YANKEE ATOMIC ELECTRIC COMPANY

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YANKEE ATOMIC ELECTRIC COMPANY

OPERATIONAL QUALITY ASSURANCE PROGRAM

YOQAP-I-A

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AMENDMENT/REVISION SHEET

Revision No.	Date	Reason
0 (Amendment 1)	12/10/76	To address questions submitted by letter from NRC (K. R. Goller) to L. H. Heider (11/1/76).
0 (Amendment 2)	1/13/77	To address questions submitted by letter from NRC (K. R. Goller) to L. H. Heider (12/28/76).
1	9/15/77	To address organizational, programmatic, and editorial changes.
2	11/1/77	To address organizational changes.
3	11/25/77	To address organizational changes at Vermont Yankee.
4	1/13/78	To address combined inspection numbers 50-29/77-20; 50-271/77-15; and 50-309/77-16 unresolved item 4.a.
5	1/30/78	To address change in exception for ANSI N45.2.3-1973.
6	10/19/78	To address exceptions to ANSI N45.2.2-1972.
6 (Amendment 1)	3/29/79	To resolve items submitted by letter from NRC (W.P. Haass) to L. H. Heider (3/6/79).
7	9/11/79	To address changes to Yankee Rowe (Appendix D) and Vermont Yankee (Appendix E) Safety Classifications.
8	4/4/80	To address organizational changes.
9	3/9/81	To address organizational changes.

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AMENDMENT/REVISION SHEET

Revision No.	Date	Reason
10	4/3/81	To add "Packaging of Radioactive Materials" and "Fire Protection of Safety-Related Areas" to "Other Items Requiring Quality Assurance".
11	3/1/82	To resolve items submitted by letter from NRC (W.P. Haass) to W.P. Johnson (6/10/81).

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POLICY STATEMENT

Operational Quality Assurance Program

It is the policy of the Yankee Atomic Electric Company that its Operational Quality Assurance Program shall comply with the requirements of the Code of Federal Regulations Title 10 Part 50 Appendix B with respect to the operation and maintenance of, and changes to those nuclear generating facilities subscribing to the Yankee Atomic Electric Company Operational Quality Assurance Program. The Program shall, in addition, address ANSI Standard N18.7 - 1976, and its referenced standards; and certain Regulatory Guides as specified in Section II "Quality Assurance Program" of the Topical Report.

Under the Program, the President is the final management authority responsible for assuring that this policy statement and the Operational Quality Assurance Program are implemented within the Yankee Atomic Electric Company.

The Senior Vice President is responsible for implementation of the Program within the Environmental Engineering and Nuclear Engineering Departments.

The Vice President is responsible for implementation of the Program within the Quality Assurance Department. He provides for personnel performing Quality Assurance functions to have direct access to management levels.

The Vice President - Operations is responsible for implementation of the Program within the Plant Engineering and Operations Departments.

The Treasurer is responsible for implementation of the Program within the Fuel Management Department.

The Director of Quality Assurance is responsible for establishment, control and distribution of the Operational Quality Assurance Program and revisions thereto. He is responsible for establishing policies under which the Nuclear Services Division Quality Assurance Department works.

The Manager of Operational Quality Assurance shall be responsible for ensuring that the Program is implemented for all activities requiring quality assurance. The Operational Quality Assurance staff shall be responsible for auditing the program as necessary and inspecting activities required by the Program to assure compliance with its requirements. The Operational Quality Assurance staff shall have the authority and organizational freedom necessary to meet the requirements of 10CFR50, Appendix B.

The Plant Superintendent/Manager shall be responsible for the day to day implementation of the Program's procedural requirements at the plants.

The Nuclear Safety Audit and Review Committee shall review the adequacy and effectiveness of the Program semiannually. Any discrepancies in the implementation of this policy or the Program that are revealed during the review and that require corporate action for correction, will be reported to the cognizant corporate officer together with appropriate recommendations.

Implementation of this policy is necessary in order to enhance the reliability and safety of the nuclear generating facilities. Each person involved in activities affecting the quality of structures, systems, and components that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public, shall be responsible for assuring quality in his own work, and for compliance with the requirements of the Program. The Operational Quality Assurance Program is a document which must be adhered to by all responsible organizations and individuals.

James E. Tribble
President

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I. ORGANIZATION

A. SCOPE

This section of the Operational Quality Assurance Program describes the duties and responsibilities of the personnel involved in establishing and executing the Operational Quality Assurance Program.

B. RESPONSIBILITY

The responsibility for design, redesign, evaluation and operation of the Plant rests with the Yankee Atomic Electric Company Nuclear Services Division and Vermont Yankee Nuclear Power Corporation. The responsibility for developing and implementing the Operational Quality Assurance Program is vested in the President of the Yankee Atomic Electric Company. He has delegated certain areas of authority for the development and inplementation of certain phases of the Program as set forth in the following paragraphs of this section.

The Nuclear Services Division Quality Assurance Department, reporting to the Vice President, has the organizational responsibility for the continuing review and audit of the implementation of the Operational Quality Assurance Program.

C. ORGANIZATIONAL RELATIONSHIPS

Yankee Atomic Electric Company lines of authority of all personnel involved in the implementation of the Operational Quality Assurance Program are shown in Figures 1 and 2. Interfacing between the Plant and the Yankee Nuclear Services Division is

provided by the Manager of Operations and his staff.

D. QUALITY ASSURANCE PROGRAM RESPONSIBILITIES

Yankee - Nuclear Services Division

1. President

a. Assumes and maintains overall responsibility for the Operational Quality Assurance Program.

b. Delegates to the Director of Quality Assurance the responsibility for establishment, control and distribution of the Operational Quality Assurance Program, and revisions thereto.

c. Establishes and enforces company policies in the area of Operational Quality Assurance.

d. Establishes and implements an organization capable of and directed toward a proper Operational Quality Assurance Program.

e. Resolves disputes between Quality Assurance/Quality Control personnel and other organizations, involving quality.

2. Senior Vice President

a. Reports to the President.

b. Provides for implementation of the Program within the Environmental Engineering and Nuclear Engineering Departments.

c. Approves all changes to the Operational Quality Assurance Program.

3. Vice President

a. Reports to the President.

b. Establishes the qualification requirements for the principal Quality Assurance management positions to assure competence commensurate with responsibility. See Appendix A.

c. Approves all changes to the Operational Quality Assurance Program.

d. Reviews or provides company policy relative to practices conducted at the Plant and Yankee Nuclear Services Division.

e. Authorizes personnel performing Quality Assurance functions to have direct access to management levels which will assure accomplishment of quality-affecting activities.

4. Vice President - Operations

a. Reports to the President.

b. Provides for implementation of the Program within the Plant Engineering and Operations Departments.

c. Approves all changes to the Operational Quality Assurance Program.

5. Treasurer

a. Reports to the President.

b. Provides for implementation of the Program within the Fuel Cycle Department.

6. Manager of Operations - Yankee

a. Reports directly to the Vice President - Operations.

b. Provides, through the Operations Department, for independent operational review and/or approval for selected plant repairs, and all changes.

c. Provides, through the Operations Department, for review and approval of training programs, plant procedures, drawings, specifications and purchase requests.

d. Provides, through the Operations Department, for interfacing between Yankee and the Yankee Nuclear Services Division.

e. Provides for and coordinates review of industry operating problems with the aim of minimizing likelihood of occurrence at the plant.

f. Evaluates plants' position of In-Plant audit discrepancies and prepares "Implementation Directives" to the plant.

g. Ensures that applicable Program procedures are implemented.

h. Reviews all changes to the Operational Quality Assurance Program.

7. Manager of Operations - Vermont Yankee

a. Reports to the Vice President - Operations.

b. Provides, through the Operations Department, for independent operational review and/or approval for selected plant repairs, and all changes.

c. Provides, through the Operations Department or Yankee Nuclear Services Division, for review and approval of training programs, plant procedures, drawings, specifications, and purchase requests.

d. Provides, through the Operations Department, for interfacing between the Plant and the Yankee Nuclear Services Division.

e. Evaluates Plants' position of In-Plant audit discrepancies and prepares "Implementation Directives" to the Plant.

f. Ensures that applicable Program procedures are implemented.

g. Reviews all changes to the Operational Quality Assurance Program.

8. Director of Quality Assurance

a. Reports directly to the Vice President.

b. Establishes policies under which the Nuclear Services Division Quality Assurance Department functions.

c. Provides for establishment of, and control and distribution of the Operational Quality Assurance Program and revisions thereto.

d. Provides for implementation of the Program within the Quality Assurance Department.

e. Approves all changes to the Operational Quality Assurance Program.

f. Provides for a periodic review of the Operational Quality Assurance Program to determine the adequacy and effectiveness of the Program.

g. Provides, through Operational Quality Assurance, for independent verification of plant operation by individuals or groups who do not have direct responsibility for performing the work, to assure that applicable approved procedures, specifications, licenses and safety regulations are satisfied.

h. Ensures that personnel performing Quality Assurance functions have sufficient authority and organizational freedom to:

i. identify quality problems,

ii. initiate, recommend, or provide solutions through designated channels, and

iii. verify implementation of solutions.

i. Provides for review of and compliance with federal and state regulations and standards for nuclear power facilities.

9. Manager of Operational Quality Assurance

a. Reports directly to the Director of Quality Assurance.

b. Assures that the Operational Quality Assurance Program satisfies the requirements of 10CFR50 Appendix B and ANSI N18.7-1976.

c. Provides, through Operational Quality Assurance, for the review of design changes for specification and adequacy of quality requirements.

d. Provides, through Operational Quality Assurance, for the evaluation, inspection and/or surveillance of contractor/vendor activities for operating plants to assure effective lines of communication and compliance with the applicable criteria of 10CFR50 Appendix B and ANSI N18.7-1976.

e. Provides for the inspection, surveillance and/or audit of activities pertaining to plant repairs, and/or changes.

f. Provides assistance as required to train, retrain and/or qualify plant and Operational Quality Assurance personnel in quality control and audit techniques.

g. Ensures through verification that the Program is implemented for all activities requiring Quality Assurance.

h. Provides for the stoppage of unsatisfactory work; and for the control of further processing, delivery, or installation of nonconforming material.

i. Directs, through Operational Quality Assurance, the independent verification of plant operational activities to assure that applicable approved procedures, specifications, licenses, and safety regulations are satisfied.

j. Ensures that the Program is modified and/or revised as standards, regulations and experience dictate.

10. Plant Engineering Manager

a. Reports directly to the Vice President - Operations.

b. Provides for the Plant Engineering review of design changes, material/service purchase requests, drawings, specifications and appropriate procedures.

c. Provides, through Plant Engineering, for the quality assurance/quality control standards and/or requirements on all applicable documents.

d. Provides, through Plant Engineering, for assistance in the training of plant personnel in areas of redesign.

e. Coordinates the Plant Engineering requirements necessary to support changes related to the operation of the plant.

11. Operational Quality Assurance Coordinator

a. As a member of the Nuclear Services Division Staff, coorinates the activities of the on-site representative of the Quality Assurance Department.

b. Reports directly to the Manager of Operational Quality Assurance.

c. Reports to the Manager of Operational Quality Assurance any discrepancy or variance from the Operational Quality Assurance Program.

d. Provides for the performance of an informal surveillance program to assure compliance with the provisions of the Operational Quality Assurance Program.

e. Schedules and coordinates the In-Plant Audit Program including the follow-up of audit discrepancies.

f. Provides, through Operational Quality Assurance, for the preparation of audit check lists which encompass the 18 criteria of 10CFR50 Appendix B and ANSI N18.7-1976.

g. Reviews the implementation of the Operational Quality Assurance Program for the purpose of improving the quality of Plant and Nuclear Services Division activities.

h. Provides, through Operational Quality Assurance, for a status of audits and recommendations concerning the implementing activities of the Operational Quality Assurance Program.

i. Establishes and maintains communication with Plant Management and the Nuclear Safety Audit and Review Committee in regard to activities necessary for implementation of the Operational Quality Assurance Program.

j. Provides for attendance at Plant Operations Review Committee meetings, in an advisory capacity, on matters relevant to continuation of a comprehensive Operational Quality Assurance Program.

12. Director of Environmental Engineering

a. Reports directly to the Senior Vice President.

b. Follows and reviews radiation protection programs and activities at the plant.

c. Provides for technical assistance to the plant on matters of radiological protection.

d. Establishes and maintains radiological environmental surveillance programs concerning radioactive effluents from the plant.

e. Establishes Emergency Plan pursuant to state and federal regulatory requirements.

f. Reviews the plant meteorological monitoring data.

g. Coordinates the engineering requirements necessary to support changes related to operation of the plant.

13. Fuel Cycle Manager

a. Reports directly to the Treasurer.

b. Performs fuel cycle and economic studies requested by management.

c. Provides for the general supervision and coordination of all Core Component Design and Procurement, Nuclear Material Procurement and Fuel Cycle Economic activities.

d. Ensures that the Operational Quality Assurance Program and the applicable procedures are implemented within the department.

e. Issues bid invitations, evaluates proposals, and negotiates contracts for fuel cycle services and related material requirements.

f. Coordinates the fuel cycle requirements necessary to support changes related to operation of the plant.

