modification periodically to assess their continued need and appropriateness.

### 3.2.4 Return to Service

When equipment is ready to be returned to service, operating personnel place the equipment in operation and verify and document its functional acceptability. The Company assures return to normal conditions including:

a. removal of electrical jumpers,

b. removal or signals used during testing,

c. returning valves, breakers, or switches to proper start-up or operating positions, and

d. assuring that all alarms which are indicative of inoperative status are cleared.

A second qualified person verifies proper alignment of equipment unless:

a. all equipment, valves and switches involved in the activity can be proven to be in their correct alignment by functional testing without adversely affecting the safety of the plant, or

b. such verification would result in significant radiation exposure.

The person who performs the independent verifications is qualified to perform such tasks. When placed into service, equipment receives additional surveillance during the run-in period. The on-duty supervisor responsible for the unit formally accepts equipment which is returned to service.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

This section describes the identification, documentation, segregation, and evaluation of non-conforming items.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses written procedures to identify and control items, services or activities that do not conform to requirements. These procedures address:

a. Identification of nonconforming items.
b. Documentation of identified nonconformances.
c. Segregation of nonconforming items.
d. Disposition of nonconforming items.
e. Notification of affected organizations.

Implementation of these procedures prevents the inadvertent use or installation of nonconforming items.

The Company and its vendors establish and document measures for the identification, control and disposition of items and services that do not meet procurement document requirements. These measures provide for:

a. Review of nonconforming items.

b. The vendor submitting nonconformance notice to the Company. These submittals include vendor recommended disposition (i.e. "use-as-is" or "repair") and technical justification. The vendor submits nonconformances to the procurement document requirements or Company approved documents to the Company for approval of the recommended disposition if:

   1) The vendor has violated a technical or material requirement, or

   2) The vendor has violated a requirement in vendor documents, which have been approved by the Company, or

   3) The vendor cannot correct the nonconformance by continuation of the original manufacturing process or by rework, or

   4) the item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired.

c. Company disposition of vendor recommendation.

d. Verification of disposition of nonconformances.

e. Maintenance of records of vendor nonconformances.

### 3.2 Identification

The Company identifies nonconforming items by marking, tagging or other methods which do not adversely affect the end use of the item. The identification is legible and easily recognizable.

### 3.3 Segregation

When practical, the Company segregates nonconforming items by placing them in a hold area until properly dispositioned. When segregation is impractical or impossible due to physical conditions such as size, weight or access limitations, other precautions are employed to preclude inadvertent use of a nonconforming item.

### 3.4 Disposition

#### 3.4.1 Control

The Company uses written procedures to review and accept, reject, repair or rework nonconforming items. The Company controls processing, delivery, installation or use of a nonconforming item pending an evaluation and an approved disposition by authorized personnel. The Company documents ultimate disposition of nonconforming items.

#### 3.4.2 Evaluation

The Company has responsibility for resolution of Company nonconformances.

For items under a contractor's direct control, the Company may delegate to the contractor the authority to perform technical evaluation of nonconformances, if the contractor has an acceptable procedure for

handling nonconforming items. Where the Company delegates such authority, the contractor is responsible for establishing that:

a. all actions fall within the requirements set by the Company,

b. accepted nonconformance meets the design intent,

c. personnel performing the evaluation meet the requirements of Paragraph 3.4.3, and

d. Code items meet the requirements of the Code.

The Company remains responsible for the satisfactory resolution of vendor nonconformances.

When technical evaluation has not been delegated, the Company will make a technical evaluation of all pertinent data relating to the nonconformity, including the cause, where known, and the corrective action either taken or planned to prevent recurrence.

Where ASME Code requirements are involved, the Authorized Nuclear Inspector reviews and accepts or rejects the disposition and justification.

### 3.4.3 Personnel

Personnel having expertise in the pertinent discipline will determine whether a nonconforming item may be accepted "as-is," may be repaired to an acceptable condition, or must be rejected. These personnel have adequate competence and knowledge necessary to make this evaluation and have access to pertinent background information.

### 3.4.4 Documentation

The Company identifies, documents, and retains the disposition (such as use-as-is, reject, repair, or rework) of nonconforming items traceable to each item and technically justifies the disposition.

The Company subjects items which are nonconforming to design requirements and dispositioned "use-as-is" or "repair" to design control measures commensurate with those applied to the original design. The Company technically dispositions and justifies acceptance "as-is," to assure that the final condition of nonconforming items will not adversely affect

a. Code requirements,
b. safety,
c. operability or
d. maintainability

of the items, or of the component or system in which it is installed. The as-built records, if such records are required, reflect the accepted deviation.

If the nonconformance can be corrected after installation, the item may be released for installation on a conditional release basis. The Company documents the authority and technical justification for the conditional release of the item for installation and makes it part of the documentation.

### 3.4.5 Repaired, Reworked, or Scrapped Items

The Company reexamines repaired or reworked items using procedures and the original acceptance criteria unless the disposition has established alternate acceptance criteria.

The Company reinspects items that have been corrected. The area of inspection may be confined to the area of the nonconformance. When it has been determined that the corrected item is satisfactory, the Company changes the status of the item to "acceptable." The Company makes an appropriate entry in the documentation after acceptance is determined.

The Company scraps, discards or transfers to training use a nonconforming item that cannot be corrected or accepted "as-is".

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.4
- IEEE STD 336
- ANSI N45.2.8
- ANSI N45.2.2

# 1. POLICY

This section describes the Company program to identify and correct occurrences adverse to quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Regulatory Assurance Department
c. Site Material Management Department
d. Site Engineering and Construction Department
e. Nuclear Engineering and Technology Services Department
f. Nuclear Oversight Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses a corrective action system to promptly identify and correct items or occurrences which are adverse to quality or might adversely affect the safe operation of a nuclear generating station. Parts or all of this system may be electronically monitored and electronic records may be used as the sole record of such a system. These items or occurrences include failures, malfunctions, deficiencies, deviations, defective material and equipment, nonconformances and programmatic deficiencies.

For the procurement process, the Company uses procedures that include methods for the identification of conditions adverse to quality and methods for timely corrective action. The Company requires individual vendors and their contractors to include corrective action measures in their quality assurance programs.

The Company makes a thorough investigation of occurrences. It identifies corrective action to preclude the recurrence of an event. These events may include reactor trip, failed equipment, personnel error, and procedural infractions. Assigned personnel are responsible for determining the root cause(s) of the event and developing recommendations to preclude recurrence. These personnel report the results of this determination to appropriate station personnel and company management. The report includes a detailed description of the occurrence, the findings of the investigation, and recommended corrective measures. Any required formal reports are filed with the appropriate regulatory agency.

The Company notifies the rest of the nuclear industry of any significant event and its circumstances to help preclude a similar event occurring at another plant.

### 3.2 Significant Conditions

The Company takes measures to assure that the cause of any significant condition adverse to quality is determined and takes corrective action to preclude repetition.

An independent review body reviews violations, deviations and reportable events, that were required to be reported to the NRC in writing within 24 hours, such as:

a. Violations of applicable codes, regulations, orders, technical specifications, license requirements or internal procedures or instructions having safety significance.

b. Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components.

c. Events, as defined in the plant technical specifications.

This independent review includes the review of results of any investigations made and the recommendations resulting from such investigations.

For significant conditions adverse to quality that arise during the procurement process, the Company uses procedures to describe the method used to:

a. Identify and document deviations and nonconformances.

b. Review and evaluate the conditions to determine the cause, extent and measures needed to correct and prevent recurrence.

c. Report the conditions and corrective action to the appropriate levels of management.

d. Implement and maintain required corrective action.

For significant or recurring deficiencies (or errors), the Company follows written procedures to correct the deficiency (or error), determine the cause and make changes in the design process and the quality assurance program to prevent similar types of deficiencies (or errors) from recurring.

