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>>>>>>> UNIT 1 NUQAP TOPICAL REPORT REVISION DISTRIBUTION <<<<<<<

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WATERFORD, CT 06385 FAX 440-2057

SUBJECT: UNIT 1 NUQAP TOPICAL REPORT REVISION

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Northeast Nuclear
Energy Company

Memo

Decomm-00-429

Date: November 9, 2000

To: Millstone Unit 1 Northeast Utilities Quality Assurance Program Topical Report Controlled Copy Holders

From: S. Strout, NSRA

Subject: Distribution of MP1 NUQAP Revision 1 Change 2

Enclosed is Millstone Unit 1 Northeast Utilities Quality Assurance Program (MP1 NUQAP) Topical Report Revision 1, Change 2. This revision was approved as LBDCR M1-00-052 and updates the Topical Report to reflect recent organizational changes.

Change Instructions:

Remove	Insert
	Summary of Change 2 to Revision 1
Sections 1.0 through 18.0, except tabs.	Each Section, following appropriate tabs.
Appendix D, E, F, and G	Each Appendix, following appropriate tabs.

This change is became effective on November 9, 2000 and should be inserted in the manual upon receipt.

Please complete and return the attached Nuclear Document Services coversheet/transmittal form to NDS acknowledging that you have received and inserted your copy of the subject revision.

Enclosure

cc: R. B. Lundin
Nuclear Records
File

Summary of Change 2 to Revision 1

Section	Description of Changes
Sections 1.0 - 18.0 and appendices D, E, F, G	1. Wide scale revision to incorporate the change to a process based organization on Units 2 and 3. This includes a restructuring of section 1.2 and 1.3 and organization name changes throughout Topical Report. 2. Use of "NNECO" "NUSCO" and "NU" throughout the document has been eliminated wherever practical. 3. Minor grammatical corrections in punctuation or capitalization were included.
Appendix F	1. The station organization has changed the position of SORC chairman from the SVP & CNO to an appointed position. Since this was changed in the Unit 2/3 NUQAP, it must has been incorporated here.

1.0 ORGANIZATION

1.1 INTRODUCTION

This section describes the organizations involved in the operation and technical support of Millstone Unit 1. In addition, this section describes the responsibilities governed by the Millstone Unit 1 Quality Assurance Program. Qualifications for key personnel are found in the Unit 1 Technical Specifications and in Appendix B of this Topical Report, "Qualification and Experience Requirements."

NOTE
In the remainder of this Topical Report, the text generally applies specifically to Millstone Unit 1. Where indicated, some references are also made to station - wide functions that apply to all three Millstone Station units. Station (Units 2 and 3) organizations may supply services to, or use services from, the Unit 1 organization, with appropriate controls. Unit 1 is defueled and in a decommissioning mode.

1.2 LINE OF AUTHORITY TO THE UNIT 1 ORGANIZATION

The Chairman, President and Chief Executive Officer (CEO) of **Northeast Utilities** (NU) has ultimate responsibility and overall authority for the NU nuclear program, and is the Chairman of Northeast Nuclear Energy Company (NNECO), the licensed operator of Millstone Units 1, 2 and 3. The Chairman of NNECO has delegated the necessary responsibility and authority for all nuclear operations to the President and CEO-NNECO. In addition, Northeast Utilities Service Company (NUSCO) provides certain support services to NNECO. The President and CEO-NNECO is also the President-Generation Group of NUSCO.

1.2.1 Senior Vice President and CNO-Millstone (SVP & CNO)

The SVP & CNO has been delegated the necessary responsibility and authority for the management and direction of all activities related to the operation of Millstone Nuclear Power Station (MNPS), including the decommissioning of Millstone Unit 1. The SVP & CNO has overall responsibility for engineering, construction, operation, maintenance, modification and quality assurance, including this Millstone Unit 1 Quality Assurance Program, at MNPS.

1.2.2 **VP-Decommissioning** (VP-Nuclear Work Services)

The VP-Decommissioning is the officer in charge of Millstone Unit 1 decommissioning activities and implementation of this Millstone Unit 1 Quality Assurance Program. The **Unit 1 General Manager reports directly to the VP-Decommissioning.**

1.3 STATION ORGANIZATIONS SUPPORTING UNIT 1

NOTE

The following text describes only the Millstone Station process elements directly supporting Millstone Unit 1. For information on other aspects of the Station organization including reporting relationships refer to the Northeast Utilities Quality Assurance Program Topical Report.

1.3.1 **Support** Services

The **Support** Services group is responsible for services in support of the entire station, including security, fire protection **and nuclear records management**.

1.3.2 **Procure the Asset**

The **Procure the Asset** group is responsible for procurement. Responsibilities include approval and oversight of vendors that provide quality-related material and services including source and receipt inspection.

1.3.3 Training

The Training group is responsible for operator and technical training. The operator training group **is independent of the Unit 1 organization** to provide sufficient organizational freedom and independence from operating pressures as required by the unit Technical Specifications.