14. Nuclear Engineering Manager

a. Reports directly to the Senior Vice President.

b. Performs nuclear engineering and economic studies requested by management.

c. Provides for the general supervision and coordination of reactor physics, safety analysis, and research and engineering development activities.

d. Ensures that the Operational Quality Assurance Program and the applicable procedures are implemented within the department.

e. Coordinates engineering analysis requirements necessary to support changes related to operation of the plant.

Plant - Yankee

1. Plant Superintendent

a. Reports directly to the Manager of Operations.

b. Acts as Chairman of the Plant Operation Review Committee with authority and responsibility as established in the Technical Specifications of the plant operating license.

c. Directly responsible for the safe, orderly and efficient operation of the Plant, and for compliance of operations with the requirements of the operating license and applicable State and Federal laws and regulations.

d. Directs the on-site implementation of the Operational Quality Assurance Program, Security Program and Fire Protection Program.

e. Directs Plant operations, maintenance, repair, refueling, design changes, radiological, and chemistry controls.

f. Directs the control and surveillance of all special nuclear material at the plant site.

g. Directs necessary on-site training and/or retraining programs.

h. Provides information and reports to the Yankee Nuclear Services Division and the Nuclear Safety Audit and Review Committee as required and as directed by the Manager of Operations.

2. Assistant Plant Superintendent

a. Reports directly to the Plant Superintendent.

b. Acts as Vice Chairman of the Plant Operation Review Committee with authority and responsibility as established in the Technical Specifications of the Plant operating license.

c. Acts in the place of the Plant Superintendent during his absence with the authority and responsibility thereof.

d. Responsible for the safe, orderly, and efficient operation of the Plant and for compliance of operations with the requirements of the operating license and applicable State and Federal laws and regulations.

e. Responsible for Plant operations, maintenance, repair, and refueling.

f. Directs Plant Securities' activities.

g. Provides information and reports as directed by the Plant Superintendent.

3. Technical Director

a. Reports directly to the Plant Superintendent.

b. Responsible for the implementation of the Operational Quality Assurance Program.

c. Responsible for the implementation of the Operational Quality Assurance Program and the Fire Protection Program.

d. Responsible for the follow of design changes, radiological and chemistry controls, and control and surveillance of all special nuclear material at the plant site.

e. Directs the activities of the Plant technical departments.

f. Responsible for carrying out Plant technical activities pursuant to applicable State, Federal, and the operating license requirements.

g. Provides information and reports as directed by the Plant Superintendent.

4. Technical Services Manager

a. Reports directly to the Technical Director.

b. Coordinates Plant Quality Assurance activities with the Manager of Operations and his staff.

c. Coordinates the reviews and updates of Plant prints, drawings and specifications.

d. Coordinates Plant Fire Protection activities.

e. Schedules and prepares specified Plant reports and records.

f. Coordinates and transmits information concerning Plant changes to the Manager of Operations and his staff.

5. Plant Operations Manager

a. Reports directly to the Assistant Plant Superintendent.

b. Conducts plant operations in accordance with approved documents and specifications.

c. Provides for system surveillance and operational testing.

d. Prepares documents outlining system functions and operating modes.

e. Assures that personnel under his supervision perform their duties according to applicable licenses, specifications, safety rules and regulations.

f. Provides Maintenance Requests for the repair or replacement of defective parts and/or components.

g. Verifies the operability of systems and/or components following maintenance, or changes by providing for the performance of written test documents which incorporate the requirements and acceptance criteria contained in applicable design documents.

h. Provides for the safe handling of core and reactor components during refueling operations.

i. Acts in the place of the Plant Superintendent/Assistant Plant Superintendent in the absence of both, with all the authority and responsibility thereof, as permitted by Technical Specifications.

6. Plant Chemistry Manager

a. Reports directly to the Technical Director.

b. Directs maintenance of water conditioning in the primary and secondary plant as per specifications and/or documented and authorized recommendations.

c. Directs a program to ascertain the radioactivity levels of liquids, gases and solids as required.

d. Directs the review and interpretation of chemistry test results.

e. Directs the documentation and maintenance of chemistry records for systems operations, refueling, plant modifications and/or additions which will reflect the degree of preventive maintenance required and/or in use as set forth in Technical Specifications, standards, and codes.

7. Reactor Engineering Manager

a. Reports directly to the Technical Director.

b. Analyzes data from physics, thermodynanic and nuclear tests to verify plant operating parameters, guidelines, procedures and adherence to Technical Specifications.

c. Prepares and maintains refueling procedures relative to core components handling and inspection.

d. Prepares reactor physics test and core parameter measurement procedures.

e. Provides supplemental technical information for new, modified and/or existing thermodynamic and data processing equipment.

f. Maintains core component history file of all fuel, control rods, sources and incore detectors.

g. Accounts for all special nuclear material at the plant site.

h. Coordinates plant Inservice Inspection Program.

8. Plant Maintenance Manager

a. Reports directly to the Assistant Plant Superintendent.

b. Directs the activities of the Maintenance and Instrumentation and Control Departments.

c. Responsible for plant maintenance, repairs, and design changes and for compliance of maintenance activities to applicable State, Federal, and operating license requirements.

9. Administrative Services Manager

a. Reports directly to the Plant Superintendent.

b. Supervises the Store Keeper who is responsible for:

1) Preparation of requisition for purchase orders.

2) The receipt, handling and storage of materials and equipment.

3) Administering a system of material and equipment identification.

4) Maintaining a system which provides traceability and retrievability of Quality Assurance documentation for purchased materials.

c. Coordinates the review, revision, and distribution of procedures.

d. Directs the operations of the Plant Document Control Center for the retention of specified Quality Assurance records and reports.

e. Maintains and dissiminates information regarding codes, criteria, standards, guidelines, and policy to applicable plant personnel.

f. Maintains Plant listings of design changes.

10. Radiation Protection Manager

a. Reports directly to the Technical Director.

b. Responsible for all phases of the ALARA and the Radiation Protection Program to assure that these programs meet Plant and governmental standards.

c. Responsible for maintaining the Personnel Exposure Record System.

d. Responsible for radioactive material shipments and receipts pursuant to Plant and governmental regulations.

e. Coordinates and implements the Emergency Plan.

11. Training Manager

a. Reports directly to the Plant Superintendent.

b. Responsible for all phases of Licensed Operator training.

c. Coordinates scheduling, and responsible for documentation of General Employee Training.

d. Responsible for all phases of Fire Protection training.

e. Responsible for the Plant's New Employee Indoctrination Program.

Plant - Vermont Yankee

1. Plant Manager

a. Reports to the Manager of Operations.

b. Directs the on-site implementation of the Operational Quality Assurance Program.

c. Prescribes and directs the development of Plant procedures, instructions, schedules, and programs as necessary to assure the safe and dependable operation of the facility.

d. Maintains a thorough knowledge of, and assures compliance with, the regulatory requirements for operating a nuclear power plant.

e. Directs the preparation and maintenance of power plant records, reports, and logs.

f. Acts as Chairman of the Plant Operations Review Committee with authority and responsibility as established in the Technical Specifications of the plant operating license.

g. Provides information and reports to the Yankee Nuclear Services Division as directed by the Manager of Operations.

h. Provides information and reports to the Nuclear Safety Audit and Review Committee as required and as directed by the Manager of Operations.

i. Directs the control and surveillance of all special nuclear material on site.

j. Direct the implementation of training/retraining programs as required by the Plant license, regulations, or applicable standards; and as necessary to assure safe work practices and compliance with standard operating practices, license and Technical Specifications, safety rules, and applicable regulations.

2. Assistant Plant Manager

a. Reports to the Plant Manager.

b. Carries out all duties and responsibilities of the Plant Manager in his absence.

c. Assists in the planning, scheduling, coordination and direction of the activities of employees engaged in the installation, inspection and maintenance of all equipment, buildings, and structures.

d. Assists in the development of Plant procedures, instructions, schedules and programs as necessary to assure the safe and dependable operation of the facility.

e. Maintains a thorough knowledge of, and assures compliance with the regulatory requirements for operating a nuclear power plant.

f. Directs the preparation and maintenance of power plant records, reports, and logs as required.

g. Acts as Vice-Chairman of the Plant Operations Review Committee with responsibilties as established in the Technical Specifications of the plant operating license.

h. Provides information, reports, and records as directed by the Plant Manager.

i. Assists in directing the establishment of safe work practices, and the training and instruction of plant personnel in the observance of standard operating practices, NRC license and technical specifications, safety rules, and regulations.

3. Operations Superintendent

a. Reports to the Plant Manager.

b. Acts as Vice-Chairman of the Plant Operations Review Committee with responsibilities as established in the Technical Specifications of the plant operating license.

c. Assists in the planning, scheduling, coordination, and direction of activities of employees engaged in the installation, operation, inspection, and maintenance of all equipment, buildings, and structures as appropriate.

d. Assists in the development of Plant procedures, instructions, schedules, and programs as necessary to assure the safe and dependable operation of the facility.

e. Maintains a thorough knowledge of, and assure compliance with, the regulatory requirements for operating a nuclear power plant.

f. Directs the preparation and maintenance of power plant records, reports, and logs as applicable.

g. Provides information, reports, and records as directed by the Plant Manager.

4. Technical Services Superintendent

a. Reports to the Plant Manager.

b. Acts as Vice-Chairman of the Plant Operations Review Committee with responsibilities as established in the Technical Specifications of the plant operating license.

c. Assists in the planning, scheduling, and direction of activities of employees engaged in plant design changes and alterations.

d. Assists in the development of Plant procedures, instructions, schedules, and progress as necessary to assure the safe and dependable operation of the facility and the safe conduct of refuel operations.

e. Maintains a thorough knowledge of, and assures compliance with, the regulatory requirements of a nuclear power plant.

f. Directs the preparation and maintenance of power plant records, reports, and logs as applicable.

g. Provides information, reports, and records as directed by the Plant Manager.

5. Administrative Supervisor

a. Reports to the Assistant Plant Manager.

b. Provides overall coordination and supervision for following supervisory personnel in implementing the Operational Quality Assurance Program.

1. Stores & Purchasing Supervisor

2. Document Control Coordinator

c. Participates in the establishment of Plant policies covering his/her area of responsibility.

d. Consistent with plant policies and applicable instructions, institutes necessary programs, issues instructions, originates procedures and insures department administrative systems exist, such that the responsibilities assigned to administrative functions are executed effectively and efficiently in accordance with company intent. Ensures that necessary documentation is prepared, reviewed, approved, and properly filed to establish that department activities meet all requirements.

e. Consistent with plant policies and applicable instructions, organizes department functions and activities, assigns duties, and schedules personnel to accomplish administrative department activities. Reviews and supervises all department activities.

f. Ensures that corporate programs regarding procurement policies and procedures are properly carried out and adequately documented for all necessary audits.

g. Completes special projects requested by the Plant Superintendent.

h. Coordinates the review, revision, and distribution of Plant procedures.

i. Supervises implementation of the Plant Technical Filing System.

j. Directs the implementation and control of Document Control System.

6. Operations Supervisor

a. Reports to the Operations Superintendent.

b. Fulfills duties and responsibilities similar to and/or as described in the FSAR and is directly in charge of the Operations Department.

c. Has the responsibility and authority for insuring the safe and efficient operation of the plant and its supporting systems in accordance with applicable station licenses, Technical Specifications, procedures, instructions, established company policy and safety rules.

d. Consistent with plant policies and applicable instructions, institutes necessary programs, issues instructions, originates procedures and insures that department administrative systems exist such that the responsibilities assigned to the Operations Department are executed effectively and efficiently in accordance with company intent. Insures that necessary documentation is prepared, reviewed, approved, and properly processed to verify that department activities meet all established requirments.

e. Maintains current status of Operations Department activities and requirements. Prepares and maintains, plans and schedules for department commitments such as personnel training, retraining and qualification, preventive maintenance, material procurement, plant modifications, etc.

f. Insures that all records, tests, reports, and logs maintained by the Operations Department are properly reviewed and approved.

g. Insures that all Operations Department personnel in a training status are actively pursuing the established program and that their performance is being adequately evaluated.

h. Reviews all Operations Department procedures to insure that they are current, accurate, and approved.

i. Implements aspects of the Plant Quality Assurance Program which relate to the activities of the Operations Department.

7. Instrument & Control Supervisor

a. Reports to the Assistant Plant Manager.

b. Fulfills duties and responsibilities similar to and/or as described in the FSAR and is directly in charge of the Instrument and Control Department.

c. Plans, schedules and supervises the activities of the Instrumentation and Controls Department. Such activities to include; installation, inspection, calibration, adjustment, maintenance, and repair of the plant instrumentation and controls.

d. Coordinates the activities of the Instrument and Controls Department with all other plant functions.

e. Establishes and directs a program of preventive maintenance, calibration, and surveillance testing as required by the plant license, approved plant procedures, or other plant requirements.

f. Establishes calibration techniques, frequencies, and records as necessary to assure reliable indication and control for plant system parameters.

g. Establishes and directs a program of departmental training that will assure a staff of Instrumentation and Controls personnel capable of safely and efficiently performing their duties in accordance with established practices, procedures, and regulations.

h. Prepares and/or supervises the preparation of reports, logs, and historical records as required.

i. Implements those aspects of the Plant Quality Assurance Program which relate to the activities of the Instrumentation and Controls Department.

j. Develops and maintains, in accordance with approved plant procedures, the procedural controls necessary to fulfill the above responsibilities.