### 3.3 Design Errors

The Company detects deficiencies or errors in design or in the design quality assurance program by:

a. Design verification measures.
b. Personnel using the design documents.
c. Audits
d. Tests Conducted
e. Actual failure during operation
f. Other means

When a significant design change is necessary because of an incorrect design, the Company reviews and modifies the design process and verification procedures.

### 3.4 Plant Hardware Malfunctions

The causes of malfunction are promptly determined, evaluated recorded. Experience with the malfunctioning equipment and similar components are reviewed and evaluated to determine whether a replacement component of the same type can be expected to perform the function reliably. If evidence indicates that common components in safety-related systems have performed unsatisfactorily, corrective measures are planned prior to replacement or repair of all such components. Appropriate procedures are revised in a timely manner to prevent recurrence of equipment malfunction or abnormal operation.

### 3.5 Documentation and Reporting

The Company documents the identification of significant conditions adverse to quality, the cause of the condition and the corrective action taken. It reports these items to appropriate levels of management. The report is made immediately if prompt corrective action is required. If the nonconformity is not an indication of a significant failure in any portion of the Quality Assurance Program, the Company does not require reporting to management.

The Company keeps records to identify:

a. Incidents (e.g., major damage, personal injury, major schedule delays.)

b. Nonconforming items in accordance with Section 15, "Nonconforming Materials, Parts or Components."

c. Unfavorable conditions and programmatic deficiencies identified in Audit Reports in accordance with Section 18, "Audits."

d. Significant equipment failures and malfunctions which occur during Station operation.

The Company tracks the completion of corrective action for nonconformances. It maintains records of nonconformances and their resolution. Periodic reports to management inform them of the status of nonconformances. The Company issues reports indicating the status of all corrective action in progress. These reports are routed to Company corporate management. These periodic reports are reviewed to ensure prompt implementation of the corrective action. Nuclear Oversight routinely reports nonconforming items to appropriate levels of management. The following items are not reported:

a. Minor weld inclusions, undercuts, or porosities, where the magnitude or frequency of occurrence is not indicative of a significant problem in design, procedures, materials or workmanship.

b. Minor departures, except for Code applications, from specified physical or chemical properties of materials that do not require extensive evaluation to determine adequacy of the materials.

c. Minor structural departures from design requirements, such as low strength concrete or porosity of concrete, provided that an extensive evaluation is not required to determine adequacy of the structure or repairs.

d. Minor departures from performance specifications, as demonstrated by acceptance of construction and preoperational tests, which do not require extensive evaluations of an item's performance capability or extensive redesign.

e. The occurrence of a nonconformance that can and will be remedied through the use of established methods in applicable codes or approved procedures.

f. The nonconforming item will have the capability of performing its intended function. The responsible department sends copies of the nonconformances to the cognizant quality area.

For construction or modification activities under Nuclear Engineering and Technology Services or Site Engineering and Construction control, on-site corrective action measures consist of procedures for prompt resolution and approval of corrective actions by Nuclear Engineering and Technology Services or Site Engineering and Construction. The responsible manager brings significant nonconformances to the attention of corporate management for actions where satisfactory resolution cannot be achieved by Nuclear Engineering and Technology Services or Site Engineering and Construction.

### 3.6 Verification and Follow-up

For construction or modification activities under SEC control, SEC assures that the corrective action has been taken. The Company requires contractors and vendors to follow-up on corrective action commitments within their quality programs.

Independent personnel follow-up and approve that nonconformances have been corrected satisfactorily.

For Operations, trend studies and audit results are evaluated to assure that corrective measures are effectively implemented and that actions to prevent recurrence are effective. The Company verifies completion of corrective actions for maintenance, repair, refueling and operation activities.

The Company performs surveillance of site corrective action. The Company is responsible to track and verify completion of corrective action taken for audit deficiencies including programmatic deficiencies identified in audits. The Company verifies and approves the completion of corrective actions by the station.

The Company regularly reviews and analyzes records:

a. To assure that the causes of nonconformities and the corrective action have been clearly described.

b. To assure that the overall effect resulting from the use of nonconforming items has been evaluated by authorized Commonwealth Edison Company personnel.

c. To determine whether corrective measures will preclude recurrence. Personnel performing the evaluation function are responsible for considering the cause and the feasibility of corrective action to assure that the necessary quality of an item is not deteriorated. Where it is determined that the cause cannot be corrected in a timely manner, the effective date or corrective action will be determined during the review and evaluation. Evaluation may indicate the need for investigations to assure that corrective measures are considered complete. Evaluation may also indicate that the nature of the nonconformity is minor and does not require corrective action.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 16
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.11

# 1. POLICY

The company establishes and implements a program to ensure that sufficient records of items and activities are generated and maintained in accordance with applicable requirements.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
h. Performance Monitoring and Support Department
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through The Quality Assurance Data Base.

# 3. REQUIREMENTS

### 3.1 Program

The records program provides for:

a. administration
b. receipt
c. transmittal
d. storage
e. preservation
f. safekeeping
g. retention
h. disposition

### 3.2 Administration

The quality records program will include those record types, controls, and provisions for storage and preservation contained in NQA-1, Supplement 17S-1. Authority and responsibility for record control activities is delineated. Records are administered through a system which includes an index of record type, retention period, and storage location.

Records will be legible, accurate, complete, identifiable, and retrievable. Records may be maintained in electronic media. Records are complete when dated and stamped, initialed, signed or otherwise authenticated. This may include electronic approval and authorization. Corrections, revisions, or supplements to completed records will be reviewed and approved by an authorized individual in the originating organization. Such changes will be dated and stamped, initialed, signed, or otherwise authenticated including the use of electronic approval and authorization. Procedures will be established to assure that only those persons authorized to use electronic approval grant such approvals.

Measures will be established for replacement, restoration, or substitution of lost or damaged records.

### 3.3 Receipt

A system for receipt control of records will be established. Receipt control is required for records transferred:

a. between company locations
b. between vendors and the company
c. from company department files to final storage locations.

### 3.4 Transmittal

Systems are established to transfer records between company locations and between vendors and the company. Records transferred from company department files to a final storage location are also under such systems.

The system includes:

a. inventory of transmitted records
b. receipt acknowledgment

### 3.5 Storage

Record storage facilities are established to meet regulatory requirements, including those of NQA-1, Supplement 17S-1 and ASME Section III, NCA 4134.17. Storage systems provide for:

a. assignment of responsibilities
b. control and accountability of records removed

### 3.6 Preservation

In order to prevent deterioration, records are stored:

a. in a manner to prevent damage from moisture, temperature, pressure, etc.
b. in binders, folders, envelopes, or similar systems.

Manufacturers recommendations are followed for special recording media.

### 3.7 Safekeeping

Measures are established to prevent access to records by unauthorized personnel. These measures guard against theft and vandalism.

### 3.8 Retention

Record retention periods are established to meet regulatory requirements. The most stringent retention period is implemented when multiple requirements exist.

### 3.9 Disposition

Records will be dispositioned at the end of the prescribed retention period. A review of regulatory requirements will be performed prior to disposition to assure current requirements are satisfied.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- ANSI/ASME NQA-1
- 10CFR50 Appendix B, Criteria 17
- ASME Section III, NCA 4000
- ANSI N18.7
- ANS 3.2

# 1. POLICY

A documented, comprehensive system of planned and periodic performance based audits and assessments of the Company and its vendors is conducted to verify quality assurance program compliance, adequacy, and effectiveness and to assess conformance with management controls.

Audits are conducted to the requirements of NQA-1 to assist the audited organization and to assure completion of required corrective actions, commitments, or improvements.