1.3.4 **Assessment**

Assessment includes Emergency Planning. The Emergency Planning group is responsible for development and maintenance of the site radiological emergency plan and the development and coordination of required off-site radiological emergency plan.

1.4 KEY UNIT 1 MANAGEMENT RESPONSIBILITIES AND AUTHORITY

1.4.1 Unit 1 General Manager

The Unit 1 General Manager is responsible for the safe and efficient decommissioning of Unit 1, including operations, engineering, nuclear safety, radiation protection, maintenance and associated support services, and implementation of this Millstone Unit 1 Quality Assurance Program. The following report to the Unit 1 General Manager:

- Director-Unit 1 Operations
- Director-Decommissioning
- Manager-Unit 1 Nuclear Oversight

1.4.2 Director-Unit 1 Operations

The Director-Unit 1 Operations is responsible for the safe and efficient operation of Unit 1 in its decommissioning mode. The Director-Unit 1 Operations is also responsible for work management, maintenance, health physics, and radiological waste. The Manager-Health Physics fulfills the "Health Physics Manager" position qualifications required by the Unit 1 Technical Specifications. The following report directly to the Director-Unit 1 Operations:

- Manager-Work Management
- Manager-Health Physics
- Manager-Chemistry
- Manager-Operations

1.4.3 Director-Decommissioning

The Director-Decommissioning is responsible for planning and executing the decommissioning of Unit 1, including associated engineering.

The Unit 1 engineering organization is responsible for:

- Design engineering functions, supporting activities, and engineering programs. Unit 1 engineering will share responsibility with **the appropriate Unit 2 or 3 organizations** for certain systems shared between Unit 1 and Units 2 or 3.
- Configuration management, safety analysis, and nuclear fuel, including probabilistic risk assessment, radiological and radwaste engineering, design and configuration control and engineering assurance.
- Plant engineering, including engineering technical support and systems engineering, reactor and material engineering.

1.4.4 Manager-Unit 1 Nuclear Oversight

The Manager-Unit 1 Nuclear Oversight has been delegated the necessary authority and responsibility for the following:

- Direction of the Unit 1 quality assurance program
- Development and implementation of policies, plans, requirements, procedures, and audits
- Preparation and issuance of the Millstone Unit 1 Quality Assurance Program
- Verification of the implementation of Millstone Unit 1 Quality Assurance Program requirements and of compliance with 10CFR50 Appendix B and other regulatory requirements
- Identification of quality problems
- Recommendations or solutions to quality problems and verification of the implementation of the solutions

Verification is performed through a planned program of audits, surveillances and inspections by Unit 1 Nuclear Oversight. The Manager-Unit 1 Nuclear Oversight provides objective evidence to management of the performance of quality activities independent of the individual or group directly responsible for performing the specific activity.

The Manager-Unit 1 Nuclear Oversight has the authority and organizational freedom to verify activities affecting quality. This is performed independent of undue influences and responsibilities for schedules and costs.

In order to implement these responsibilities, the Manager-Unit 1 Nuclear Oversight is provided "Stop Work" authority **to** suspend unsatisfactory work and control further processing or installation of non-conforming materials. The authority to stop work is assigned to Unit 1 Nuclear Oversight personnel and delineated in an approved procedure.

To ensure the necessary independence from cost and schedule considerations and to ensure adequate authority and organizational freedom, the Manager-Unit 1 Nuclear Oversight also has a direct line of communication to the SVP & CNO.

1.4.5 Unit 1 Work Management

Unit 1 Work Management is responsible for installation, maintenance, alterations, adjustment and calibration, replacement and repair of plant electrical and mechanical equipment, and instruments and controls. Responsibilities include establishing standards and frequency of calibration for instrumentation

and ensuring instrumentation and related testing equipment are properly used, inspected and maintained.

1.4.6 Unit 1 Health Physics

The Unit 1 Health Physics group carries out health physics functions and reports to the Director-Unit 1 Operations to provide sufficient organizational freedom and independence from operating pressures as required by the unit Technical Specifications. The Manager-Health Physics fulfills the "Health Physics Manager" position qualifications required by the unit Technical Specifications. Radiation protection services include the following:

- scheduling and conducting radiation surveys including contamination sample collection
- determining contamination levels and assigning work restrictions through radiation work permits
- maintaining records and reports on radioactive contamination levels
- administering the personnel monitoring program and maintaining required records in accordance with federal and state codes

1.4.7 Unit 1 Operations

The Unit 1 Operations group reports to the Director-Unit 1 Operations. The group includes the following key supervisory positions:

- Manager-Operations
- Assistant Manager-Operations
- Shift Manager(s)
- Unit Supervisor(s)

1.4.7.1 Manager-Operations and Assistant Manager-Operations

The Manager-Operations provides general supervision for the operation of the unit, and coordinates unit operations with maintenance, work management, and other groups. As stipulated in Technical Specifications or in Appendix B, the Manager-Operations or the Assistant Manager-Operations shall be a Certified Fuel Handler. The Manager-Operations assures the safe and efficient operation of the unit in accordance with applicable licenses, operating instructions and procedures, and safety rules and regulations. The Manager-Operations delegates the necessary authority and responsibility for various duties to the Assistant Manager-Operations.