8. Maintenance Supervisor

a. Reports to the Assistant Plant Manager.

b. Fulfills duties and responsibilities similar to and/or as described in the FSAR and is directly in charge of the Maintenance Department.

c. Is responsible for all electrical and mechanical maintenance activities throughout the Plant with the exception of Instrumentation and Control maintenance activities.

d. Consistent with plant policies and applicable instructions, institutes necessary programs, issues instructions, originates procedures, and insures that department administrative systems exist such that the responsibilities assigned to the Maintenance Department are executed effectively and efficiently in accordance with company intent. Insures that necessary documentation is prepared, reviewed, approved, and properly filed t establish that department activities meet all requirem..

e. Consistent with plant policies and applicable instructions, organizes department functions and activities, assigns duties, and schedules personnel to accomplish department requirements. Reviews and supervises all department assignments.

f. Maintains current status of department activities and requirements. Prepares and maintains long-range plans and schedules for department commitments such as personnel training and qualification, preventive maintenance, material procurement, plant modifications, etc.

g. Staffs and trains Maintenance Department personnel.

h. Establishes and maintains equipment history reocrds.

i. Selects and orders materials and spare parts in areas of assigned responsibility.

j. Implements aspects of the Plant Quality Assurance Program which relate to the activities of the Maintenance Department.

k. Reviews mechanical and electrical equipment failure frequency and evaluates equipment reliability.

l. Assumes responsibility for the condition, maintenance, and reliability of all plant electrical and mechanical equipment other than that specifically assigned to other departments.

9. Engineering Support Supervisor

a. Reports to the Technical Services Superintendent.

b. Coordinates Plant Quality Assurance activities with the Nuclear Services Division of Yankee Atomic, through the Manager of Operations.

c. Coordinates the reviews and updates of plant prints, drawings, and specifications.

d. Schedules, prepares, and retains specified plant reports and records.

e. Maintains and disseminates information regarding codes, crtieria, standards, guidelines, and policy to applicable plant personnel.

f. Directs the efforts of the Engineering Support Department to assure that plant design changes and alterations provide for adequacy of design, proper narration and/or documentation and review of potential unresolved safety issues.

g. Coordinates Plant Inservice Inspection and Plant Leak Rate Testing Programs.

h. Schedules and assigns activities that are the responsibility of the Engineering Support Department.

i. Provides for the accountability and control of Design Changes, Alterations, and Job Orders.

j. Directs the implementation of the Fire Protection Plan.

10. Training Department Supervisor

a. Reports to the Plant Manager.

b. Establishes and maintains all operator and plant training programs.

c. Remains current on all regulatory requirements concerning training and qualifications of plant personnel and ensures that Plant training programs and procedures are revised in

a timely manner in response to changing needs and regulations.

d. Provides overall coordination and supervision for the Plant Training Supervisor and the Operations Training Supervisor in carrying out their duties.

e. Evaluates the effectiveness of the training programs and the performance of the individuals participating in the training.

11. Chemistry and Health Physics Supervisor

a. Reports to the Operations Superintendent.

b. Fulfills duties and responsibilities similar to and/or as described in the FSAR and is directly in charge of the Chemistry and Health Physics Department.

c. Consistent with the policies and applicable instructions, institutes necessary programs, issues instructions, originates procedures, and insures that department administrative systems exist such that the responsibilities assigned to the Chemistry and HP Department are executed affectively and efficiently in accordance with company intent. Insures that necessary documentation is prepared, reviewed, approved, and properly filed to establish that department activities meet all requirements.

d. Consistent with plant policies and applicable instructions, organizes department functions and activities, assigns and schedules personnel to accomplish department requirements. Reviews and supervises all department assignments.

e. Maintains current status of department activities and requirements. Prepares and maintains long-range plans and schedules for department commitments such as personnel training and qualification, preventive maintenance, material procurement, plant modifications, etc.

f. Assumes responsibility for providing the necessary administrative supervision and required personnel to meet the needs of the established Radiological and Non-Radiological Environmental Monitoring Programs.

g. Prescribes and maintains chemistry conditions and purification of coolants within applicable limits.

h. Develops and maintains records of all radioactive and non-radioactive waste releases and of all chemistry and radiochemistry aspects of the plant.

i. Develops and enforces work and housekeeping practices in Radiologically Controlled Areas of the Plant to minimize personnel exposure and the spread of radioactive contamination.

j. Assumes responsibility for receipt, storage, shipment, and disposal of radioactive material utilizing proper Federal and State regulations (other than nuclear fuel).

12. Reactor and Computer Supervisor

a. Reports to the Technical Services Superintendent.

b. Fulfills duties and responsibilities similar to and/or as described in the FSAR and is directly in charge of the Reactor Engineering Department.

c. Plans, schedules, and supervises the activities of the Reactor and Computer Engineering Department. Such activities to include: nuclear and thermal core anaysis, planning and scheduling of fuel rearrangments and fuel cycling, computer utilization, rod withdrawal sequences, rod patterns, and reactor maneuvering during plant startup.

d. Coordinates the activities of the Reactor and Computer Engineering Department with all other plant functions.

e. Establishes and directs a program of nuclear and Plant Thermodynamic Performance Monitoring and Surveillance Testing as required by the plant license, approved plant procedures, or other plant requirements.

f. Establishes a program of control, accountability and record keeping as required to maintain an accurate inventory of licensed nuclear material.

g. Establishes and directs a program of departmental training that will assure a staff of Reactor and Computer Engineering personnel capable of safely and efficiently performing their duties in accordance with established practices, procedures, and regulations.

h. Prepares and/or supervises the preparation of reports, logs, and historical records as required.

i. Implements those aspects of the Plant Quality Assurance Program which relate to the activities of the Reactor and Computer Engineering Department.

j. Develops and maintains, in accordance with approved plant procedures, the procedural controls necessary to fulfill the above requirements.

E. REVIEW AND AUDIT

Two committees have been established for each operating plant whose objectives are to insure the plant is operated safely, utilizing good engineering practices. The committees are charged with making recommendations to modify operational methods or safety precautions when and if they become inadequate.

One committee, the Plant Operations Review Committee, is made up of Plant personnel. The other committee, the Nuclear Safety Audit and Review Committee, is made up of individuals not having line responsibility for the operation of the Plant.

1. Plant Operations Review Committee

a. Yankee Plant - See Section 6.5 "Review and Audit" of Appendix A Technical Specifications to the Operating License DPR-3.

b. Vermont Yankee Plant - See Section 6.2 "Review and Audit" of Appendix A Technical Specifications to the Operating License DPR-28.

2. Nuclear Safety Audit and Review Committee

a. Yankee Plant - See Section 6.5 "Review and Audit" of Appendix A Technical Specifications to the Operating License DPR-3.

b. Vermont Yankee Plant - See Section 6.2 "Review and Audit" of Appendix A Technical Specifications to the Operating License DPR-28.

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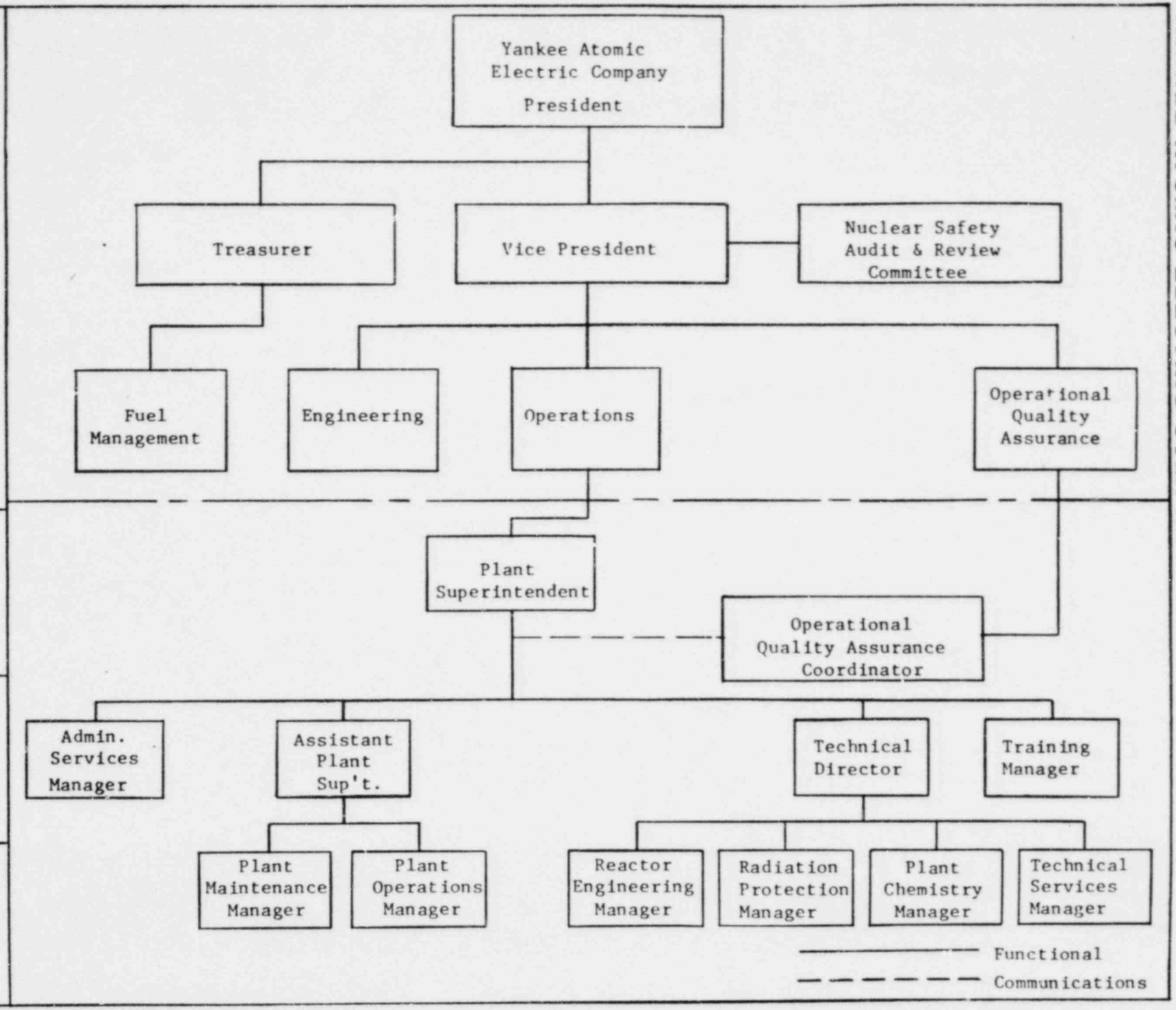