# 2. RESPONSIBILITIES

The Nuclear Oversight Department is responsible for carrying out the requirements of this section. The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Audits - General

### 3.1.1 Responsibility

Nuclear Oversight's responsibilities include conducting the external (offsite) audit program of Company stations, departments, and vendors involved in nuclear activities, the management assessment program, and participation in joint member groups. Nuclear Oversight is also responsible for and conducts the internal (onsite) audit and surveillance program and assessments of Company stations and departments involved in nuclear activities and is independent of Nuclear Operations.

### 3.1.2 Scheduling

Audits are performed to schedules approved by the Nuclear Oversight Manager which include the minimum audit areas and frequencies. Schedules are reviewed semi-annually and revised accordingly to assure

that coverage is maintained current. Audits will be initiated early to assure effective quality assurance during design, procurement, manufacturing, construction, installation, inspection, testing, and operations.

Additional unscheduled audits may also be performed at various stages of activities, based on the nature and safety significance of the work being done to verify continued adherence to and effectiveness of the quality systems.

Operating activities will be audited in compliance with the Technical Specifications. Each ongoing Code activity is audited annually and results are made available to the ANI.

Material Manufacturers or Material Suppliers who are qualified under the Company's ASME "N" Certificate of Authorization and who are actively supplying Code materials will be audited/surveyed annually. Vendors and their subtier suppliers are audited periodically--generally in conjunction with plant visits for witnessing inspection points. The Company's active participation in joint utility audit programs provides an alternative means to fulfilling its responsibility for auditing active vendors.

### 3.1.3 Preparation

A documented plan or an agenda will identify the audit scope, requirements, audit personnel, activities to be audited, organizations to be notified, applicable documents, and schedule. An approved checklist or procedure for each audit will identify the quality and technical elements of the area or items to be evaluated. Audit plans, agendas, checklists, and procedures will be prepared in advance under the direction of the Audit Team Leader.

### 3.1.4 Personnel

Audits will be accomplished by experienced personnel qualified in accordance with NQA-1 who are familiar with written procedures, standards and processes applicable to the area being audited. Audit

personnel shall have sufficient authority and organizational freedom to make the audit process meaningful and effective and shall not have direct responsibilities in the areas to be audited. The Audit Team Leader shall organize and direct the audit and ensure the audit team collectively has the required experience or training for the activities to be audited. The audit team may be supplemented by technical specialists to provide additional experience and competence.

### 3.1.5 Performance

Performance based audits are conducted to assess specific activities, processes, and records on the basis of their impact and importance relative to safety, reliability, and functionality. Audits can be focused on areas most in need of improvement. Objective evidence shall be examined to the extent necessary to determine that a quality system is being effectively implemented.

### 3.1.6 Reporting and Follow-up

An audit report includes the description of the audit scope, identification of the audit team and personnel contacted during audit activities, a summary of audit results (including a statement on effectiveness of the quality assurance program elements), and a comprehensive description of each audit concern. Audit results will be documented and distributed and shall be reviewed by the management having responsibility in the area being audited. Deficiencies requiring prompt corrective action are reported immediately to the management of the audited organization.

Responsible management shall take necessary action to correct the deficiencies identified in the audit. They will define the corrective action to be taken, actions which will prevent recurrence, and a schedule for implementing these actions.

These commitments will be evaluated by the Audit Team Leader. Recurring deficiencies or failure to implement corrective action will be reported to appropriate Company executives.

Verification of the completion of scheduled corrective action commitments is performed to assure deficiencies or adverse conditions are corrected. Previous deficient areas or adverse conditions are followed up to assure effective corrective action is effective and implementation continues.

### 3.1.7 Records

The audit plan, report, objective evidence, written replies, and the record of completion of corrective action and deficiency follow-up will be on file. Personnel qualification records for audit team members shall be established, maintained, and reviewed.

### 3.2 Independent Management Audit/ Assessment

Audits of the Company are performed by the Authorized Inspection Agency as required by the Code and ASME N626.0. A periodic review of the audit program will be performed by an independent organization to assure that audits are being accomplished to program requirements. An annual report on the status, adequacy, and implementation of the Quality Assurance Program is submitted to the Chief Nuclear Officer by the Vice President of Nuclear Operations Support.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N18.7-1977
- ANSI/ANS 3.2-1988

# 1. POLICY

It is the policy of the Company to assure a high degree of availability and reliability for our nuclear plants while ensuring the health and safety of the public and our workers. Therefore, the Quality Assurance Program is applied in a graded manner to certain areas and activities that are not clearly defined as safety related or Code related. the Company calls this application Augmented Quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Corporate Security Department

The Company assigns responsibilities for specific requirements through the Quality Assurance Database.

# 3. REQUIREMENTS

The Company applies the Quality Assurance Program to certain systems, structures, components, and activities which are not safety related or Code related to a degree consistent with their importance to safety. While there may be minor interfaces with additional sections of this manual, the following sections apply to the programmatic elements of the noted activities:

### 3.1 Radiation Protection, As Low As Reasonably Achievable, ALARA

Sections 3, 4, 5, 6, 15, 16, and 18 are applicable to this area.

### 3.2 Emergency Planning

Section 5, 6, 16, and 18 is applicable to this area.

### 3.3 Transport of Radioactive Waste

Sections 4, 5, 6, and 17 are applicable to this area.

### 3.4 Security

Security is controlled for each station by the station security plan that is prepared per NUREG 0908. This plan describes the applicable personnel organization, the keeping of records, audits, and the reporting of abnormal conditions. Sections 6 and 16 are applicable to this area.

### 3.5 Review of Class IE Equipment Qualification

Sections 3, 5, 6, and 15 are applicable to this area.

### 3.6 Training

Sections 4, 5, 6, 15, 17, and 18 are applicable to this area.

### 3.7 Environmental Monitoring

Sections 17 and 18 are applicable to this area.

### 3.8 Meteorology

Sections 17 and 18 are applicable to this area.

### 3.9 Fire Protection

A quality assurance program is required for fire protection systems in Safety Related areas. Nuclear Engineering and Technology Services is responsible for determining this need for systems on a case by case basis. The Stations are responsible for determining this need for other fire protection equipment on a case by case basis. When required by these organizations, Sections 3, 4, 5, 6, 7, 10, 11, 14, 15, 16, 17 and 18 are applicable to this area.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendices A, B, and R
- 10CFR71 Part H
- 10CFR73
- 10CFR21
- ANSI/ASME NQA-2

## TABLE OF CONTENTS (Rev. 64) 2 pages

## TABLE OF CONTENTS



Approved by _____ (acting) 8/17/93
Nuclear Oversight Manager Date

The following is a supplement which describes how this Manual complies with requirements of ASME Boiler and Pressure Vessel Code - Section III -Division 1 plus Division 2 for concrete containments.

## 1.0 GENERAL (NCA 4134.1, NCA 4134.2)

The Commonwealth Edison Company, hereafter known as the Company, has an overall Quality Assurance Program designed to accommodate the engineering and construction phases of a nuclear power plant as well as the subsequent operations of those plants including maintenance, modification, and repair. For purposes of Code activities, this program consists of four parts. The first part titled, Quality Assurance Program, which is also filed with the Nuclear Regulatory Commission as the Topical Report, contains the requirements to which the Company has committed. This part, titled ASME Code Interface, describes how the Company's program complies with specific sections of the ASME Code. The third part, the Station Quality Assurance Manual, covers essentially a Section XI program including In-Service Inspection activities. The last part is titled Quality Assurance Procedures (QP's).

The "Low" QP's (-1 through -50 suffix) were promulgated for administering contracts with construction contractors hired by the Company to build nuclear generating stations. These contractors had to have implemented their Company approved Quality Assurance Programs. The focus was on those controls necessary for the achievement of quality in the construction of new stations.