1.4.7.2 Shift Manager

The Shift Managers report to the Assistant Manager-Operations and are responsible for the Control Room command function. The Shift Manager is a Certified Fuel Handler. The Shift Manager directs and supervises the operation of the unit. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant are delegated to other operational personnel not on duty in the Control Room.

1.4.7.3 Unit Supervisor

The Unit Supervisor is a Certified Fuel Handler and supervises the operators in the Control Room. The Unit Supervisor directs activities of the Control Room operators, and may operate the controls of equipment and piping systems from the Control Room or alternate station control location.

1.4.7.4 Control Operators

Control Operators hold a Certified Fuel Handler or Equipment Operator qualification on the unit. The Control Operators are responsible to perform the following duties:

- Start up, operate, and shut down nuclear plant equipment as necessary to satisfy Unit conditions
- Test, as scheduled, control room instruments and controls
- Maintain required logs, observe these logs for indications of faulty operation, and notify the on-duty Shift Manager of abnormal plant conditions

1.4.7.5 Plant Equipment Operators

Plant Equipment Operators are responsible to perform the following duties:

- Start up, operate, inspect, adjust, and shut down all auxiliary and other various plant equipment
- Perform or assist with scheduled operational tests
- Make minor repairs

1.5 QUALITY-RELATED RESPONSIBILITIES COMMON TO ALL DEPARTMENT HEADS

The head of each department performing quality activities in accordance with the Millstone Unit 1 Quality Assurance Program is responsible for:

- Administering those activities within their organization which are required by this Millstone Unit 1 Quality Assurance Program;
- Ensuring implementation of the Millstone Unit 1 Quality Assurance Program;
- Establishing and clearly defining the duties and responsibilities of personnel within their organization who perform quality activities;
- Planning, selecting, and training personnel to meet the requirements of the Millstone Unit 1 Quality Assurance Program; and
- Performing and coordinating quality activities within their department and interfacing with the Unit 1 Nuclear Oversight department.

Each individual performing or verifying activities affecting quality is responsible to conduct those activities in accordance with the requirements of this Millstone Unit 1 Quality Assurance Program and implementing procedures. These individuals shall have direct access to such levels of management as may be necessary to perform this function.

The responsibility, authority, and organizational relationship for performing quality activities within each organization is established and delineated in organizational charts, policy statements, and written job or functional descriptions.

Vendors may be delegated the execution of quality assurance functions; however, **the Unit 1 General Manager** shall retain responsibility for this Millstone Unit 1 Quality Assurance Program.

1.6 ANNUAL MANAGEMENT QUALITY ASSURANCE REVIEW

The SVP & CNO is responsible for the assessment of the scope, status, implementation, and effectiveness of the Millstone Unit 1 Quality Assurance Program. To meet this responsibility, a team of qualified individuals is appointed by the SVP & CNO to perform an annual Management Quality Assurance Review. The team is made up of individuals knowledgeable in quality assurance, quality activities, auditing, management responsibilities, and the Millstone Unit 1 Quality Assurance Program. This review is:

- A systematic evaluation;
- pre-planned toward the objective of determining the adequacy of the Millstone Unit 1 Quality Assurance Program and its compliance with Appendix B to 10 CFR 50 and other regulatory requirements; and

- capable of identifying, communicating, and tracking any required corrective action.

1.7 RESOLUTION OF DISPUTES

The SVP & CNO resolves all disputes related to the implementation of the Millstone Unit 1 Quality Assurance Program for which resolution is not achieved at lower levels within the organization.