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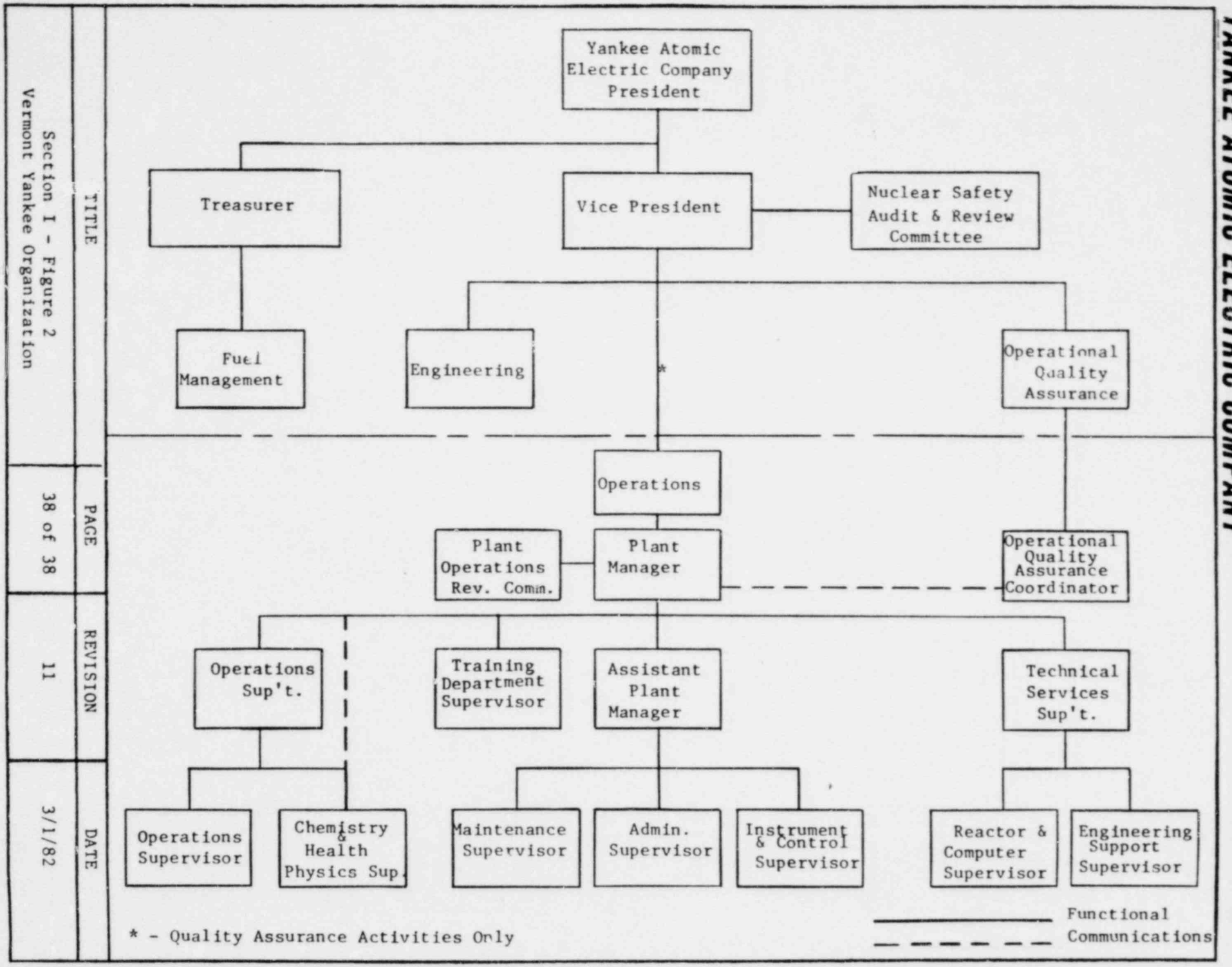
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Yankee Atomic Electric Company President
Treasurer
Vice President
Nuclear Safety Audit & Review Committee
Fuel Management
Engineering
*
Operational Quality Assurance
Operations
Plant Operations Rev. Comm.
Plant Manager
Operational Quality Assurance Coordinator
Operations Sup't.
Training Department Supervisor
Assistant Plant Manager
Technical Services Sup't.
Operations Supervisor
Chemistry & Health Physics Sup.
Maintenance Supervisor
Admin. Supervisor
Instrument & Control Supervisor
Reactor & Computer Supervisor
Engineering Support Supervisor
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II. QUALITY ASSURANCE PROGRAM

A. SCOPE

This section established the criteria to be applied to systems requiring Quality Assurance which prevent or mitigate the consequences of postulated accidents which could cause undue risk to the health and safety of the public. The structures, systems, components and other items requiring quality assurance are listed in Appendices C and D for the Yankee operating plants.

B. RESPONSIBILITIES

1. Compliance with the requirements of the Operational Quality Assurance Program - based on the criteria of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, and ANSI N18.7-1976 - shall be the responsibility of all personnel involved with activities affecting operational safety. Each facility shall have a matrix of major quality assurance procedures cross referenced to each applicable criteria of 10CFR50 Appendix B. The performance of quality-related activities shall be accomplished with specified equipment under suitable environmental conditions.

   NOTE: Each criterion section for the Program incorporates the designation of specific organizational responsiblities.

2. Individuals having direct responsibilities for establishment/distribution control/implementation of the Operational Quality Assurance Program are delineated in Section I "Organization" of the Program.

C. IMPLEMENTATION

Establishment of an effective Operational Quality Assurance Program is assured through consideration of and conformance with the Regulatory Position in the below listed Regulatory Guides as modified in Appendix B. Implementation of this Program is assured through Quality Assurance procedures derived from Quality Assurance policies, goals and objectives. Operational Quality Assurance shall review Quality Assurance program procedures to assure their derivation from the policies, goals and objectives established by the President.

1. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants

2. ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.33, Revision 2)

3. ANSI N45.2.1-1973, Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.37, March 16, 1973)

* 4. ANSI N45.2.2-1972, Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (Endorsed by Regulatory Guide 1.38, Revision 2)

* 5. ANSI N45.2.3-1973, Housekeeping During the Construction Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.39, Revision 2)

6. ANSI N45.2.4-1972, Installation, Inspection and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Plants (Endorsed by Regulatory Guide 1.30, August 11, 1972)

7. ANSI N45.2.5-1974, Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.94, Revision 1)

8. ANSI N45.2.6-1978, Qualification of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.58, Revision 1)

9. ANSI N45.2.8-1975, Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants (Endorsed by Regulatory Guide 1.116, Revision 0-R)

10. ANSI N45.2.9-1974, Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants (Endorsed by Regulatory Guide 1.88, Revision 2)

* 11. ANSI N45.2.10-1973, Quality Assurance Terms and Definitions (Endorsed by Regulatory Guide 1.74, February 1974)

12. ANSI N45.2.11-1974, Quality Assurance Requirements for the Design of Nuclear Power Plants (Endorsed by Regulatory Guide 1.64, Revision 2)

* 13. ANSI N45.2.12-1977, Requirements for Auditing of Quality Assurance Program for Nuclear Power Plants (Endorsed by Regulatory Guide 1.144, January 1979)

14. ANSI N45.2.13-1976, Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants (Endorsed by Regulatory Guide 1.123, Revision 1)

15. ANSI N45.2.23-1978, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants (Endorsed by Regulatory Guide 1.146, August 1980)

16. ANSI N18.1-1971, Selection and Training of Nuclear Power Plant Personnel (Endorsed by Regulatory Guide 1.8, Revision 1-R)

* 17. Regulatory Guide 1.26, Revision 3, Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants

* 18. Regulatory Guide 1.29, Revision 3, Seismic Design Classification

NOTES: 1) When conflicts in similar requirements contained in Technical Specifications and the above documents exist, the requirements contained in Technical Specifications override those in the documents. Requirements in the documents will be considered when they supplement and are not in conflict with similar requirements in Technical Specifications.

2) Revisions to the above listed documents will be considered for applicability to the Yankee Operational Quality Assurance Program upon written direction thereof by the Nuclear Regulatory Commission - Office of Nuclear Reactor Regulations - Quality Assurance Branch.

3) Only those documents listed above shall be considered applicable to the Yankee and Vermont Yankee Plants. Documents further referenced by the above listed documents shall not be considered applicable. They may, however, be considered as guidelines.

4) This Program shall be applicable to those activities requiring quality assurance which occur commencing 90 days after acceptance of the Program by the Nuclear Regulatory Commission.

5) The NRC shall be notified of changes in the accepted description of the QA program for their review and acceptance prior to implementation. Acceptance will be assumed 30 days after submittal unless notified otherwise.

6) The NRC shall be notified of changes in organizational elements within 30 days after announcement.

7) Editorial changes or personnel reassignments of a non-substantive nature do not require NRC notification.

*Exceptions and alternatives to the provisions contained in this Standard/Guide are detailed in Appendix B.

D. MANAGEMENT EVALUATION

The Cognizant Corporate Officer directs a thorough evaluation of the established Operational Quality Assurance Program by assigning the Nuclear Safety Audit and Review Committee the task of reviewing for compliance with and evaluating the effectiveness of quality related activities.

E. TRAINING

1. The Manager of Operation is responsible for the indoctrination and training of his staff involved with activities affecting quality during plant operation.

2. The Plant Superintendent/Manager is responsible for the indoctrination and training of plant staff personnel performing activities affecting operations or requiring quality assurance, and for operators are formally licensed or qualified.

3. The Plant Engineering Manager is responsible for the indoctrination and training of Plant engineering personnel performing activities affecting quality in the design, test and operation phases.

4. The Director of Environmental Engineering is responsible for the indoctrination and training of Environmental Engineering Department personnel performing activities affecting quality in the design, test and operation phases.

5. The Fuel Cycle Manager is responsible for the indoctrination and training of Fuel Cycle Department personnel performing activities affecting quality in the design, test and operation phases.

6. The Manager of Operational Quality Assurance is responsible for the indoctrination and training of Operational Quality Assurance personnel controlling and auditing activities affecting quality for operating plants.

7. The indoctrination and training programs shall provide the following:

   a. Instruction as to the purpose, scope, and implementation of quality-related manuals, instructions, and procedures.

   b. Training and qualification in the principles and techniques of the activity being performed.

   c. Documentation of the scope, objective, and method of implementing the program.

   d. Maintenance of personnel proficiency by retraining, re-examining, and/or recertifying.

   e. Documentation of the training sessions including content, attendance, dates and results.

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III. DESIGN CONTROL

A. SCOPE

This section of the Operational Quality Assurance Program establishes measures to assure that the design of and changes to structures, systems, and components covered by the Operational Quality Assurance Program are controlled.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance of the implementation of design control.

   b. Review of engineering drawings and specifications to assure that appropriate design control practices, checks, and reviews are included.

   c. Review of design bases for inclusion of quality requirements.

2. The Nuclear Services Division Engineering Departments/Plants shall be responsible for:

   a. The design and control of changes including independent review.

   b. The design and control of design activities (including design interfaces) for the change of structures, systems,

or components including the requirement for independent review.

c. Identification, documentation, and control of deviations from specified design requirements and/or quality standards.

d. Design analysis and delineation of acceptance criteria for inspections and tests.

3. The Plant Operations Review Committee shall be responsible for:

a. Review of all proposed plant changes and recommending their approval or disapproval to the Plant Superintendent.

b. Determination of whether proposed changes involve unreviewed safety questions.

4. The Plant Superintendent/Manager shall be responsible for:

a. Review of the recommendations of the Plant Operations Review Committee.

b. Review and approval of proposed plant changes.

5. The Nuclear Safety Audit and Review Committee shall be responsible for the review of plant changes.

6. The Manager of Operations and his staff shall be responsible for:

a. Establishment of approved policy for processing material purchases, plant design changes and engineering design changes.

b. Review, approval and distribution of plant change documents.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Correct translation of applicable regulatory requirements and design bases into specifications, drawings and written documents.

b. Application of suitable design controls to such activities as reactor physics; seismic, stress, thermal, hydraulic, radiation, and accident analyses; compatibility of materials; and accessibility for inservice inspection, maintenance and repair.

c. Design reviews to assure that design characteristics can be controlled, inspected and tested.

d. Performance of proper selection and accomplishment of design verification or checking process such as design reviews, alternate calculations, qualification testing or test programs. When a test program is used to verify the adequacy of a design, a qualification test of a prototype unit under the most adverse design conditions shall be

used. The responsibilities and qualifications of the verifier, the areas and features to be verified, the pertinent considerations to be verified, and the extent of documentation are identified in procedures.

If the verification method is only by test, procedures provide criteria that specify when verification should be by test, and that prototype, component, or feature testing is performed prior to relying upon the component, system, or structure to perform its function.

e. Subjection of design and specification changes, including those originating "onsite", to the same design controls and approvals that were applicable to the original design unless designated in writing to another responsible organization.

f. Documentation of errors and deficiencies in the design process that adversely affect safety classified structures, systems, and components; performance of corrective action to preclude repetition.

g. Review of standard "off the shelf" commerical or previously approved materials, parts, and equipment that are essential to the safety functions of structures, systems, and components, for suitability of application prior to selection.

h. Selection of suitable materials, parts, equipment, and processes for safety classified structures, systems, and components.

i. Establishment of procedures to assure that verified computer programs are,certified and specified for a particular application.

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IV. PROCUREMENT DOCUMENT CONTROL

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures necessary to assure that applicable regulatory requirements, design bases and other requirements which are necessary to assure adequate quality, are suitably included or referenced in the documents for procurement of material, equipment and services.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance and/or audit of procurement document control, incuding the preparation, review, and approval of purchase requisitions for material, equipment, and services covered by the Operational Quality Assurance Program.

   b. Review of procurement documents initiated by the Plant or the Yankee Nuclear Services Division.

2. The Plant shall be responsible for:

   a. The preparation, review, issue, and control of purchase documents.

   b. Preparation of detail as to how purchase documents are prepared, reviewed, approved, issued, and controlled.

3. The Nuclear Services Division Engineering Departments shall be responsible for:

   a. Preparation of engineering specifications which detail the technical and quality requirements for material, equipment and services.

   b. Initiation and/or review of purchase documentation for material, equipment, and services required for Plant changes.

4. The Manager of Operations and his staff shall be responsible for the review, approval and distribution of procurement documents.

C. IMPLEMENTATION

1. Satisfaction of the criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

   a. Documentation of the review and approval of procurement documents prior to release and availability of this documentation for verification.

   b. Identification of the vendor's applicable quality assurance requirements of 10CFR50, Appendix B and/or ANSI N18.7 in the procurement documents which are to be reviewed by the qualified personnel in the Quality Assurance Department.

c. Identification in the procurement documents of the documentation to be prepared, maintained, and/or submitted to the purchaser prior to use, such as:

1. drawings, specifications, procedures

2. inspection and fabrication plans

3. inspection and test records

4. personnel and procedure qualifications

5. chemical and physical test results of material

6. Quality Assurance Department's right of the access to the vendor's facilities and records for surveillance to procurement specifications.

d. Review and approval of changes and revisions to procurement documents at least equivalent to those for the original document.

e. Control of procurement documents for spare and replacement parts at least equivalent to that used for the original equipment.