The "High" QP's (-51 through -100 suffix) were promulgated to be detailed implementing procedures for use by the station and supporting departments after the completion of the construction permit. The focus was on the consistent achievement of quality in the operation, maintenance, modification, and repair of operating nuclear facilities. Currently, the controls in the "High" QP's have been essentially replicated in the stations' administrative procedure sets.
The language in both sets of QP's has evolved to acknowledge that all craft-labor contract administration (including support of ongoing station

operations) is by Site Engineering and Construction (SEC), and all routine maintenance and repair (as well as operations) is the responsibility of the station organization.

The Quality Procedures are invoked as detailed in QP 2.0.

The recent (1993) Nuclear Division reorganization has focused the accountability for all activities in the on-site organizations during all phases in the life of a nuclear station. This includes the use of craft labor in support of the stations. This ASME Code Interface is provided to specifically explain the Company's implementation and compliance with Quality Assurance requirements of the ASME Code Section III as detailed in NCA 4134. Figure I shows the relationships among this Manual, ASME Code NCA 4000, and 10CFR50, Appendix B. Figure II identifies Division 2 document responsibilities.

Other detailed quality assurance procedures covering items such as training, the training program, review of procurement documents, personnel qualification and certification, maintenance and updating of ASME Code information on the computerized Quality Approved Bidders Lists, off-site audit plans, filing, trending, etc. are documented in the Nuclear Oversight Quality Assurance Procedures. Furthermore, individual Department procedures provide detailed requirements relative to specific responsibilities involving implementation of the Company's Quality Assurance Program, ASME Code and other National Codes and Standards.

## 1.1 Statement of Authority

The Statement of Authority of the Nuclear Oversight organization of the Company is contained in the preface of this Manual. The Nuclear Oversight organization, which includes the Onsite and Offsite Quality Verification Departments, is empowered to assure compliance with the quality requirements of the ASME Code, other codes, Federal Regulations and the various National Standards that are applicable to an Owner's and N-type Certificate Holder's program of quality assurance for nuclear

power. Those engaged in quality verification have the independence and authority to stop work.

## 1.2 Responsibility - General

In the event that the Company undertakes the construction of a new nuclear generating station or begins a project involving significant Section III construction additions, a new project organization may be established. Such an organization will follow the same program as described herein and will be managed by the Nuclear Engineering and Technology Services Department.

Responsibility for implementation of quality assurance requirements rests with the Chief Nuclear Officer, while the verification of the implementation and the establishment of policies involving quality assurance rests with the Nuclear Oversight Manager.

For construction of new plants, the Company relies upon the utilization of an Architect/Engineer (AE), Nuclear Steam Supply System (NSSS) suppliers, and subcontractors. The Company contracts with suppliers who are qualified in accordance with the applicable section of the ASME Code and who have the appropriate Code Certificates of Authorization or have a written quality program that has been evaluated and approved by a Company survey. The responsibility for Code compliance remains with the Company when the Company is to stamp the item. When the Company purchases Code items requiring stamping, it is the responsibility of the approved Code supplier to stamp the item.

### 1.2.1 Division 1 - Responsibility

It is the responsibility of the Nuclear Engineering and Technology Services Department to assure that stress analyses or calculations for parts and appurtenances are correctly incorporated into the drawings and Design Reports of components for which the Company assumes overall responsibility. The drawings used for design and construction shall be identified, described, and in agreement with the Design Report before it is certified. Completion of the applicable Data Reports and

subsequent stamping will be done by the Company. When authorized by the Authorized Nuclear Inspector (ANI), stamping will be witnessed by the ANI and the Onsite Quality Verification Superintendent or his designee.

### 1.2.2 Division 2 - Responsibility

For ASME Section III, Division 2 concrete containments, the Company performs construction management and does not perform the actual construction. The surveillance of the post-tensioning systems for existing concrete containments is performed under the cognizance of the Company's Division 2, Chief Level III.

Site Engineering and Construction has the responsibility for preparation and control of the construction procedures necessary to manage the concrete containment work, and for preparation of the Construction Report and the C-1 Data Report. They will delegate to their qualified contractors the duties of preparing implementing construction procedures and shop and field drawings, including test procedures that are needed to satisfy the requirements of the construction specification and design drawings. The responsibility for preparation and approval of the C-2 Data Report rests with the Fabricator. The Nuclear Engineering and Technology Services Manager will approve the Design and Construction Reports, and will certify the C-1 and N-3 Data Reports.

## 1.3 Organization Charts

The organization charts describing the Company's organization are contained in Section 1.0 of the Topical Report. The basic organizational structure within the Company during operations consists of a Site Vice President at each site with centralized support and independent overview. The engineering and construction portion of the organization consists of an onsite organization supported by a centralized support organization. The site organization is intimately and directly involved with the day-to-day construction and engineering activities associated with nuclear facility construction and modification. The Site Vice Presidents and the Nuclear Engineering and Technology Services

Manager report to the Chief Nuclear Officer. Station quality assurance is provided by Onsite Quality Verification Department which is independent of the Site Vice Presidents' organizations. The station Quality Control group performs typical quality control functions such as inspections and examinations.

Quality Control is part of the Station organization although independent of production. Station Quality Control has an offsite reporting capability to the Nuclear Support Department to insure independence. Station Quality Control personnel have sufficient organizational freedom and authority to Stop Work in order to prevent inadvertent use or installation of nonconforming materials, parts, or components.

## 1.4 Policy Statement

The basic policy statements concerning the Company's Quality Assurance Program are contained in the "Policy Statement" at the beginning of each Section of the Topical Report. Overall policy includes not only compliance with ASME Section III, for Division 1 items contracted for after July 1, 1971, and for Division 2 concrete containment items contracted for after July 1, 1977, but also the requirements contained in the Code of Federal Regulations 10CFR50, Appendix B, ANSI/ASME NQA-1, 1989; and ANSI N45.2 Standards not included in ANSI/ASME NQA-1, and ANSI N18.7.

## 1.5 General

The Nuclear Oversight Manager informs the individual ANI's of the ANI Supervisor's approval of the Quality Assurance Program by transmittal of the acceptance letter to the individual ANI's.

The Company implements revisions to the Quality Assurance Program within 60 days of issuance. Final revisions to subordinate procedures and completion of training may take longer than 60 days.

### 1.6 Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained in their assigned duties in accordance with a documented training program.

Personnel performing special processes, inspection, and tests will be subject to removal from such activities if it is determined that the individual's capabilities or performance are not in accordance with Code requirements.

The qualification requirements for personnel performing NDE and Division 2 Concrete inspection are contained in the CECo Special Process Procedures Manual (SPPM) Vol. 1. This document meets the requirements of ASME Section III, NQA-1, and SNT-TC-1A.

The qualification requirements for personnel performing inspections and tests are contained in the CECo SPPM Vol. III. This document meets the requirements of ASME Sect. III and NQA-1.

Personnel performing audit activities are qualified in accordance with ASME Sect. III and NQA-1 and the Company's qualification procedure. These personnel will have experience and/or training commensurate with the scope, complexity, or special nature of the activity audited. Audit Team Leaders will be qualified based on education, experience, training, testing, audit participation and evaluation of written and oral communication skills. Auditor and Audit Team Leader qualifications are evaluated annually.

## 2.0 DRAWING AND SPECIFICATION CONTROL

**(NCA 4134.3, NCA 4134.5, NCA 4134.6, NCA 3551, and NCA 3556)**

Drawing and specification control is maintained by Nuclear Engineering and Technology Services to assure that only the latest approved drawings and specifications are utilized in the procurement, fabrication, construction, maintenance, and modification of nuclear power plant facilities. The Company utilizes a centralized Drawing and Document

Control Center to maintain an integrated document system not only for the Company but also for their subcontractors.