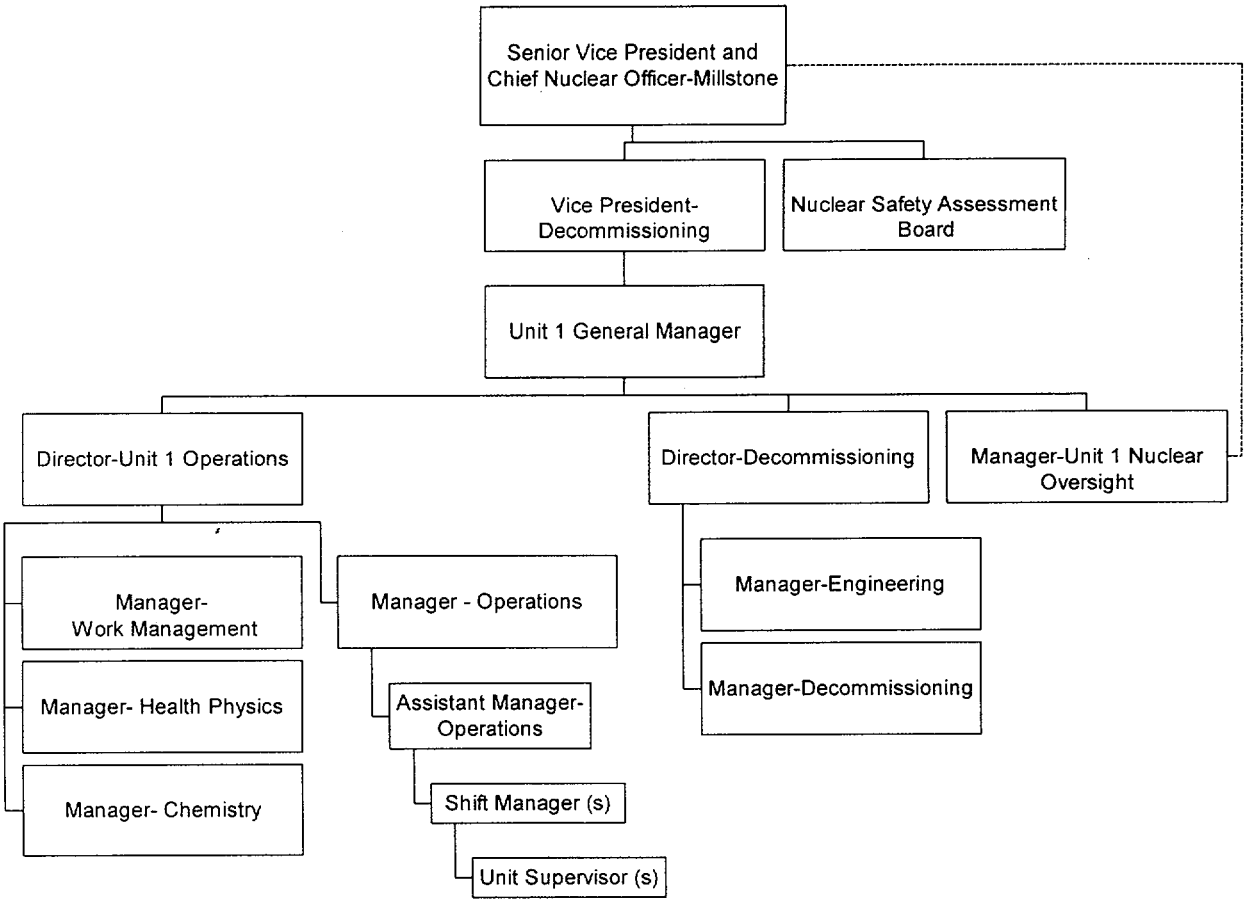
1.8 ORGANIZATION CHARTS

The organization chart shown on the following page is for the groups having quality functions for Millstone Unit 1.

NOTE
The following organization chart is incorporated by reference in the Millstone Station emergency plan. Changes to this organization chart require an effectiveness review in accordance with 10 CFR 50.54 (q).

Organizational Relationship of Functional Groups Having Quality Functions for Millstone Unit 1

Note: Officers and Organizations with station responsibilities are not shown.



2.0 QUALITY ASSURANCE PROGRAM

2.1 GENERAL REQUIREMENTS

This Quality Assurance Program for Millstone Unit 1 complies with the criteria of 10CFR50, Appendix B, and follows the regulatory documents and their endorsed ANSI/IEEE standards identified in Appendix C with exceptions as identified in Appendix E. The quality assurance requirements set forth in the attached Policy Statement, supplemented by quality assurance procedures, provide the primary basis of this program and the policy with regard to quality assurance for Millstone Unit 1. This Millstone Unit 1 Quality Assurance Program is established to accomplish the required level of quality in activities carried out throughout the decommissioning of Millstone Unit 1.

This Millstone Unit 1 Quality Assurance Program applies in its entirety to all activities affecting the safety-related functions of structures, systems and components. Safety-Related structures, systems and components are defined in the DSAR. This Millstone Unit 1 Quality Assurance Program is also applicable in its entirety to materials, equipment, parts, consumables and services designated Category I.

Portions of this Millstone Unit 1 Quality Assurance Program are also applicable to Fire Protection Quality Assurance (FPQA) and Radwaste Quality Assurance (RWQA), which are delineated in applicable procedures.

The Materials, Equipment, and Parts List (MEPL) Program provides instructions to identify structures, systems, components, materials, equipment, parts, consumables, quality software and activities that need to be identified as safety-related or augmented quality.

The requirements of this Millstone Unit 1 Quality Assurance Program are implemented by **Station and Millstone Unit 1 personnel and by** vendors performing activities affecting quality structures, systems, and components of the Station's nuclear power plants.

Procedures define the required indoctrination and training of personnel performing activities affecting quality, as necessary, to assure that suitable proficiency is achieved and maintained.

Training sessions are documented. The content of the training sessions is described, attendees and attendance date indicated, and the results (e.g., examination results) of the training sessions recorded, as applicable.

Periodic program review of the status and adequacy of this Millstone Unit 1 Quality Assurance Program is accomplished by Unit 1 Nuclear Oversight audits, surveillances and inspections, by Nuclear Safety Assessment Board (NSAB) reviews, and by the independent review team which performs the annual Management Quality Assurance

Review described herein and in Section 1.6. **Vendors or outside** organizations are required to review the status and adequacy of that part of this Millstone Unit 1 Quality Assurance Program for which they have been delegated responsibility.