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V. INSTRUCTIONS, PROCEDURES, AND DRAWINGS

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for prescribing and accomplishing activities requiring quality assurance in accordance with approved drawings, instructions, or procedures.

B. RESPONSIBILITIES

Persons preparing and approving documents are responsible for assuring that specifications, instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that activities have been satisfactorily accomplished; assuring that the applicable criteria of 10CFR50 Appendix B and/or ANSI N18.7 are specified; and assuring that the documents are kept current. In addition, the following departments have the distinct responsibilities delineated below.

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance of instructions, procedures, and drawings.

   b. Review and approval of all Plant Operational Quality Assurance procedures.

2. The Plant shall be responsible for the preparation, approval, maintenance, and implementation of all instructions and procedures associated with plant activities.

3. The Nuclear Services Division Engineering Departments shall be responsible for:

   a. Preparation and approval of engineering drawings and instructions, welding and nondestructive examination procedures, and procedures for Engineering Design Control.

   b. Updating and control of original drawings and distribution of copies thereof.

4. The Plant Operations Review Committee shall be responsible for reviewing procedures affecting nuclear safety prior to their approval by the Plant Superintendent.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

   a. Establishment of provisions which clearly delineate the sequence of actions to be accomplished in the preparation, review, approval, and control of instructions, procedures, and drawings.

   b. Review of inspection plans; test, calibration, special process, maintenance and repair procedures; drawings and specifications; and changes thereto by the Quality Assurance Department or other personnel knowledgeable in Quality Assurance.

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VI. DOCUMENT CONTROL

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for controlling the issuance of documents, including revisions thereto, which affect quality activities.

B. RESPONSIBILITIES

1. All participating departments shall establish document control measures which provide for the following:

   a. Identification of departments responsible for preparation, review, approval, and control of documents.

   b. Identification of documentation to be used in performing activity.

   c. Coordination and control of interface documents.

   d. Establishment of distribution lists.

   e. Action to be taken for obsolete or superseded documents.

   In addition, the following departments have the unique responsibilities delineated below.

2. The Nuclear Services Division Quality Assurance Department shall be responsible for surveillance and/or audit of document

control systems at Nuclear Services Division, the Plant, and vendors.

3. The Plant shall be responsible for:

   a. Controlling the issuance of plant operating, maintenance, repair, refueling, and change documents.

   b. Distribution and maintenance of all plant approved and/or revised documents assuring quality at the location where the activity is performed.

   c. Review, approval and distribution of drawings.

4. The Nuclear Services Division Engineering Departments shall be responsible for:

   a. Controlling the issuance of engineering drawings, specifications, welding and nondestructive examination documents.

   b. Revision and distribution of welding and nondestructive examination documents.

   c. Maintenance and distribution of engineering specifications and drawings.

5. The Manager of Operations and his staff shall be responsible for:

   a. A system of review and approval of Plant drawings and specifications.

b. Controlling the Nuclear Services Division Operations Department quality assurance documents.

6. The Director of Quality Assurance shall be responsible for establishing the means for the control and distribution of the Operational Quality Assurance Program, and revisions thereto.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Review and approval of document changes by the same organizations that performed the original review and approval or by other responsible organizations delegated by Yankee Atomic Electric Company.

b. Inclusion of approved changes in instructions, drawings, and other applicable documents prior to placing the system in operating status.

c. Provision of availability of documents at the location where the activity is to be performed prior to commencing the work.

d. Establishment, revision, and distribution of a master list or equivalent to identify the current revision number of instructions, specifications, drawings, procurement documents, or other quality assuring documents.

e. Control of documents identified as follows:

1. Design specifications

2. Design, manufacturing, construction, and installation drawings

3. Procurement documents

4. Operational Quality Assurance Program, maintenance, and operating procedures

5. Manufacturing, inspection and test instructions

6. Test documents

7. Design change requests

8. Nonconformance reports

f. Appendices to the Operational Quality Assurance Program are considered to be part of the Program and are reviewed and approved in accordance with the Program.

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VII. CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

A. SCOPE

This section of the Operational Quality Assurance Program establishes measures to assure that purchased material, equipment and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Evaluation of vendor quality assurance programs.

   b. Maintenance of a listing of qualified vendors based upon (a).

   c. Surveillance of plant or vendor material and/or services control.

2. The Nuclear Services Division Engineering Departments shall be responsible for evaluating vendor manufacturing and technical capabilities upon request.

3. The Plant shall be responsible for:

   a. Receipt inspection and control of material and equipment.

   b. Evaluation of purchased services during and/or after completion of the service.

c. The Administrative Department shall be responsible for the control of purchased material, parts and components until issued for installation or use.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Evaluation of vendors based on one or more of the following:

1. Vendor's capability to comply with the applicable criteria of 10CFR50 Appendix B and/or ANSI N18.7.

2. Review of vendor's previous records and performances.

3. Surveillance of vendor's facilities/services and QA program to determine his ability to produce the item to the purchase specifications.

b. Documentation and maintenance of the results of vendor evaluations.

c. Planned vendor surveillances which provide for:

1. Specification of processes to be witnessed or verified, the surveillance method and documentation required, and personnel responsible for performing the surveillance.

2. Assurance that the vendor complies with the quality requirements by surveillance of in-process work.

d. Transfer of the following records from the vendor to the plant:

1. Documentation that identifies the purchased material and the specific procurement requirements met by the item.

2. Documentation that identifies any deviation from procurement requirements including a description of those deviations dispositioned "accept as is" or "repair".

e. Review and acceptance of vendor documents by a responsible quality assurance individual.

f. Receipt inspection of vendor furnished material to assure:

1. Material is identified and conforms with receiving documentation identification.

2. Material and documentation are inspected in accordance with predetermined instructions and are determined acceptable prior to use.

3. Inspection records or certificates of conformance attesting to material acceptability are on-site prior to use.

4. Items are identified as to their inspection status prior to release for controlled storage, installation or further work. ,

g. Evaluation of the vendor's effectiveness to control quality is performed at intervals consistent with the importance, complexity and quality of the item.

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VIII. IDENTIFICATION AND CONTROL OF MATERIAL, PARTS, AND COMPONENTS

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for identification and control necessary to prevent the use of incorrect or defective material, parts, and components.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance, audit and/or inspection of the control and issuance of materials, parts, and components covered by the Operational Quality Assurance Program.

   b. Review of vendor Quality Assurance programs for traceability of materials through the use of heat number, part number, or serial number, either on the item or on records traceable to the items.

2. The Plant shall be responsible for:

   a. Preparation and approval of documents for the identification and control of materials, parts, components and storage of lubricants and other consumable materials.

b. Maintenance of traceability of materials, parts, and components received, stored, installed, and used at the Plant.

3. The Nuclear Services Division Engineering Departments shall be responsible for assuring that specifications contain appropriate requirements for the identification and control of materials, parts, and components.

4. The Manager of Operations and his staff shall be responsible for providing review and approval of documentation, including identification control requirements for the purchase of materials, parts, and components.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Traceability of the identification of materials and parts to the appropriate documentation such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports.

b. Identification of the item in a location and with a method which does not affect its fit, function or quality.

c. Documented verification of correct identification of materials, parts, and components prior to release for use.

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IX. CONTROL OF SPECIAL PROCESSES

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures necessary to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel in accordance with applicable codes, standards, specifications, criteria and other special requirements.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance, audit and/or inspection of the control of special processes.

   b. Performance and/or evaluation of certain nondestructive tests in accordance with "Yankee Atomic Electric Company Welding and Nondestructive Examination Procedures".

   c. Training, qualification, and requalification of Plant and Quality Assurance Department personnel in nondestructive testing (liquid penetrant examination).

   d. Review of special process documents generated by the Nuclear Services Division Engineering Department and vendors.

2. The Nuclear Services Division Engineering Departments shall be responsible for:

   a. Preparation of documents for welding, heat treating, filler metal control, and nondestructive examinations.

   b. Review and approval of special process documents provided by the vendor.

3. The Plant shall be responsible for:

   a. Assurance that maintenance and change work involving special processes are performed by qualified personnel in accordance with approved documents.

   b. Control of material used in special processes by plant personnel.

4. The Manager of Operations and his staff shall be responsible for review and approval of purchase documentation for special process material.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

   a. Qualification records of documents, equipment, and personnel connected with special processes in accordance with applicable codes, standards, and specifications.

b. Special processes accomplished in accordance with written process sheets or equivalent with recorded evidence of verification.

c. Maintenance and updating of qualification records of special process documents, equipment, and personnel.

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X. INSPECTION

A. SCOPE

This section of the Operational Quality Assurance Program establishes measures for inspection of activities requiring quality assurance to verify conformance with approved procedures, drawings, specifications and instructions.

B. RESPONSIBILITIES.

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Review of engineering specifications for inclusion of inspection requirements and acceptance criteria.

   b. Review of documentation pertinent to the Inservice Inspection Program.

   c. Surveillance of inspection activities and personnel.

   d. Incorporation of mandatory witness points for vendor/service group activities.

2. The Plant shall be responsible for:

   a. Writing and approving inspection instructions and check lists.

   b. Assuring that activities requiring quality assurance meet predetermined requirements.

c. Providing qualified personnel and necessary equipment for examinations to assure quality work.

3. The Nuclear Services Division Engineering Departments shall be responsible for:

a. Verification of the adequacy of a specific design feature by implementation of a prototype test when required.

b. Review of inspection and test data for compliance with established engineering criteria.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Independence of personnel performing the inspection from the personnel performing the activity being inspected.

b. Use of instructions or check lists which incorporate the details listed in Section XVII Item C.1.a.

c. Use of necessary drawings and specifications when performing inspection operations.

d. Inspection of repairs and replacements in accordance with the original design and inspection requirements or acceptable alternatives.

e. Surveillance of processing methods, equipment, and personnel when direct inspection is not possible.

f. Qualification of inspectors in accordance with applicable codes, standards, and company training programs; and maintenance of qualifications and certifications.

g. Review of maintenance documents by qualified personnel knowledgeable in quality assurance to determine the need for inspection, identification of inspection personnel, and documenting inspection results.

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XI. TEST CONTROL

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for a test program to demonstrate that structures, systems, and components will perform satisfactorily in service.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance of the control of the test program.

   b. Review of the documentation generated during the test program.

2. The Nuclear Services Division Engineering Departments/Plants shall be responsible for:

   a. Establishment of specifications, requirements, and acceptance criteria for testing following plant changes.

   b. Determination of when testing is required following plant changes.

   c. Transfer of test data to the Plant after acceptable results.

d. Development of test documents, performance of tests, and documentation, evaluation, and approval of test results.

e. Provision of qualified personnel and calibrated equipment for testing.

3. The Nuclear Safety Audit and Review Committee shall be responsible for reviewing proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10CFR.

4. The Plant Operations Review Committee shall be responsible for the review of all test documents and test results for special tests.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Assurance that changes, repairs, and replacements are tested in accordance with the original design and testing requirements or acceptable alternatives.

b. Review of written test documents for incorporation or reference of the following:

1. Requirements and acceptance limits contained in applicable design and procurement documents.

2. Instructions for performing the test.

3. Test prerequisites, such as:

   a) Calibrated instrumentation

   b) Adequate and appropriate equipment

   c) Trained, qualified, and licensed/certified personnel

   d) Completeness of item to be tested

   e) Suitable and controlled environmental conditions

   f) Provisions for data collection and storage.

4. Mandatory inspection hold points for witness by owner, contractor or inspector, when applicable.

5. Acceptance and rejection criteria.

6. Method of documenting test data and results.

c. Procedures shall provide criteria for determining the accuracy requirements of test equipment.

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XII. CONTROL OF MEASURING AND TEST EQUIPMENT

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for the control, calibration and periodic adjustments of tools, gages, instruments, and other measuring and test devices used to verify conformance to established requirements.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance and/or audit of the established program for the control of measuring and test equipment.

   b. Review of the implementing documents for control of measuring and test equipment.

2. Each Plant Department shall be responsible for:

   a. Development of the implementing documents for control of measuring and test equipment including identification and calibration for equipment under their control.

   b. Provision of calibrated tools, gages and instruments necessary to perform required measurements and tests.

   c. Maintenance of calibration records.

d. Preparation and review of specifications for measuring and test equipment, such that all applicable requirements are satisfied.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Identification and traceability of measuring and test equipment to the calibration test data.

b. Labelling or tagging of measuring and test equipment to indicate due date for calibration.

c. Calibration of measuring and test equipment at specified intervals based on required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement.

d. Documentation of measures taken to determine the validity of previous inspections performed when measuring and test equipment is found to be out of calibration.

e. Use of calibration standards having an uncertainty (error) requirement of no more than 1/4 of the tolerance of the equipment being calibrated. Calibration standards limited by the "state-of-the-art" may have a greater acceptable uncertainty.

f. Documentation and maintenance of the status of all items under the calibration system.

g. Traceability of reference and transfer standards to nationally recognized standards; or, documentation of the basis for calibration where national standards are nonexistent.