## 2.1 Production, Maintenance and Distribution of Documents

The Company contracts with qualified and Company approved Architect Engineering firms to provide design drawings, standards, certified designs, construction specifications, stress analyses, and Certified Design Reports for initial construction of the power plant. Augmenting the basic contract is the contract with the Nuclear Steam Supply System supplier who produces drawings, standards, design specifications, stress analyses, and Certified Design Reports for those portions of the plant for which he is assigned responsibility. Design Specifications will be produced that are adequate to form the basis for fabrication in accordance with the Code and are available for all items requiring an ASME Code symbol. Design reports will be produced for all components, component supports, and appurtenances. Load capacity data sheets and design report summaries supplied by a Certificate Holder shall be reviewed and verified by the Company or by its A/E's.

For modifications, a qualified Architect/Engineer is engaged to produce the design drawings, standards, certified design and construction specifications, stress analyses and design reports as required and to submit them for review, approval, and acceptance by the Nuclear Engineering and Technology Services Department. The Company may elect to produce the required drawings, standards and specifications and perform required calculations. Applicable requirements of the design specification will be translated into specifications, drawings, procedures, and instructions. In these instances, design work reviews and Registered Professional Engineer (RPE) Certification will be accomplished under the direction of the Company's own Registered Professional Engineers. The applicable Authorized Nuclear Inspector shall be made aware of the ASME Section III Code related design changes involving these modifications and all such changes will be reconciled with documents used for construction. The design package will identify the assemblies or components that are part of the item being designed.

Certification of all required design documents for initial construction and modifications which are performed by Architect/Engineers shall be by a Registered Professional Engineer. (Design documents, as a minimum, and include design specifications, design drawings, design reports for Division 1, Load Capacity Data Sheets and design report summaries. For Division 2, design documents include design construction specifications and reports plus design drawings.) The Design Report shall be certified only after all design requirements of the Code have been met. Such Registered Professional Engineers shall be other than the individuals certifying the Design Specifications but are not required to be independent of the organization holding the Certificate. The Company shall assure that all Registered Professional Engineers certifying design documents on their behalf are currently certified. Such Registered Professional Engineers shall be qualified in accordance with the requirements of ASME N626.3-1988 and the Company's procedures, and their records, shall be reviewed at least once every three years to assure that the qualifications have been maintained.

## 2.2 Drawing Revision Control/ Design Change Control

Nuclear Engineering and Technology Services and/or Site Engineering and Construction, or their designee, assures control of revisions to drawings produced by its Architect/Engineer or Nuclear Steam Supply System Supplier by requiring submittal for documented review and comment, of changes or revisions to the originally approved design drawings prior to release. With respect to modification of systems, structures, or components, the design revisions are submitted to the respective electrical, mechanical, or structural engineering disciplines of NETS or SEC, or their designee, for review prior to release. (Design change evaluation is carried out in accordance with Section 3.0 of the Topical Report.) An updated drawing revision status listing is available from the Centralized Drawing and Document Center.

## 2.3 Specifications and Engineering Standard Revisions Control

The Nuclear Engineering and Technology Services Department assures control of revisions to specifications and engineering standards utilized

on nuclear power projects in accordance with the requirements described in Section 3.0 of the Topical Report. Design Specifications will be available for all components, appurtenances, and component standard supports (unless included in the design specification for the component).

## 3.0 PROCUREMENT (NCA 4134.4)

Basic procurement control, as exercised by the Company, is described in Sections 4.0 and 7.0 of the Topical Report. Overall, the engineering and construction portions of the procurement for construction of a new plant are conducted in such a manner that the Architect/Engineer is required to submit their design, specifications, and standards to be utilized in procurement to the Company for review and approval.

Subsequent to approval of procurement documents by the Company, the actual purchasing is performed by the General Office Purchasing Department or satellite purchasing organizations located at certain sites. Procurement by such site organizations are under the control and management of the General Office Purchasing Department. Associated procurement documentation packages, when required, are made from specifications and drawings issued and approved by the Architect/Engineer or the Company's Nuclear Engineering and Technology Services Department. In addition, procurement packages for ASME Code purchases are reviewed by a representative of Quality Verification to assure requirements are provided and the vendor is on the computerized CECo Quality Approved Bidders List. Designated individuals using written procedures complete and document this review prior to contract award. The Company plans procurement activities prior to the start of procurement. These activities are documented, including the procurement method and organizational responsibilities. Changes to procurement documents are incorporated into the original procurement documents.

The NSSS Supplier performs procurement within an approved quality assurance program subject to the Company's audit and surveillance of subcontractor activities.

3.1 Procurement Control (NCA 4134.4, NCA 4134.7, NCA 4134.8, NCA 4134.13 and NCA 4134.15)

Procurement document control in the design and construction phases of power plant construction is exercised by the Architect/Engineer or the Nuclear Steam Supply System Supplier in the specifications prepared by them. Such documents must comply with the requirements of the rules and regulations of ASME Section III as well as other regulatory guides, codes and standards.

The Company identifies and selects qualified manufacturers and suppliers of material, items and services on the Quality Approved Bidders List. These suppliers are qualified by survey, audit, or on the basis of being a current ASME Nuclear Certificate holder performing work within the scope of the Certificate. Procurement of Code material is made from a supplier or manufacturer who either holds the appropriate Quality System Certificate (Materials) or has written quality program that has been evaluated and approved by CECo survey.

When the Company qualifies a Material Supplier or a Material Manufacturer under the provisions of NCA-3800, the audit frequency shall be commensurate with the schedule of production or procurement but shall be conducted at least annually during the interval in which the Company's material is being controlled by a Material Supplier or produced by a Material Manufacturer.

Personnel receiving ASME Code material items, and services assure that the appropriate documentation is submitted including Certified Material Test Reports, Certificates of Conformance, and ASME Code Data Report Forms, as applicable.

During the operational phase, either an Architect/Engineer's control is exerted and/or the Company's own internal control is exerted, dependent upon the assignment of the responsibility by CECo. In those instances when the Company controls procurement, the requirements of ASME Section III, Classes 1, 2, 3, CS, MC and CC, as applicable, are directly included in the procurement documents. In the instances of the

utilization of an Architect/Engineer, the requirements of ASME Section III, as well as other applicable codes and standards are included in specifications by the Architect/Engineer and subsequently assured by the Company's engineering review. Where provided in the scope of the Certificate of Authorization, the provisions of NCA 3820(e), whereby a Certificate of Authorization Holder may supply material or may manufacturer and supply material, shall apply.

## 3.2 Source of Purchase Requisition Approval

During the engineering and construction phase of a new project, requests for proposal are prepared by Engineering and include a procurement package supplied by the Architect/Engineer to the Company or are developed internally.

Preparation of site procurement requisitions is the responsibility of Site Engineering and Construction. ASME requirements pertaining to Section III, Division 1, Classes 1, 2, 3, CS and MC, as applicable, and Division 2, Class CC for concrete containments are included as part of such purchase packages. When work is instituted by the Company for the maintenance of an existing power plant, procurement requisitions are initiated by the Station organization.

When procurement to support operations, including modifications and repairs, is initiated, the procedures and requirements are the same as described for the engineering and construction phase for a new plant.

## 3.3 Source Inspection

Where source inspection is required, it will be performed by Company personnel or the Company's agent, as applicable. Inspection will be by qualified personnel in accordance with preplanned inspection procedures or checklists.Source inspection and audit activities are also performed by the NSSS Supplier. The Company audits these activities to assure compliance with design requirements. When requested by the ANI, the Company shall arrange for access by the ANI to the Company's Code suppliers' facilities.

## 4.0 PROCESS CONTROL (NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.14)

Process Control is exercised by the Company in those activities involving the Code. In the construction phases, this process control is specified as part of the Company's contract with its AE, NSSS Supplier, or involved subcontractors. The requirements for checklists, travelers and production order systems, are also included in the procurement documents. For ASME Section III, Division 2 work, the Company contracts with ASME approved Certificate of Authorization holders for construction activities.