2.2 IMPLEMENTATION

2.2.1 Goals and Objectives

The goals of this Millstone Unit 1 Quality Assurance Program are to maintain quality levels in an effective and efficient manner and to assure a high degree of functional integrity and reliability of Station nuclear power plant quality structures, systems, and components. To meet these goals, the following objectives of this Millstone Unit 1 Quality Assurance Program have been defined:

a. Define, through procedures, the quality activities that apply to design, fabrication, procurement, construction, testing, operation, repair, maintenance and modification of the Millstone Unit 1;

b. Establish, assign, and document the responsibilities for the conduct of those activities affecting quality structures, systems, and components;

c. Establish confidence that (a) quality activities for Millstone Unit 1 are performed consistent with **station** policies and (b) quality activities are performed by qualified personnel, and are verified through a system of audits, surveillances, and inspections of those organizations with quality responsibilities;

d. Apprise the Senior Vice President and Chief Nuclear Officer - Millstone (SVP & CNO) of unresolved problems and trends which could have a significant effect on nuclear power plant safety.

2.2.2 Program Documentation

This Millstone Unit 1 Quality Assurance Manual defines the nuclear policies, goals, and objectives, and is used as guidance for the development of the various department procedures. Revisions to this Millstone Unit 1 Quality Assurance Program shall be made as needed to reflect current requirements and descriptions of activities prior to implementation. These revisions shall be made in accordance with **an approved** procedure.

Revisions to this Millstone Unit 1 Quality Assurance Program which reduce commitments previously accepted by the NRC are submitted to the NRC for review and approval prior to implementation.

Revisions which do not reduce previously accepted commitments are periodically submitted to the NRC as required by 10 CFR 50.54 (a)(3) and 10 CFR 50.71(e) and (f).

Quality procedures are developed by the departments performing quality activities. These procedures are reviewed for concurrence by the departments which are responsible for implementing portions of these procedures and are approved by the initiating department. The Unit 1 Nuclear Oversight Department reviews other department quality procedures for compliance with this Millstone Unit 1 Quality Assurance Program and concurs with such procedures as described in section 5.0, "Procedures, Instructions and Drawings." Changes to procedures are subjected to the same degree of control as that utilized in the preparation of the original document.

Each Vice President and **department head** is responsible for implementation of this Millstone Unit 1 Quality Assurance Program within their organization, which includes individual departmental procedure requirements applicable only to their respective activities. In addition, they are responsible for the preparation, approval, and distribution of those instructions, operating procedures, testing procedures, or other instructions where further guidance is necessary.

2.2.3 Structures, Systems and Components

This Millstone Unit 1 Quality Assurance Program applies to all activities affecting the safety-related functions of the structures, systems and components as addressed in the Defueled Safety Analysis Report (DSAR). Safety-Related structures, systems, and components are defined in the DSAR.

For structures, systems and components covered by the ASME Code, procedures describe the measures taken to assure that the quality assurance requirements contained in the code are supplemented by the specific guidance of the applicable regulatory guides and endorsed ANSI standards listed in Appendix C.

For structures, systems and components, regulatory commitments and procedures describe the measures taken to assure that the quality assurance requirements are met.

The degree of control over activities affecting quality structures, systems, and components is consistent with their importance to safety. Such controls include use of appropriate equipment, establishment of suitable environmental conditions, and assurance that all prerequisites for a given activity have been satisfied. This Millstone Unit 1 Quality Assurance Program provides controls over special processes and skills necessary to attain the required quality, and the need for verification of quality by inspection and test.

The Unit 1 Nuclear Oversight Department and applicable technical organizations jointly determine and identify the extent quality assurance controls are applied to quality structures, systems, and components. The quality assurance controls are in conformance with this Millstone Unit 1 Quality Assurance Program, which complies with the 18 criteria set forth in Appendix B to 10 CFR 50.

2.2.4 Participating Organizations

The organization for Millstone Unit 1 activities affecting the quality of structures, systems, and components is identified in section 1.0, "Organization," which also briefly describes assigned responsibilities.

The Unit 1 Nuclear Oversight Department is responsible for: a) the development, coordination, and administrative control of this Millstone Unit 1 Quality Assurance Program including coordination of Unit 1 Nuclear Oversight Department procedure review and approval; b) assuring issuance of this Millstone Unit 1 Quality Assurance Program as a controlled document (as described in section 6.0, "Document Control," and; c) the review and concurrence with quality procedures and revisions written by other departments. Procedure reviews shall be performed in accordance with section 5.0, "Procedures, Instructions, and Drawings."