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XIII. HANDLING, STORAGE AND SHIPPING

A. SCOPE

This section of the Operational Quality Assurance Program establishes measures to control the handling, storage, shipping, cleaning and preservation of material and equipment to prevent damage or deterioration.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance, audit and/or inspection of the handling, storage and shipping of materials, parts, and components.

   b. Review of handling, storage, and shipping documents.

   c. Review of Engineering and Plant specifications to assure that proper handling, storage, and shipping requirements have been specified.

2. The Plant shall be responsible for:

   a. Development of the implementing documents for handling, storage and shipping of materials and equipment.

   b. Provisions of suitable facilities and equipment for handling, storage, and shipping of materials.

c. Inspection and test of special handling tools and equipment.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or Plant actions listed below:

a. Specification and accomplishment of special handling, preservation, storage, cleaning, packaging, and shipping requirements by qualified individuals in accordance with predetermined work and inspection instructions.

b. Preparation of instructions in accordance with design and specification requirements which control the cleaning, handling, storage, packaging, shipping and preservation of safety classified materials, components and systems to preclude damage, loss or deterioration by environmental conditions such as temperature or humidity.

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XIV. INSPECTION, TEST AND OPERATING STATUS

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for indicating the status of items undergoing inspections and tests (via tags, labels, etc.), to prevent the unintentional bypass of required tests. In addition, this section establishes measures for indicating the operating status of components and systems to prevent their inadvertent operation.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for the surveillance of inspection, test and operational status of components and systems and their repair.

2. The Plant shall be responsible for:

   a. Ensuring indication of the status of operating equipment or systems to be removed from service for maintenance, test, inspection, repair or change.

   b. designation of personnel who are responsible for directing the status change of equipment and systems.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

   a. Notification of affected organizations for changes in the inspection, test and operating status of structures, systems, and components.

   b. Procedural control of the bypassing of required inspections, tests and other critical operations under the cognizance of the Quality Assurance Department.

   c. Procedural control of the application and removal of inspection and status indicators such as tags, markings, labels and stamps.

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XV. NONCONFORMING MATERIALS, PARTS, AND COMPONENTS

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures to control materials, parts, or components which do not conform to requirements, in order to prevent their inadvertent use.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance of the control, evaluation, and disposition of nonconforming material, parts and components.

   b. Review of nonconformance reports.

   c. Surveillance for repetitive nonconforming materials.

   d. Establishment of feedback system between Yankee Atomic Electric Company and vendor representatives in regard to nonconforming material.

2. The Nuclear Services Division Engineering Departments shall be responsible for:

   a. Review of nonconforming items which cannot be corrected by vendor action.

b. Preparation or approval of implementing documents for repair and/or rework of nonconforming items.

3. The Manager of Operations and his staff shall be responsible for preparation of documents to be followed in the review and approval of all nonconforming item, service, or activity dispositions.

4. The Plant shall be responsible for:

a. Writing implementation documents for the identification, documentation, and corrective action for all material, installation, testing, operation, and/or surveillance nonconformances.

b. Establishment of measures to provide for the documented control of nonconforming materials, parts, and components.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Identification, disposition, inspection and segregation of nonconforming items.

b. Identification of those individuals or groups delegated the responsibility and authority for the disposition and written approval of nonconforming items.

c. Inspection and test of reworked or repaired items which require reinspection and retest to original methods or methods equivalent thereto.

d. Inclusion of nonconformance reports dispositioned "accept as is" or "repair" as part of the inspection records furnished to the plant.

e. Periodic analysis of nonconformance reports to show quality trends with the results reported to management for review and assessment.

2. The identification, description, disposition, inspection and signature approval of the disposition for nonconformance shall be documented in a nonconformance report.

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XVI. CORRECTIVE ACTION

A. SCOPE

This section of the Operational Quality Assurance Program establishes measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance and/or audit of plant activities involving the identification, review and correction of conditions adverse to quality.

   b. Review of documentation of corrective action.

   c. Preparation of recommendations to prevent reoccurrence of a deficiency.

2. The Manager of Operations and his staff shall be responsible for:

   a. Review of adverse conditions reported by the Plant.

   b. Coordination of comments between the Nuclear Services Division Engineering Departments and the Plant.

c. Review of corrective action taken by the Plant.

3. The Plant shall be responsible for:

a. Identification of causes of conditions adverse to quality.

b. Implementation of the corrective action.

c. Documentation of corrective action taken.

4. The Nuclear Services Division Engineering Departments shall be responsible for:

a. Review of conditions adverse to quality which involve design deficiencies to determine the cause of the condition.

b. Recommendations of corrective action to preclude repetition of design deficiencies.

5. The Plant Operations Review Committee shall be responsible for:

a. Review of conditions adverse to quality and recommending corrective action.

b. Recommendations involving repetition of operating deficiencies.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Initiation of corrective action following the determination of a condition adverse to quality to preclude recurrence. ,

b. Follow-up reviews to verify proper implementation of corrective actions and to close out the corrective action documentation.

c. Reporting of significant conditions adverse to quality, the cause of the conditions, and the correction action implemented to the cognizant levels of management for review and assessment, both "offsite" and "onsite".

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XVII. QUALITY ASSURANCE RECORDS

A. SCOPE

1. This section of the Operational Quality Assurance Program establishes the measures for maintenance of records which provide documentary evidence of the quality of items and the activities affecting quality. Requirements shall be established for identification, transmittal, retrievability and retention of quality assurance records including duration, location, protection and assigned responsibility.

2. The quality assurance records shall include plant history; operating logs; principal maintenance; design change activities; reportable occurrences; nonconformance reports; results of reviews, inspections, tests, audits and material analyses; monitoring of work performance; qualification of personnel, documents and equipment; drawings; specifications; procurement documents; calibration documents and reports; and corrective action reports.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Surveillance and/or audit of quality assurance record review, control and retention.

   b. Maintenance of qualification/certification records for Quality Assurance Department personnel.

c. Maintenance of audit, vendor evaluation, surveillance and inspection records of quality assurance activities generated by the Quality Assurance Department personnel or their designates.

2. The Plant shall be responsible for:

a. Writing implementation documents for the establishment and maintenance of Plant Operational Quality Assurance records.

b. Designating individuals and establishing requirements for the control of plant design, procurement, and operational records involving quality assurance.

c. Provision of facilities to prevent deterioration or loss of documentation.

d. Provision of a system for the review, approval and retention of plant prepared documents such as reportable occurrences, technical reports, required records and the meeting minutes of official committees.

3. The Nuclear Services Division Engineering Departments shall be responsible for establishing a system of review, approval and retention of documents relating to quality assurance for the operation of the department.

4. The Director of Quality Assurance shall be responsible for control and distribution of the Operational Quality Assurance Program and revisions thereto.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of the Nuclear Services Division and/or plant actions listed below:

a. Specifying the details required for inspections and test records including the following as applicable:

1) Description of the type of observation.

2) Evidence of completion and verification of manufacturing, inspection, or test operations.

3) The date and results of the inspection or test.

4) Information related to conditions adverse to quality.

5) Inspector or data recorder identification.

6) Evidence as to the acceptability of the results.

7) Acceptance and rejection criteria.

8) Identification of required procedures, drawings, and specifications and revisions.

9) Specification of the necessary measuring and test equipment including accuracy requirements.

b. Providing for record administration, receipt, storage, preservation, safekeeping, retrieval and final disposition.

c. Construction, location and security of record storage facilities to prevent destruction of the records by fire, flooding, theft, and deterioration by environmental records shall be stored in a separate remote location when the type of document is not included in the record storage facility.

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XVIII. AUDITS

A. SCOPE

This section of the Operational Quality Assurance Program establishes the measures for a comprehensive system of planned and documented audits to verify compliance with all aspects of the Program and to assess the effectiveness of the Program.

B. RESPONSIBILITIES

1. The Nuclear Services Division Quality Assurance Department shall be responsible for:

   a. Providing for audit check lists for surveillance of activities encompassed by the 18 criteria of 10CFR50 Appendix B and ANSI N18.7.

   b. Training of audit personnel.

   c. Scheduling and coordinating the formal In-Plant Audit Program.

   d. Preparing information regarding the In-Plant Audit Program for review by the Nuclear Safety Audit and Review Committee.

   e. Performing random informal surveillance of plant activities.

   f. Performing evaluations of vendors.

g. Following up of discrepancies discovered during audits.

h. Making recommendations to preclude possible audit discrepancy repetition.

i. Performing periodic audits to insure that engineering department personnel understand and implement the engineering procedures.

2. The Manager of Operations and his staff shall be responsible for:

a. Evaluation of plant position on In-Plant Audit Program discrepancies.

b. Preparation of "Implementation Directive" to the Plant on resolution of discrepant items.

3. The Plant shall be responsible for:

a. Documentation of the plant position concerning any outstanding item resulting from an audit.

b. Implementation of action to be taken as directed by the Nuclear Services Division Operations Department.

4. The Nuclear Safety Audit and Review Committee shall be responsible for:

a. Review of the Operational Quality Assurance Program to determine its overall effectiveness.

b. Reporting results of Program reviews and recommendations resulting therefrom to Yankee Atomic Electric Company Management.

C. IMPLEMENTATION

1. Satisfaction of this criterion shall be assured through the implementation of plant and/or Nuclear Services Division documents.

2. The implementing documents shall provide for the following:

a. Documentation of audit results and review with management having responsibility in the area audited.

b. Necessary action to be taken by responsible management to correct deficiencies revealed by the audit.

c. Reaudit of deficient areas until corrections have been accomplished to preclude recurrence of the deficiencies.

d. Inclusion of an objective evaluation of quality-related practices, procedures, instructions and the effectiveness of implementation in the audit.

e. Inclusion of an objective evaluation of work areas, activities, processes and items and the review of documentation in the audit.

f. Performance of audits in the below listed areas where the requirements of Appendix B to 10CFR Part 50 and ANSI N18.7 are being implemented:

1) Operation, maintenance and repairs.

2) The preparation, review, approval, and control of designs, specifications, procurement documents, instructions, procedures, and drawings.

3) Receiving and plant inspections.

4) Indoctrination and training programs.

5) Implementation of operating and test procedures.

6) Calibration of measuring and test equipment.

g. Scheduling of audits regularly on the basis of the status and safety importance of the activities being performed.

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Qualification Requirements for the
Manager of Operational Quality Assurance

The Manager of Operational Quality Assurance must meet the below listed qualification requirements:

A. EDUCATION:

Bachelor's degree in Science or Engineering, or the equivalent in practical experience.

B. EXPERIENCE:

1. Four years experience in the field of Quality Assurance, or

2. Equivalent number of years of nuclear plant experience in a supervisory position preferably at an operating nuclear power plant or a combination of the two.

   a) At least one year of this four years experience shall be nuclear power plant experience in the implementation of the Quality Assurance Program, and

   b) Six months of the one year experience shall be obtained within a Quality Assurance organization.

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APPENDIX B
(Exceptions)

The sub-categories of this Appendix summarize the exceptions noted in Section II of the Yankee Atomic Electric Company Operational Quality Assurance Manual.

Appendix B Sub-Category	Standard/Guide	Title
B-1	ANSI N45.2.3-1973	Housekeeping During the Construction ase of Nuclear Power Plants
B-2	ANSI N45.2.10-1973	Quality Assurance Terms and Definitions
B-3	ANSI N45.2.12-1977	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
B-4	ANSI N45.2.2-1972	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants
B-5	ANSI N45.2.6-1978	Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants
B-6	R.G. 1.26, Rev. 3	Quality Group Classifications and Standards for Water-, Steam- and Radioactive-Waste-Containing Components of Nuclear Power Plants
B-7	R.G. 1.29, Rev. 3	Seismic Design Classification

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ANSI N45.2.3 - 1973, Housekeeping During the Construction Phase of Nuclear Power Plants

A. EXCEPTION:

Subsection 2.1 - Planning

The Yankee operating plants take exception to the five-zone requirements specified in the subject standard.

ALTERNATIVE:

The Yankee operating plants shall establish as a minimum a three zone program as follows:

Zone III

Zone III criteria shall be applied to major portions of the reactor coolant system which are opened for inspection, maintenance or repair.

1. Access control over personnel shall be required.

2. Cleanliness shall be maintained, commensurate with the work being performed, so as to preclude the entry of foreign material to the Reactor Coolant System.

3. A documented cleanliness inspection shall be performed immediately prior to closure.

NOTE: The Zone III requirements may be expanded for certain maintenance repair activities if deemed appropriate by plant management. In such instances applicable sections of Zones I & II shall be specified.

Zone IV

Zone IV criteria shall be applied to the radiation control areas of the plant.

1. Standard janitorial and work practices shall be utilized to maintain a level of cleanliness commensurate with company policy in the areas of Housekeeping, Plant and Personnel Safety and Fire Protection.

2. Additional housekeeping requirements shall be implemented as required for the control of radioactive contamination.

3. Smoking and eating shall be controlled consistent with good health physics practices and to maintain cleanliness.

ANSI N45.2.3 - 1973 (Cont.)

Zone V

Zone V criteria shall be applied to the remainder of the plant.

1. Standard janitorial and work practices shall be utilized to maintain a level of cleanliness commensurate with company policy in the areas of Housekeeping, Plant and Personnel Safety and Fire Protection.