Process Control sheets, travelers or checklists are prepared, as necessary, and include:

1. document numbers and revisions to which the process, inspection or test conforms,
2. space for reporting results of completion of specific operations at checkpoints of fabrication, manufacture or installation, and
3. space for a signature, initials or stamp and date of responsible Company representatives and the ANI for those activities witnessed.

Process control documents for special processes include, or reference:

1. procedure, personnel and equipment qualification requirements,
2. conditions necessary for accomplishing the process, and
3. acceptance criteria,
4. the activities that require qualified inspection and test personnel.

The Company submits welding and brazing procedures which have been qualified under the provisions of ASME Sections III and IX to the ANI for review and acceptance prior to use.

## 5.0 INSTRUCTIONS AND PROCEDURES (NCA 4134.5)

The Company reviews instructions, procedures and drawings for adequacy, completeness and correctness prior to approval and issue.

The Company establishes procedures to control minor changes to documents. These procedures identify the type of changes that are considered minor as well as the personnel who are authorized to review and approve these changes.

Nuclear Oversight reviews procedures for ASME Section III (Division 1 and 2) construction.

## 6.0 WELDING QUALITY ASSURANCE (NB-4300, NCA 3130, NCA 4134.9, NCA 5253 and NCA 5254)

Welding quality assurance, as practiced by the Company or their agent, is a controlled plan which assures that the welding procedures and welding personnel are properly qualified in accordance with Sections III and IX of the ASME Code. In the construction phase, welding quality assurance is specified as part of the Company's contract requirements with their A/E, NSSS Supplier, or involved contractors. Control is assured through the Company surveillance and audit or through the use of Independent Testing Agencies.

### 6.1 Welding Material Control

The welding material control system including details of control of storage, issuance, and use, is as outlined in the Company SPPM.

### 6.2 Qualification of Welders

The Company qualifies welders in accordance with the CECo SPPM. When there is a specific reason to question the welding procedure or the ability of welding personnel, the Authorized Nuclear Inspector may require requalification.

## 7.0 NONDESTRUCTIVE EXAMINATION (NB-5000 and CC-5000) and CONCRETE INSPECTION (CC-5000), (NCA 5255, NCA 5256)

For site contractors requiring subcontracted NDE and concrete inspection services, the Company contracts for provision of such services. The administration of the contract is assigned to the Onsite Quality Verification Department where such services are established for Nuclear Engineering and Technology Services administered contracts. In addition, the administration of such contracted services involving operating stations is undertaken by the station Quality Control Supervisor. Nondestructive examination and concrete inspection and testing contractors are surveyed and qualified by the Company, and resulting qualification documentation is supplied to the site Code contractors prior to their use of examination and inspection services. The performance of such services shall be by agreement with the inspection and testing contractor. The site Code Contractor contractors utilizing such testing and inspection services shall review and accept procedures and personnel qualifications of the testing and inspection contractor. The details governing qualification of personnel and procedures, NDE results, and equipment are contained in the CECo SPPM. NDE Procedures shall be proven by demonstration to the satisfaction of the cognizant Authorized Nuclear Inspector or Authorized Nuclear Inservice Inspector, as applicable.

Concrete inspection and testing personnel shall be qualified in accordance with the requirements of Appendix VII of ASME Section III, Division 2.

## 8.0 HEAT TREATING (NCA 5263, NB-4600)

Heat treating operations performed by or under the cognizance of, the Company are performed in a controlled and documented manner and the appropriate process parameters are monitored and recorded as required by Section III of the ASME Code.

## 9.0 DOCUMENTATION (NCA 4134.5, NCA 4134.6, NCA 4134.8, NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.17)

Records related to Code work are indexed and made available to the Company by the vendor. Records are also made available to the ANI.

The records program for classification and retention of records complies with Tables NCA 4134.17-1 and NCA 4143.17-2.

The records program provides for:

1. requirements for radiographic reproduction,
2. identification of records to be maintained,
3. validation of records,
4. indexing and location of records, and
5. maintaining traceability of records.

The receipt control system includes:

1. protection from loss or damage during receipt,
2. identification of responsible department/individual,
3. designation of required records,
4. identification of records received,
5. inspection of incoming records using written procedures, and
6. a structure to maintain control during the process.

A records custodian inventories record's submittals, acknowledges receipt and processes records.

### 9.1 System of Acquiring Final Documentation

In those instances where the Company performs a modification involving Code, the verification and acceptance of satisfactory completion of procedures, certification data, NDE documentation, etc., that were required to acceptably repair, fabricate, and install the items specified in the maintenance modification work package is the responsibility of Station

Quality Control. When the Company has contracted for the fabrication, modification, maintenance or repair, the ASME qualified contractor is responsible for the final documentation.

Upon completion of the required testing, the complete documentation package is submitted to the station's Technical Staff Supervisor for review and acceptance. The document package shall be forwarded expeditiously to the station Central File Supervisor for filing and retention.

Quality Assurance records shall be retained, identified, indexed, protected, retrievable and accessible, plus be classified as lifetime or nonpermanent as identified and provided in Section NCA 4134.17 of Section III of the ASME Code. Permanent lifetime records are either maintained in duplicate storage or in 2-hour fire rated facility meeting NQA-1 requirements. When temporary storage of records is required, at least a 1-hour fire rated container shall be used. Facilities use for duplicate storage are sufficiently separated to eliminate a simultaneous hazard. The enforcement authority is kept notified as to the location of records showing compliance to Sections III and XI.

## 9.2 List of Final Documents

For each contract involving ASME Code activities, a list of required final documents shall be prepared. This list shall include the requirements of ASME Section III and applicable specifications, drawings, production travelers, maintenance procedures, etc. A Design Report summary may be provided in lieu of a Design Report for Standard Supports. The Final Documentation Checklist shall provide for the review and concurrence of the Authorized Nuclear Inspector and the Quality Control Supervisor.

## 9.3 Data Reports

The Nuclear Engineering and Technology Services Manager, as the chairman of the Nuclear Engineering Committee, has overall Owner's responsibility for the Form N-3, N-5, C-1 Data Report and other CECo N-type Data Reports, including stamping responsibility for ASME Section III, Div. 1 and Div. 2. The Nuclear Engineering and Technology Services

Manager delegates signature authority for Code activities to the Site Engineering and Construction Managers, however, he retains the overall responsibility. The sequence of stamping and for the completion of the Code Data Report Form shall be determined by the Authorized Nuclear Inspector and the Certificate Holder.

In any case, the Code Symbol Stamp shall not be applied until completion of the required examination and testing, and only with the authorization of the Authorized Nuclear Inspector. Before the component or appurtenance is placed in service, copies of the appropriate ASME Data Reports are filed with the enforcement authorities having jurisdiction at the location of each installation.

## 10.0 NATIONAL BOARD REGISTRATION OF PRESSURE VESSELS

Pressure vessels constructed to ASME Section III rules after December 31, 1976 for which Commonwealth Edison Company does the stamping under its ASME N-Certificate of Authorization shall be registered with the National Board of Boiler and Pressure Vessel Inspectors. The Nuclear Engineering and Technology Services Manager shall have the responsibility for controlling the consecutive issuance of National Board serial numbers to be affixed to these pressure vessels and shall maintain a record of the serial numbers assigned to each specific item. There will be no skips, gaps or duplication of National Board serial number issued for these pressure vessels. The record shall include the date issued, description of the product to which the number is assigned, manufacturer's serial number, the Commonwealth Edison Company National Board serial number, and any additional information necessary to identify the item. The Nuclear Engineering and Technology Services Manager shall submit to National Board the original and one legible copy of the ASME Data Report for each nuclear pressure vessel required to be stamped and registered with National Board by the State of Illinois Boiler Safety Act, within 30 days of being stamped. The nameplate applied will conform to the facsimile included on Figure III.