Approved vendors performing quality activities **shall** invoke upon their subvendors, via purchase orders/contracts, requirements for a quality assurance program to meet the applicable criteria of Appendix B to 10 CFR 50, including the applicable elements of the regulatory guides and their endorsed ANSI/IEEE standards identified in Appendix C. However, **The Millstone Unit 1 organization** retains overall responsibility for the Millstone Unit 1 Quality Assurance Program. The specific quality activities performed by **vendor** organizations are specified in the procurement documents. **The Procure the Asset group** is responsible for the review and approval of these vendors' quality assurance programs prior to initiation of contracted activities.

The object of the review is to verify that these vendors have an adequate quality assurance program to meet applicable requirements of 10 CFR 50, Appendix B.

In addition to the initial review, **the Procure the Asset group** is responsible for the subsequent performance, as appropriate, of audits, surveillances, and inspections of approved vendor's quality assurance programs to assure continued implementation of quality requirements. **The Procure the Asset group** assures that the quality assurance programs of vendors that perform quality activities are periodically reviewed to assure that the vendors are implementing adequate programs. Evaluation, review, and monitoring of vendor quality programs is conducted in accordance with section 7.0, "Control of Purchased Material, Equipment and Services."

Vendors may be delegated the execution of quality assurance functions by Contract. These Contracts are reviewed and approved in accordance with this Millstone Unit 1 Quality Assurance Program. These vendors may be contracted to perform quality activities under their approved quality assurance program or directly under the requirements of this Millstone Unit 1 Quality Assurance Program.

2.2.5 Indoctrination and Training

A program is established and maintained for quality assurance indoctrination and training which provides confidence that the required level of personnel competence and skill is achieved and maintained in the performance of quality activities. Quality procedures delineate the requirements for an indoctrination program to assure that personnel responsible for performing quality activities are instructed in the purpose, scope, and implementation of quality procedures and that compliance to these documents is mandatory. Each department is responsible for assuring assigned personnel who perform quality activities have been appropriately indoctrinated and trained.

Nuclear training programs shall be developed and implemented to provide training for all individuals attached to or associated with Millstone Unit 1. Additional guidance is established in procedures.

Procedures describe the nuclear training program requirements, which assure that:

a. Documentation of formal training and qualification programs includes the objective, content of the program, attendees, date of attendance; and results (e.g., examination results), as applicable.

b. Proficiency of personnel performing and verifying activities affecting quality is established and maintained. Personnel proficiency is established and maintained by training, examination/testing, and/or certification based upon the requirements of the activity. Acceptance criteria are developed to determine if individuals are properly trained and qualified;

c. Certificates or other documentation of qualification clearly delineate the specific functions personnel are qualified to perform and the criteria used to qualify personnel in each function.

This program also requires the head of each department to be responsible for a training plan which assures that personnel performing quality activities are trained in the principles and techniques of the activity being performed.

2.2.6 Management Participation

Millstone Power Station Vice Presidents and **department heads** are responsible for implementing this Millstone Unit 1 Quality Assurance Program within their organizations. The Manager-Unit 1 Nuclear Oversight will assist in development, coordination, and review of the program.

The SVP & CNO assures that a management review of this Millstone Unit 1 Quality Assurance Program is conducted on an annual basis by an independent team to assess the scope, status, implementation, and effectiveness, and to assure compliance with NRC licensing commitments.

Actions considered by the Management Quality Assurance Review may include, but are not limited to:

a. Review of selected procedures and documents;

b. Verification of the implementation of selected procedural requirements;

c. Review of past audit results and other inspection/review results such as those from previous Management Quality Assurance Reviews, the NRC or other departments.

The Management Quality Assurance Review's findings of deficiencies and recommendations for program improvement are forwarded to the SVP & CNO who shall assure appropriate corrective action is taken.

3.0 DESIGN CONTROL

3.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to assure that the applicable design requirements, such as design bases, regulatory requirements, codes, technical standards and quality standards, are identified in design documents which are reviewed, approved and controlled in accordance with procedures. Such measures include review for suitability of application of materials, equipment, parts and processes that are essential to the functions of quality structures, systems, and components. Changes to and deviations from specified requirements are identified, documented and controlled.

Unit 1 Engineering (under Unit 1 Decommissioning) is responsible for controlling design work, administering design control activities (including design interface) and design modifications for quality structures, systems, and components.

The responsibility for administration of the design control program rests with Unit 1 Engineering. The division of responsibilities and jurisdictional boundaries for design control program implementation are set forth in procedures. Although other organizations may be delegated the task of establishing and executing the design control program or any part thereof, Unit 1 Engineering shall retain overall responsibility for the program. The applicable requirements of this Millstone Unit 1 Quality Assurance **Program** shall be imposed on other organizations delegated the task of establishing or executing the design control program in accordance with section 4.0, "Procurement Document Control" and section 7.0, "Control of Purchased Material, Equipment and Services."

The interface controls, both internal and external, for organizations performing design work for quality structures, systems, and components are identified and implemented in accordance with procedures. This identification includes those organizations providing criteria, designs, specifications and technical direction.