B. EXCEPTION:

Subsection 3.2 - Control of Facilities

The Yankee operating plants take exception to the control of tools, equipment, materials and supplies used in Zone III.

ALTERNATIVE:

The Yankee operating plants shall verify control for Zone III as indicated in Exception A of this sub-category.

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ANSI N45.2.10 - 1973, Quality Assurance Terms and Definitions

EXCEPTION:

Subsection 2 - Terms and Definitions

The Yankee operating plants take exception to the definitions of "Certificate of Conformance" and "Certificate of Compliance".

ALTERNATIVE:

The Yankee operating plants shall reverse the definitions of the above terms so our Program will be in compliance with the implied definitions in the ASME B&PV Code and Yankee specifications.

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ANSI N45.2.12 - 1977 Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants

EXCEPTION:

Subsection 4.2.2 Team Selection

The Yankee operating plants take exception to the requirement for a "Lead Auditor".

ALTERNATIVE:

Team Selection - Audits shall be performed under the cognizance of a Lead Auditor. In selecting personnel for auditing assignments, consideration shall be given to special abilities, specialized technical training, prior pertinent experience. personal characteristics, and education. One or more auditors comprise an audit team. Auditor responsibilities include establishing the pace of the audit, assuring communications with the organization being audited, participation in the audit performance, and preparation and issuance of reports.

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ANSI N45.2.2 - 1972, Packaging, Shipping, Receiving, Storage & Handling of Items for Nuclear Power Plants

A. EXCEPTION:

Subsection 3.7.1 & A3.7.1-Containers

The Yankee operating plants take exception to the specific requirements for containers.

ALTERNATIVE:

Containers shall be of suitable construction to assure material is received undamaged.

JUSTIFICATION:

Containers shipped by closed carrier, stored inside and not subjected to a wet environment do not require weather resistant fiberboard, therefore, this is an unnecessary expense. Additionally, numerous vendors utilize shipping containers that do not comply with the specific requirements of this section, i.e., flaps overlap. The acceptance criteria for a shipping container should be established based on the capability of the container to maintain the component material in a safe condition. Technology has advanced beyond the standard.

B. EXCEPTION:

Subsection 3.7.2 - Crates and Skids

The Yankee operating plants take exception to the requirement that skids and runners shall be used on boxes with a gross weight of 100 pounds or more.

ALTERNATIVE:

Skids or runners shall be used on boxes with a gross weight of 100 pounds or more if practical.

JUSTIFICATION:

Storage methods and container design frequently are such that runners or skids are not feasible.

ANSI N45.2.2 - 1972 (Cont.)

C. EXCEPTION:

Subsection 5.2.1 - Shipping Damage Inspection

The Yankee operating plants take exception to the requirement that a preliminary visual inspection or examination be performed prior to unloading.

ALTERNATIVE:

The Yankee operating plants shall perform those required inspections after unloading. In special instances, pre-unloading inspections shall be performed.

JUSTIFICATION:

Post unloading inspection is adequate to determine any damage that may have been incurred during shipping and handling.

D. EXCEPTION:

Subsection 5.2.2 - Item Inspection

The Yankee operating plants take exception to the requirement, that "The inspections shall be performed in an area equivalent to the level of storage requirements for the item."

ALTERNATIVE:

The Yankee operating plants shall perform receiving inspection in a manner and in an environment which do not endanger the requisite quality of the item; however, receiving area environmental controls may be less stringent than storage environmental controls for that item. When inspections are performed in receiving areas with environmental controls less stringent than storage area environmental controls, a time limit shall be established on a case basis for retention of items in the receiving area. Retention time shall be such that deterioration is prevented and applicable manufacturer recommendations are addressed.

JUSTIFICATION:

Receipt inspection activities are for a much shorter duration and therefore should not be subjected to the same stringent requirements as required for storage.

ANSI N45.2.2 (Cont.)

E. EXCEPTION:

Subsection 5.2.3 - Special Inspection

The Yankee operating plants take exception to attaching special inspection procedures to the item or container.

ALTERNATIVE:

Special inspection procedures shall be readily available to personnel performing inspections.

JUSTIFICATION:

Procedures are subject to less abuse and more stringent controls when maintained on file and not attached to the item. Inspection status is maintained by tagging and procedure control.

F. EXCEPTION:

Subsection 6.1.2 - Levels of Storage

The Yankee operating plants take exception to two specific requirements associated with fuel storage (classified level A).

ALTERNATIVE:

The Yankee operating plants shall meet the requirements of level A storage for new fuel with the exception of special air filtering; and temperature and humidity controls.

JUSTIFICATION:

The existing storage conditions at the Yankee operating plants are consistent with the protection provided to the fuel while in storage at the manufacturer (vendor) and/or while in transit to the plant site and are judged to provide adequate protection to the fuel assembly structure which is of highly corrosion resistant materials. We believe that the above listed requirements are intended for application at the manufacturing facility (vendor) where the uranium pellets may be exposed to the atmosphere and not in its fully encapsulated, and therefore, fully protected form in a completed fuel assembly.

ANSI N45.2.2 (Cont.)

G. EXCEPTION:

Appendix A-3 Subsection A3.5.1(1) - Caps & Plugs

The Yankee operating plants take exception to the requirement that non-metallic plugs and caps shall be brightly colored.

ALTERNATIVE:

Non-metallic plugs and caps shall be of a contrasting color.

JUSTIFICATION:

The purpose of utilizing brightly colored plugs and caps is to assist in assuring obstructions are not inadvertently placed in operating components or systems. By using plugs and caps of a contrasting color this objective can be achieved.

H. EXCEPTION:

Appendix A-3 Subsection A3.9(1) - Second Group, Markings

The Yankee operating plants take exception to the requirement that container markings shall appear on a minimum of two sides.

ALTERNATIVE:

Containers shall be adequately marked to provide identification and retrievability.

JUSTIFICATION:

Containers are tagged to provide identification and inspection status. Employment of two tags on small containers adds bulk and confusion and does not provide for better identification or traceability.

I. EXCEPTION:

Appendix A-3, Subsection A.3.9(4) - Second Group, Marking

The Yankee operating plants take exception to the requirement that container markings shall be no less than 3/4- high container permitting.

ANSI N45.2.2 (Cont.)

ALTERNATIVE:

Container markings shall be of a size which permits easy recognition.

JUSTIFICATION:

Markings were intended to provide identification and instructions. The criteria should be that the markings clearly provide the same.

J. EXCEPTION:

Appendix A-3 Subsection A.3.9(6) - Second Group, Marking

The Yankee operating plants take exception to the information required for container marking.

ALTERNATIVE:

Marking shall be adequate in each case to provide identification, traceability and instructions for special handling, as applicable.

JUSTIFICATION:

The information required is excessive. Cluttering a container with excessive markings only reduces the main objectives, maintaining identification and establishing special controls.

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ANSI N45.2.6 - 1978, Qualification of Inspection, Examination and Testing Personnel for Nuclear Power Plants

EXCEPTION:

The Yankee operating plants take exception to the application of the Standard to all Yankee and Vermont Yankee personnel performing inspection, examination and testing.

ALTERNATIVE:

Yankee and Vermont Yankee personnel identified in ANSI N18.1-1971 who perform inspection, examination and testing will be qualified to ANSI N18.1-1971.

Yankee and Vermont Yankee personnel not identified in ANSI N18.1-1971 who perform inspection, examination and testing will be qualified to ANSI N45.2.6-1978.

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

EXCEPTION:

The Yankee operating plants take exception to the Regulatory Guide in its entirety.

ALTERNATIVES:

Yankee

Yankee shall continue to classify structures, components and systems in accordance with ANSI Standard N18.2, January 1973, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants", as in the past.

Vermont Yankee

Vermont Yankee shall continue to classify structures, components and systems in accordance with ANS-22, Draft No. 4, Rev. 1, May 1973, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants", as in the past.

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Regulatory Guide 1.29, Rev. 3, (9/78), Seismic Design Classfication

EXCEPTION:

The Yankee operating plants take exception to the application of Regulatory Guide 1.29, Rev. 3, (9/78).

ALTERNATIVES:

Yankee

Yankee shall apply Regulatory Guide 1.29, Rev. 3, (9/78), to those structures, systems and components as determined by the USNRC System Evaluation Program.

Vermont Yankee

The seismic design classification of structures, systems, and components at Vermont Yankee shall be as defined in the Vermont Yankee FSAR.

VERMONT YANKEE

CLASSIFICATION OF STRUCTURES, COMPONENTS AND SYSTEMS

I. STRUCTURES

Reactor Building
Control Room Building
Plant Stack
Intake Structure (Service Water pump area)
Diesel Generator Rooms
Diesel Fuel Oil Day Tank Rooms
Alternate Cooling Cell
Cooling Tower Deep Basin

II. MECHANICAL SYSTEMS AND COMPONENTS

COMPONENTS	SAFETY CLASS
Reactor Coolant System	
Reactor Vessel	1
Reactor Vessel Support Skirt	1
Reactor Vessel Stabilizer	2
Recirculation System Piping	1
Recirculation System Pumps and Valves	1
Main Steam Piping (to and including outermost containment isolation valve)	1
Main Steam Safety Relief Valves	1
Feedwater Piping (to and including outermost containment isolation valve)	1
Control Rod Drive Housing Supports	2
Reactor Vessel Internals	
Fuel Assemblies	2
Core Support Structure	2
Jet Pumps	2
Control Rods	2
Liquid Poison Pipe	2
Core Spray Sparger	2

COMPONENTS	SAFETY CLASS
Control Rod Drive System	
Control Rod Drives	2
Control Rod Drives Accumulators	2
Scram Discharge Volume	2
Scram Piping	2
Standby Liquid Control System	
SLC Tank	2
SLC Pumps	2
SLC Explosive Valves	2
SLC Piping Inside Containment (to and including outermost isolation valve)	1
SLC Piping Outside Containment	2
Primary Containment	
Drywell	2
Torus	2
Drywell Vent Piping/Vacuum Breakers	2
Torus Ring Header and Downcomers	2
Containment Penetrations	2
Containment Piping and Valves (to and including outermost isolation valve)	2
Vacuum Breaker in SRV Discharge Line	3
SRV Discharge Line Downstream of Drywell Vent Penetration	2
Secondary Containment	
RB Ventilation Isolation Valves	2
Standby Gas Treatment Filters and Fans	2
Containment Air Dilution	
Pressurization System Compressors, Piping and Valves	2
Vent System Piping and Valves	2
Sample System Piping and Valves	2

COMPONENTS	SAFETY CLASS
Residual Heat Removal System	
RHR Piping and Valves Inside Containment (to and including outermost isolation valve)	1
RHR Piping, Punps and Valves (outside containment)	2
RHR Heat Exchangers (shell side)	2
Core Spray System	
Core Spray Piping and Valves Inside Containment (to and including outermost isolation valve)	1
Core Spray Piping, Pumps and Valves (outside containment)	2
High Pressure Coolant Injection System	
HPCI Steam Piping and Valves Inside Containment (to and including outermost isolation valve)	1
HPCI Steam Supply and Exhaust Piping and Valves (outside containment)	2
HPCI Pump-Turbine	2
HPCI Injection Piping and Valves	2
Reactor Core Isolation Cooling System	
RCIC Steam Piping and Valves Inside Containment (to and including outermost isolation valve)	1
RCIC Steam Supply and Exhaust Piping and Valves (outside containment)	2
RCIC Pump Turbine	2
RCIC Injection Piping and Valves	2
Service Water System	
Service Water Pumps	3
Service Water Piping and Valves to Supply Water to RHR Service Water Punps and Diesel Coolers	3
RHR Service Water Pumps	3
RHR Heat Exchanger (tube side)	3
Reactor Building Closed Cooling Water System	3

COMPONENTS	SAFETY CLASS
Reactor Water Cleanup System	
RWCU Piping and Valves Inside Containment (to and including outermost isolation valve)	1
Spent Fuel Storage Systems	
Spent Fuel Pit	2
Fuel Pool Cooling Pumps, Valves, Heat Exchangers and Piping	3
Advanced Off Gas System	
Charcoal Absorber Tanks and Associated Piping and Valves	3
Diesel Generator and Support Systems	
Diesel Engine	3
Air Start System from Receivers to Air Start Solenoids	3
Fuel Oil Transfer System	3
Fuel Oil System from Day Tank to Injectors	3
Diesel Coolers and Associated Piping and Valves (Service Water side)	3
Control Room HVAC	3

SECTION II NOTES:

1. Mechanical components included within each mechanical system include hangers, fittings, flanges, vessels, tanks, etc. as necessary to perform the system safety function.

2. Instrumentation lines shall be classified as follows:

   a. Lines 3/4 inch and smaller which are part of the reactor coolant pressure boundary shall be Safety Class 2 to a closed valve, orifice, excess flow check valve, other flow limiting device or sensing instrumentation.

   b. All instrument lines which are connected to the reactor coolant pressure boundary and are utilized to activate safety systems shall be Safety Class 2 to the sensing instrumentation.

c. All instrument lines not connected to the reactor coolant pressure boundary but used to actuate a safety system shall be the same classification as the system to which they are attached.