## 11.0 TEST CONTROL (NCA 4134.11)

Test procedures identify or reference requirements and acceptance criteria contained in the ASME Code. The Company uses markings, tags, stamps, routing cards, labels, forms, or other means to indicate the status of examination and tests. The required inspections and tests described in Section 10 and Section 11 of the Topical Report are performed before placing equipment in service.

## 12.0 CALIBRATION CONTROL (NCA 4134.12)

To maintain accuracy within necessary limits, the measuring and test equipment used in activities affecting quality is periodically calibrated and adjusted in accordance with written procedures appropriate to the item(s) of measuring and test equipment involved. Procedures also are used to specify preoperational checks, environmental requirements, step-wise instructions for use, and instructions for storage. Suppliers and contractors to the Company are required to have and employ similar control measures which will be assured through surveillance, audit and approval of contractor procedures.

The System Operational Analysis Department will be responsible for calibration and maintenance of the Company's measuring and test equipment. Assistance in this activity will be obtained from vendors or laboratories who have the necessary capabilities. Calibration authority may be delegated to the sites by the SOAD Manager.

When measuring and test equipment is found to be out of calibration, an evaluation shall be made and documented of the validity of previous inspection or test results and of the acceptability of items previously inspected or tested. All pressure test gauges used in ASME pressure testing shall be calibrated against a standard dead weight tester or a calibration master gauge prior to and after each test or series of tests.

Charpy V-Notch Testing Machines shall be calibrated at least once each year in accordance with ASTM-E-23-72 and employing standard

specimens obtained from the National Institute of Standards and Technology (NIST) Gaithersburg, MD. The associated temperature instruments shall be calibrated at least once in 3-month intervals or, when utilized with longer periods between use, such calibration shall be performed prior to being used.

Tags or labels are affixed to measuring and test equipment or its protective storage container to indicate the current calibration status. Devices consistently found out of calibration are repaired or replaced.

## 13.0 NONCONFORMANCES (NCA 4134.16)

During the construction phase of a new plant, the Company utilizes a Nonconformance Report (NCR) to document the identification, correction and disposition of items found not in compliance with specifications (including the Code). The Company's contractors may also generate their own internal Nonconformance Reports; however, those contractor identified discrepancies which require significant engineering to resolve or involve significant rework, must be submitted to the Company for review and approval prior to placing an applicable system in service. All Code noncompliances must be corrected and result in installations which comply with the Code.

Authorized and qualified personnel approve the proposed disposition of nonconformances. Completion of all required corrective actions (including actions to prevent recurrence) is verified and this verification is documented. Nonconformances are made available to the Authorized Nuclear Inspector for his review.

During the operations phase, the Company utilizes an Integrated Reporting Program which results in the generation of a Discrepancy Report for hardware or Code related nonconforming conditions. Review, disposition, and verification are performed in a similar manner as described for Nonconformance Reports. The Authorized Inspector is given the opportunity to review the Integrated Reporting Program documents which involved ASME Code activities.

# 14.0 INSPECTION AND TEST AND AUDIT PERSONNEL QUALIFICATION

## 14.1 Qualification of Inspection and Test Personnel

Inspection and test personnel shall be qualified to procedures which will comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-1 and meet the intent of Appendix 2A-1, and shall include requirements for qualification, personnel selection, indoctrination, training, determination of initial capability and provisions for periodic evaluation of performance. The certification of qualification shall document as a minimum, the employer's name, identification of person being certified, activities certified to be performed, basis used for certification, results of periodic evaluation, results of required physical examinations, and the signature of the person responsible for such certification.

## 14.2 Qualification of Audit Personnel

Auditors and Audit Team Leaders shall be qualified to procedures which will comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-3. Audit personnel shall have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited. The Audit Team Leader program shall include requirements for assessing written and oral communication skills, training, audit participation, and a demonstration of proficiency, such as an examination.

The certification of qualification shall document the employer's name, Audit Team Leader's (or Auditor's) name, date of certification or recertification, basis of qualification, and signature of the Nuclear Oversight Manager, or designee. The qualification and certification records for each Auditor and Audit Team Leader shall be maintained and updated annually.

## 15.0 AUDITS (NCA 4134.18)

Audits are performed as required by the Audit Schedule. The audit frequency for ASME Code activities shall be commensurate with the schedule of activities and shall be such that an annual audit of all Code activities is performed at each station. Audits are performed using a preapproved checklist. The audit team is identified prior to the beginning of each audit. For audits related to Code activities, the Audit Team Leader signs the audit report. The Company provides personnel to accompany the ANI during required audits in accordance with the Code and ASME N626. These personnel have responsibility for ASME Code and Quality Assurance Program compliance.

## 16.0 LEVEL III

The Company maintains a Chief Level III for NDE. He is qualified in accordance with the SPPM Volume I. He in turn has delegated certain specific discipline duties to Deputy Level III's. All such delegations and their scope are documented.

Administrative Level III's may be appointed for non-NDE qualification and certification activities. Such appointments will be documented and the scope of such appointments will be defined.

## 17.0 AUTHORIZED NUCLEAR INSPECTOR (NCA 5000)

The Company maintains a valid, continuing agreement with an accredited Authorized Inspection Agency to provide inspection and audit services involving Section III and XI nuclear work. The Authorized Inspection Agency is required to perform all of the functions and maintain the records required in the applicable ASME N626 series of Standards and the ASME Code. The Company shall notify ASME and the enforcement authority whenever this written agreement is cancelled or changed to another Authorized Inspection Agency.

## 17.1 Relationship

The Authorized Nuclear Inspector's primary contact is the station Quality Control Superintendent. He also has ready access to the Onsite Quality Verification Superintendent who monitors and audits maintenance and modification work. At the construction sites, the primary contact is with the Site Engineering and Construction Manager, or designee.

## 17.2 Documents Available to the Authorized Nuclear Inspector (NCA 3252)

The Authorized Nuclear Inspector and any ASME survey team shall be afforded full access to procedures, procurement specifications, drawings, design specifications, construction specifications, design reports and documentation reviews of the design reports and construction reports involved in ASME Code work. Design Specifications shall be made available to the Authorized Inspector prior to fabrication of items requiring ASME Code stamp. The Authorized Nuclear Inspector, and Supervisor, shall have free access to the Company's and Manufacturer's and Supplier's facilities at all times while work on the item is being performed. He shall be afforded the opportunity to perform required N626 audits within the limitations of station safety, security and health regulations. He shall be provided adequate facilities including a drawer of a file cabinet, a desk, and a chair, plus a copy of the Company's Quality Assurance Manual.

The Authorized Nuclear Inspector shall be provided access to audit personnel qualification and training records as well as audit records for ASME work. Audit records include the audit plan, report, written replies, and the record of completion of corrective action.
The Authorized Nuclear Inspector shall also have access to procedure development and procedure qualifications performed by a contractor.
The Authorized Nuclear Inspector will notify the Quality Control Supervisor or the Site Engineering and Construction Manager, as applicable, of any problem.

The Authorized Nuclear Inspector may request that ASME Data Reports, Certified Material Test Reports, and Certificates of Compliance be submitted to him to facilitate his monitoring of Code requirements. As a minimum, these documents shall be submitted to the Authorized Nuclear Inspector prior to installation of the item(s). Also, a copy of this Quality Assurance Manual shall be filed with the Authorized Inspection Agency. A copy of the design report and any associated review documentation for the design report shall be made available to the regulatory and enforcement authorities having jurisdiction at the site of the nuclear power plant before it is placed in service.