Measures are applied to verify the adequacy of design. The extent of design verification is specified and documented by the responsible organization. The individuals performing design verification should not (1) have immediate supervisory responsibility for the individual performing the design, (2) have specified a singular design approach, (3) have ruled out certain design considerations, or (4) have established the design inputs for the particular design aspect being verified. The independent design verification should not dilute or replace the responsibility of the supervisors for the quality of work performed under their supervision. Where changes to previously verified designs have been made, design verifications are required for the change, including evaluation of the effects of those changes on the overall design. Design verification may be accomplished by testing. Tests to demonstrate adequacy under adverse design conditions shall comply with the requirements of section 11.0, "Test Control." Design errors and deficiencies which adversely affect quality structures, systems, and components in the design

process are documented and appropriate corrective action is taken. These design errors and deficiencies are documented in accordance with design change procedures or as defined in section 15.0, "Nonconforming Material, Parts, Components, or Services" and/or section 16.0, "Corrective Action."

3.2 IMPLEMENTATION

Unit 1 Engineering is responsible for the design, design review, engineering approval of design changes, design evaluation and design control for the unit. Although some portion of the design process may be delegated to other organizations, the Unit 1 Engineering organization has the responsibility for overall design and final engineering decisions and design control of Unit 1 quality structures, systems, and components.

Unit 1 Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, to verify that departments are effectively complying with this Millstone Unit 1 Quality Assurance Program and procedural requirements for design control. Additionally, audits, surveillances and inspections are performed, as appropriate, to verify that vendors are effectively complying with their quality assurance program requirements for design control.

3.2.1 Design Process

Design control measures are applied to design analyses, such as reactor physics, stress, thermal, hydraulic, nuclear radiation, accident and seismic analyses; compatibility of materials; accessibility for in-service inspection, maintenance, and repair; and delineation of acceptance criteria for inspections and test. Measures established to control design documents are described in section 6.0, "Document Control."

Program procedures and instructions define the method of implementing design control measures. These measures require that applicable design requirements, such as, design bases, regulatory requirements, codes and standards, are translated into specifications, drawings, procedures or instructions. Procedures and instructions further require that appropriate quality standards are specified and included in design documents. Materials, equipment, parts and processes, including standard "off the shelf" commercial or previously approved items essential to quality functions are selected and reviewed for suitability of application. The basis for selection may include industry standards, material and prototype hardware testing programs, and design review.

Procedures assure that a documented check is performed to verify the accuracy and completeness of design drawings and specifications before release for procurement, fabrication or construction. Design drawings receive a documented check to verify dimensional accuracy.

Design drawings and specifications issued for design changes are reviewed for completeness and accuracy before release to operations, in accordance with design control procedures.

Procedures describe the provisions to assure that design drawings and specifications are prepared, reviewed and approved in accordance with **Unit 1 Engineering** requirements and that the documents contain the necessary quality assurance requirements, such as inspections and test requirements, acceptance requirements, and the extent of documenting inspection and test results.

3.2.2 Design Change Control

Procedures and instructions governing design change control during modifications to the Station nuclear plants, the control of discrepant or deficient design conditions, and the reporting of unsatisfactory performance provide for the identification of the need for design changes and a documented method to control these changes. Design and specification changes are subject to design control measures commensurate with those applied during the original design as amended by applicable design or licensing basis changes.

An independent review and approval of design changes is performed by the organization that conducted the original design reviews, unless such review is performed by Unit 1 Engineering or another qualified organization delegated by Unit 1 Decommissioning to perform this function.

Proposed design change modifications are submitted to the appropriate Unit 1 Engineering management for processing and review. This review includes the appropriate on-site review committee(s) as required by applicable procedures. If the change involves a quality structure, system or component, the change shall be reviewed by qualified engineering personnel for technical adequacy. Reviews of the safety evaluations associated with proposed design changes are performed by the Nuclear Safety Assessment Board (NSAB). The sequence of the NSAB review depends upon the determination of whether an unreviewed safety question is involved (i.e., in accordance with ANSI N18.7, if a proposed change in the facility involves an unreviewed safety question then the NSAB review is conducted prior to submittal of the proposed change to the NRC for review and the issuance of a license amendment for its implementation).

The combination of these independent reviews by the on-site review committee(s) and NSAB is performed to assure that:

a. the adequacy of the proposed change is substantiated;

b. unreviewed safety questions are properly identified and handled per 10 CFR 50.59;

c. nuclear safety requirements have been addressed.

Errors and deficiencies in design, including the design process, that could adversely affect quality structures, systems, and components are documented and corrective action is taken in accordance with section 15.0, "Nonconforming Materials, Parts, Components, or Services" and/or section 16.0, "Corrective Action."

Notification of design changes are transmitted to responsible plant personnel prior to implementation and as part of the design change package close out. Procedures describe this notification which assures that personnel are made aware of design change modifications which may affect the performance of their duties.

3.2.3 Design Interface Control

Procedures and instructions identify design interface controls and the resolution of design interface questions during modifications to the station nuclear power plants.