III. ELECTRICAL SYSTEMS AND COMPONENTS

COMPONENTS

4160 Volt Bus 3

Breaker 3T1
RHR Service Water Pump B
RHR Service Water Pump D

Service Water Pump B
Service Water Pump D
RHR Pump C
RHR Pump D
Core Spray Pump B
480 Volt Bus 8

4160 Volt Bus 4

Breaker 4T2
RHR Service Water Pump A
RHR Service Water Pump C
Service Water Pump A
Service Water Pump C
RHR Pump A
RHR Pump B
Core Spray Pump A
480 Volt Bus 9

480 Volt Switchgear Bus 8

480 V MCC 8A*
480 V MCC 8B*
480 V MCC 8C*

480 Volt Switchgear Bus 9

480 V MCC 9A*
480 V MCC 9B*
480 V MCC 9C*
480 V MCC 9D*

UPS - 1A

480 V MCC 89A*

UPS - 1B

480 V MCC 89B*

Diesel Generator 1A*

Diesel Generator 1B*

125 V DC Distribution Panel DC-1

125 V DC MCC DC-1A*
125 V DC MCC DC-1B*
125 V DC MCC DC-1C*
HPCI V23-16
Diesel Control Power
4 KV Switchgear Control Power*
480 V Switchgear Control Power*

125 V DC Distribution Panel DC-2

125 V DC MCC DC-2A*
125 V DC MCC DC-2B*
125 V DC MCC DC-2C*
RCIC V13-16
Diesel Control Power
4 KV Switchgear Control Power*
480 V Switchgear Control Power*

120/240 Volt AC Instrumentation Distribution Panel*

SECTION III NOTES:

1. For those electrical systems or components designated with an asterisk (*) above, Quality Assurance electrical program requirements are applicable only to those portions of systems as defined in Section II as necessary to perform the system safety function.

2. Electrical components included within each electrical system include power source, breaker, control circuit, cable, relaying and operating device (motor, solenoid, heater, relay, etc.) as necessary to perform the system safety function.

3. Certain components are excluded from the QA program requirements if they meet the criteria described in Section V.

IV. INSTRUMENTATION SYSTEMS AND COMPONENTS

Reactor Protection System
Primary Containment Isolation System
Nuclear Boiler Instrumentation
High Pressure Coolant Injection System Initiation and Isolation
Reactor Core Isolation Cooling System Initiation and Isolation
Core Spray System Initiation
Low Pressure Coolant Injection System Initiation
Automatic Blowdown System
Standby Liquid Control System
Neutron Monitoring System (IRM and APRM)
Standby Gas Treatment System Initiation
Post Accident Instrumentation
SJAE Off Gas Radiation Monitor

SECTION IV NOTES

1. For those instrumentation systems designated above, Quality Assurance instrumentation program requirements are applicable only to those portions of systems defined in Section II as necessary to perform the system safety function.

2. Instrumentation components included within each instrumentation system include power supply, sensors, relays, wiring and final operating device (solenoid, relay, etc.) as necessary to perform the system safety function.

3. Certain components are excluded from the QA program requirements if they meet the criteria described in Section V.

V. ELECTRICAL AND INSTRUMENTATION SYSTEM COMPONENT EXCLUSION CRITERIA

1. Any component of an electrical system Section III or instrumentation system Section IV is excluded from the QA Program requirements if it meets the following criteria:

   a. A failure of the component by electrical shorting, open circuiting, grounding or mechanical failure would not render the system incapable of performing its intended safety function.

   b. A failure of the fluid pressure boundary of the component would not render the system incapable of performing its intended safety function.

   c. It is not used to operate or control a device required by Technical Specifications.

2. Small spare parts having no traceability, such as commercial off the-shelf items, may be purchased as non-safety-related and then qualified for use in equipment requiring Quality Assurance. Examples of such items are resistors, capacitors, switches, indicators, coils, wire, connectors, solid state devices and miscellaneous hardware.

VI. OTHER ITEMS REQUIRING QUALITY ASSURANCE

1. Boric Acid
2. Diesel Fuel Oil
3. Weld Rod
4. Chemicals
   a. Resins

5. Reagents (including shelf life)
   a. Those reagents used in performance of analyses required by Technical Specifications.
6. Packaging of Radioactive Materials
7. Fire Protection for safety-related areas
8. Nitrogen for Containment Inerting Only

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CLASSIFICATION OF STRUCTURES, COMPONENTS AND SYSTEMS

I. Electrical Systems and Components

Electrical and Instrumentation systems and components not originally designed in accordance with IEEE Standard 279, "Criteria for Protection Systems for Nuclear Power Generating Stations" and IEEE Standard 308, "Criteria for Class IE Electric Systems for Nuclear Power Generating Stations" have been classfied as safety class, and are listed below:

A. 480 Volt Emergency Buses
B. 480 Volt Emergency Motor Control Centers
C. 125 Volt D.C. Batteries
D. Battery Chargers
E. 125 Volt Distribution Switchboards
F. Diesel Generators
G. Diesel Generator Control Panels
H. Manual Throwovers (in emergency power system)
I. Reactor Protection
J. Safety Injection Actuation
K. Containment Isolation Actuation
L. Containment Hydrogen Control

Section I Notes:

1. For those electrical and instrumentation systems designated above, Quality Assurance instrumentation program requirements are applicable only to those portions of systems defined in Section III as necessary to perform the system safety function.

2. Instrumentation components included within each instrumentation system include power supply, sensors, relays, wiring and final operating device (solenoid, relay, etc.) as necessary to perform the system safety function.

3. Electrical components included within each electrical system include power source breaker, control circuit, cable, relaying and operating device (motor, solenoid, heater, relay, etc.) as necessary to perform the system safety function.

4. Certain Components are excluded from the QA Program requirements if they meet the criteria described in Section II.

II. Electrical and Instrumentation System Component Exclusion Criteria

1. Any component of an electrical instrumentation system (Section I) is excluded from the QA Program requirements if it meets the following criteria:

   a. A failure of the component by electrical shorting, open circuiting, grounding or mechanical failure would not render the system incapable of performing its intended safety function.

   b. A failure of the fluid pressure boundary of the component would not render the system incapable of performing its intended safety function.

   c. It is not used to operate or control a device required by Technical Specifications.

2. Small spare parts having no traceability, such as commercial offthe-shelf items, may be purchased as non-safety-related and then qualified for use in equipment requiring Quality Assurance. Examples of such items are resistors, capacitors, switches, indicators, coils, wire, connectors, solid state devices and miscellaneous hardware.

III. Mechanical Structures, Components and Systems

Mechanical systems and components have been nuclear safety classified in accordance with ANSI Standard N18.2 "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants."

Corresponding component supports that provide a safety function are in the same safety class as the components for which they provide support.

Component safety class designations are listed in the Attached Table D.1.

IV. Other Items Requiring Quality Assurance

1. Fuel Assemblies
2. Boric Acid
3. Diesel Fuel Oil
4. Weld Rod
5. Chemicals
   a. Hydrogen
   b. Nitrogen
   c. Morpholine
   d. Hydrazine
   e. Resins

6. Reagents (including shelf life)
   a. Those reagents used in performance of analyses required by Technical Specifications.
7. Packaging of Radioactive Materials
8. Fire Protection for safety-related areas

TABLE D.1

(Sheet 1 of 5)

MECHANICAL STRUCTURES, COMPONENTS AND SYSTEMS CLASSIFICATION LIST

STRUCTURE(S)	SAFETY CLASS
Vapor Container	2
COMPONENTS AND SYSTEMS	
Main Coolant System	
Reactor Vessel	1
Control Rod Drive Mechanism Housing	1
Steam Generator (tube side)	1
Steam Generator (shell side)	2
Pressurizer	1
Pressurizer Surge and Spray Line	1
Safety Valves	1
Relief Valves	1
Valves to Main Coolant System Boundary	1
Main Coolant Loop Isolation Valves	1
Main Coolant Check Valves	1
Main Coolant Loop Bypass Line	1
Incore Flux Tubes	2
Pressurizer Vent Capillaries	1
Main Coolant Piping	1
Main Coolant Pressure Control and Relief Rupture Disc	1
Main Coolant Pressure Control and Relief (from Vapor Container Penetration to Low Pressure Surge Tank)	2
Main Coolant Vent System (from Pressurizer Capillaries to Low Pressure Surge Tank and Sample Sink Cooler)	2
Feedwater System	
Emergency Boiler Feed Pump	3
Demineralized Water Storage Tank	3
Feedwater Piping (from Motor Operated Feed Valve to Feed Regulating Valve)	3
Feedwater Piping (from Feedwater Regulating Valve to Steam Generator)	2

TABLE D.1

(Sheet 2 of 5)

COMPONENT	SAFETY CLASS
Service Water System	
Service Water Pumps	3
Valves and Piping up to and through charging pump oil coolers and purification pump bearing	3
Primary Makeup Water System	
Primary Water Storage Tank	3
Piping System (from Primary Water Storage Tank to Demineralized Water Storage Tank and Seal Water Tank)	3
Piping System (from demineralized Water Storage Tank through Emergency Boiler Feed Pump to Steam Generator Feedwater System)	3
Primary Pumps Sealing System (from Primary water Storage Tank through Seal Water Tank to Primary Pump Seals)	3
Seal Tank Makeup Pumps	3
Seal Water Tank	3
Post Accident Hydrogen Vent System	
Piping and Valves from Vapor Container (V.C.) to and including Hydrogen Analyzer Isolation Valves	2
Chemical and Volume Control System	
Feed and Bleed Heat Exchangers	1
Bleedline Orifices	1
Low Pressure Surge Tank (L.P.S.T.)	2
Charging Pumps	2
Low Pressure Surge Tank Cooler (includes piping system and cooler tubes)	2
Low Pressure Surge Tank Cooler (Shell)	3
Low Pressure Surge Tank Cooling Pump	2
Bleedline Piping (from Main Coolant System to orifice motor operated isolation valve)	1
Charging System Piping (from Low Pressure Surge Tank to Check Valves in Vapor Container)	2
Charging System Piping (from Check Valves in Vapor Container to Main Coolant System)	1

TABLE D.1

(Sheet 3 of 5)

COMPONENT	SAFETY CLASS
Purification Pumps	2
Boric Acid Mix Tank	3
Boric Acid Transfer Pump	3
Boric Acid Mix Tank Heating System	3
Safety Injection System	
Safety Injection Tank (S.I.T.)	2
Low Pressure Safety Injection Pumps	2
High Pressure Safety Injection Pumps	2
Safety Injection Accumulator	2
Nitrogen Storage Bottles	2
Nitrogen Regulating Valves	2
Safety Injection Indificual Loop Motor Operated Valves	1
Safety Injection Tank Heater (Steam side)	3
Vapor Container Recirculation System Piping	2
Core Shutdown Cooling System	
Shutdown Cooling Pump	2
Shutdown Cooling Pump Heat Exchanger (tube)	2
Shutdown Cooling Pump Heat Exchanger (shell)	3
Shutdown Cooling Piping (from Main Coolant System to and including Motor Operated valves)	1
Shutdown Cooling Piping (from motor operated valve through cooler and pump to motor operated valve)	2
Liquid Waste System	
Primary Drain Collecting Tank	3
Waste Holdup Tank	3
Activity Decay and Dilution Tank	3
Primary Drain Collecting Tank Pumps	3
Component Cooling Water System	
Component Cooling Water Pumps	3
Component Cooling Heat Exchangers	3
Component Cooler Surge Tank	3

TABLE D.1

(Sheet 4 of 5)

COMPONENT	SAFETY CLASS
Component Cooling Piping (to and from Vapor Container)	2
Component Cooling Piping (from Pumps through components outside of Vapor Container)	3
Main Steam System	
Main Steam Piping (from Steam Generator up to and including Non-Return Valves)	2
Safety Valves	2
Atmospheric Steam Dump	2
Steam Dump to Main Condenser	2
Auxiliary Steam Piping (from trip valve at Main Steam System to Emergency Boiler Feed Pump)	3
Steam Generator Blowdown System	
Piping (up to and including air operated trip valve)	2
Sample and Drain System	
Drain and Sample Piping (from Main Coolant System to Sample and Drain motor operated isolation valves)	1
High Pressure Sample Cooler (including piping from motor operated isolation valves)	2
Containment Ventilation	
Ventilation Ring Duct	2
Post Accident Fans	2
Vapor Container Heating Piping System	2
Emergency Diesel Generator System	
Fuel Oil Storage Tank	3
Diesel Fuel Day Tanks	3
Fuel Oil Transfer Pumps	3
Diesel Engines	3
Diesel Fuel Filters	3
Fuel Oil Piping System	3

TABLE D.1

(Sheet 5 of 5)

COMPONENT	ANSI SAFETY CLASS
Spent Fuel Pit Cooling and Cleanup System	
Spent Fuel Pit Transfer Pump	3
Spent Fuel Pit Cooler	3
Spent Fuel Pit Cooling Piping	3
Fuel Transfer System	
Fuel Chute (from lower lock valve to first joint in V.C.)	2