## 17.3 Choosing of Hold Points

The ANI/ANII shall be kept informed on relevant aspects of the current Maintenance/Modification work packages involving ASME Code work. He shall be provided ample time during the work package approval process to insert his hold points in the work packages relating to Code work. He has the authority to place any item on hold if the Code is being violated. Completion of ANI/ANII review will be indicated by signature on the work package approval documents.

Additional records required by the Authorized Nuclear Inspector to assure Code compliance will be supplied by the Company upon request. Unlimited access to all facilities and activities shall be afforded the Authorized Inspection Agency.

## 17.4 NDE and the Authorized Nuclear Inspector

Detailed nondestructive examination procedures are made available for review and acceptance by the Authorized Nuclear Inspector prior to their use in ASME Code work. Nondestructive examination personnel files are available to the Authorized Nuclear Inspector upon request. He may require requalification of either procedures or personnel when there is specific reason to question the qualification of either.

### 17.5 Checklist of Final Documents and Data Reports

When the final documents and Data and Construction Reports have been prepared, the entire package shall be made available to the Authorized Nuclear Inspector. When the Authorized Nuclear Inspector is satisfied that the work is satisfactorily completed and ready to be stamped, he shall certify the Data and Construction Reports by signature. For Division 2 work, the Authorized Inspector shall assure that the Designer has signed such Data Reports and Construction Reports prior to affixing his signature.

### 17.6 Documents in Electronic Media

As technology advances, some or all work control and supporting documents may exist in all-electronic format. Permanent records required by the Code and by the jurisdiction will be retained in hard copy, including original pen and ink signatures, and will be afforded the same protection required for permanent records. When on-line electronic approval is utilized, measures will be established to assure that only those persons authorized to use and apply electronic approval grant such approval. Access control measures will be established to prevent unauthorized alteration or modification of documents controlling work. The Authorized Inspector will be afforded the same opportunities to review and insert Hold Points as afforded for paper-based documents.

## 18.0 CONTROL OF COMPUTER SOFTWARE

Control of computer software and resultant output that is used in the performance of design is procured, or developed, and maintained in accordance with the requirements of NQA-1 Supplements 3S-1 and Supplement 11S-2. Quality Procedure QP 3-54 is the implementing procedure for the control of computer software. QP 3-54 generally follows the intent of Part 2.7 to NQA-2. Computer program outputs, when appropriately controlled, may be used as design inputs and are subject to the requirements of NQA-1, Supplement 3S-1.

# FIGURE I

| | COMMONWEALTH EDISON QUALITY REQUIREMENTS | ASME III NCA - | 10CFR50 APPENDIX B |
|---|---|---|---|
| 1.0 | Organization | 4134.1 | I |
| 2.0 | Quality Assurance Program | 4134.2 | II |
| 3.0 | Design Control | 4134.3 | III |
| 4.0 | Procurement Document Control | 4134.4 | IV |
| 5.0 | Instructions, Procedures and Drawings | 4134.5 | V |
| 6.0 | Document Control | 4134.6 | VI |
| 7.0 | Control of Purchased Material Equipment and Services | 4134.7 | VII |
| 8.0 | Identification and Control of Materials, Parts and Components | 4134.8 | VIII |
| 9.0 | Control of Special Processes | 4134.9 | IX |
| 10.0 | Inspection | 4134.10 | X |
| 11.0 | Test Control | 4134.11 | XI |
| 12.0 | Control of Measuring and Test Equipment | 4134.12 | XII |
| 13.0 | Handling, Storage and Shipping | 4134.13 | XIII |
| 14.0 | Inspection, Test and Operating Status | 4134.14 | XIV |
| 15.0 | Nonconforming Materials, Parts or Components and Operations | 4134.15 | XV |
| 16.0 | Corrective Action | 4134.16 | XVI |
| 17.0 | Quality Assurance Records | 4134.17. 3280 | XVII |
| 18.0 | Audits | 4134.18 | XVIII |

# FIGURE II

## ASME Section III Division 2 Responsibilities Table

| DOCUMENT | PREPARED BY | REVIEWED BY | CERTIFIED BY | APPROVED[3] BY | PROVIDED BY | MADE AVAILABLE ON REQUEST |
|---|---|---|---|---|---|---|
| Design Specification NCA 3250) | D[1] | D,O | D[1] | – | O,D,C,K,I,J | – |
| Construction Specification (NCA 3340) | D | O | D | O | O,C,F,M[2],K | I,J |
| Design Drawings (NCA 3340) | D | O | D | O | O,C,F,M[2] | I,J,K |
| Design Reports (NCA 3350) | D | D | D | O | O,K,L | I,J |
| Construction Procedures (NCA 3351) [Note B] | C,F | D,C | – | D,C | D,O,C,L | I,J,K |
| Certified Material, Test Reports or Certificates of Compliance (CB-2130, CC-2130) [Note B] | M | C or D,F | M | – | C,F,O | J,I,D |
| Shop and Field Drawings NCA 3452 (Shop)<br>(Field)<br>[Note B] | F<br>C,F | D<br>C,D | –<br>– | D<br>C,D | C,F<br>C,F | I<br>I |
| Construction Reports (NCA 3454) | C | D | D,I | P,O | D,O,J,K | I,J |
| Data Report C-1 (NCA 8410) | C | – | D,C,I,O | – | O | I,J |
| Data Report N-2 (NCA 8410) | F | – | F,I | – | C | I,J |
| Data Report N-3 (NCA 8420) | O | – | K,I | – | J | – |

O - CECo Project Engineering (Owner or Designee)
D - Designer (A-E)
C - Constructor (CECo Project Construction)
F - Contractor to CECo Project Construction or another Constructor (Fabricator)
M - Material Manufacturer
I - Authorized Inspector
J - Jurisdictional Authority
K - CECo Nuclear Engineering Department (Owner)
L - CECo Construction Department
P - Project Manager

* Will be advised of the document availability.

(1) Owners designee
(2) Provided when necessary to permit the Material Manufacturer to perform his duties in conformance with the Code.
(3) Approval indicates an assurance that the ASME requirements were carried out by the designated party.

NOTES: (A) CECo Project Construction is the Construction Manager who will contract with contractors and CECo will have overall responsibility.

(B) Information provided to the indicated participants when required to satisfy their designated responsibilities under this Section. Other information provided only by specific arrangement with the Owner. Participants are required to furnish only such information as is necessary to permit the recipient to perform his duties in conformance with this Section. Other information may be furnished at the discretion of the responsible parties.

FIGURE III

Facsimile of Mandatory Stamping and/or Nameplate Marking

National Board Marking Area

N NAT'L BD. _____
(National Board Serial Number)

Certified By _____

_____

_____

_____

(See applicable Section of ASME Code for required marking)

ASME Marking Area

Approximately 5 ½" L X 3 ½" H

## ADDENDUM 1

A pilot program of identifying and resolving all nonconforming and discrepant conditions under the Integrated Reporting Program (IRP) will be utilized at Quad Cities Station.

This addendum allows Quad Cities' to extend the use of the IRP to nonconforming hardware or in Code-related nonconforming conditions. This usage will be in variance with ASME Interface 13.0, QP 15-54 (2.0 SCOPE), and QP 15-1, 15-2, 15-51, 15-52, and 15-53. The pilot program will remain in effect for a period of 12 months effective 8/17/93 and ending 8/17/94.

The IRP will be implemented locally by procedures QCAP 2300-20, 2300-21, 2300-22, 2300-24, and 2300-25 - all Revision 0. These procedures meet the intent and requirements of Sections 15 & 16 of the Quality Assurance Topical Report, Section 13.0 of the ASME Interface, and QP 15-54. The Authorized Inspection Agency will be provided the above listed Quad Cities procedures (and subsequent revisions) for their review and acceptance as being equivalent to the controls described in the existing Quality Procedures (QPs).

An analysis of this pilot program will be made and the results used in determining the nature of those changes to the base program that are necessary to allow extension to other stations.