3.2.4 Independent Design Verification

Original designs and design modifications are reviewed for adequacy and the sign-off performed by a person other than the originator of the design. The originator's supervisor may perform this independent review only if the supervisor: (1) did not specify a singular design approach, (2) did not establish the design inputs or rule out certain design considerations, (3) is the only individual in the organization competent to perform the review. Where the supervisor performs the design review, the next level of management shall fulfill the supervisor's responsibilities. Design verification is documented in accordance with procedures or instructions. Simplified calculations or computer programs may be utilized as alternate means of design verification. When design verification is performed by testing, the tests are performed using procedures, which specify the authority and responsibility of design verification personnel. Responsibility for design adequacy and evaluation is retained by Unit 1 Engineering.

Design verification (if other than by qualification testing) is normally completed prior to release for procurement, fabrication, and construction, or release to another organization for use in other design activities. For those cases where design verification cannot be completed prior to release for procurement, fabrication, and construction, procedures assure that design verification is completed prior to the point when the installation is declared operational.

Procedures describe the requirements which assure the following when testing is considered as an alternate method of design verification:

a. Specifications or procedures provide criteria that specify when verification should be by test.

b. Prototype, component or feature testing is performed as early as possible prior to installation of plant equipment, or prior to the point when the installation is declared operational.

c. Verification by test performed under conditions that simulate the most adverse conditions as determined by analysis.

Particular emphasis is placed on assuring that designs are in conformance with applicable codes, and on selecting the proper design verification or checking method. Procedures and instructions provide the requirements and necessary controls for design verification. These controls include a review to assure that design characteristics can be controlled, verification that there is adequate accessibility for inspection or test, and that inspection and test acceptance criteria are incorporated. Documentation of reviews is provided.

Procedures include requirements which identify the responsibility of design verifiers, the areas and features to be verified, and the extent of the documentation.

Procedures assure that procedural control is established for design documents that reflect the commitments of the **DSAR**. These procedural controls vary for design documents which receive formal design verification by several disciplines or organizations, and those which can be reviewed by a single individual. The specific design documents and specialized reviews are determined and used as required by the design changes and modifications.

Procedures are established to assure that verified computer programs are certified for a specific use.

Unit 1 Engineering is responsible for assuring that the design documents generated by vendors for **Millstone Unit 1** are technically correct, approved, and maintained.

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to control the procurement of materials, equipment, parts and services for quality structures, systems, and components for Millstone Unit 1 to assure compliance with applicable regulatory requirements, procedures, quality assurance standards, and regulations affecting procurement documents. Changes to procurement documents are subject to the same degree of control as utilized in the preparation of the original documents.

4.2 IMPLEMENTATION

4.2.1 Program

A responsible engineer is selected for each modification to Millstone Unit 1. The responsible engineer coordinates the preparation, review and approval of procurement documents for quality materials, equipment, parts and services, and assures the technical adequacy and inclusion of quality assurance requirements.

Requests for materials, equipment, parts and services are reviewed for technical adequacy and verification of the quality designation. The appropriate responsible engineer/**manager** reviews and approves such requests in accordance with applicable procedures. **Procure the Asset group** personnel then perform a procurement engineering evaluation to assure the inclusion and adequacy of quality assurance requirements prior to the issuance of the purchase order. Materials, equipment, and parts for which technical and quality assurance requirements have been previously established within the Material Information Management System are purchased without additional procurement engineering evaluations.

Vendors utilized to perform quality activities for Millstone Unit 1 are responsible to implement measures for control of associated procurement documents to assure applicable requirements including quality assurance requirements are specified.

Audits, surveillances, and inspections are performed as appropriate to verify that these vendors are effectively complying with their quality assurance program requirements for the control of procurement documents.

Changes to procurement documents are subjected to the same degree of control as that utilized in the preparation of the original document. The procurement of spare or replacement parts for quality structures, systems, or components is subject to the controls of this Millstone Unit 1 Quality Assurance Program and

applicable procedure requirements. The spare or replacement parts are subject to controls equivalent to original or subsequent codes and standards. The use of subsequent codes and standards are controlled in accordance with section 3.0, "Design Control."

Engineering evaluations of requests for quality materials, equipment, parts, and services are performed **the Procure the Asset group** to assure that:

a. Adequate technical requirements are specified;

b. The quality assurance requirements are correctly stated, auditable and controllable;

c. There are adequate acceptance and rejection criteria.

4.2.2 Procurement Document Provisions

Procurement documents are prepared, reviewed and approved in accordance with applicable procedures of the issuing organization or department and are available for verification. These procedures require that procurement documents consist of the following, as necessary:

a. The scope of work to be performed;

b. Technical requirements (specified or referenced) including the applicable components and materials Identification requirements, drawings, specifications, procedures, instructions, codes and regulations, and the identification of applicable test, inspection and acceptance requirements, or special process instructions;

c. Quality assurance program requirements to be imposed on vendors which include the applicable requirements of 10 CFR 50, Appendix B, and the NRC regulatory position contained in the regulatory guides and their endorsed ANSI/IEEE standards listed in Appendix C.

d. Right of access which provides, as appropriate, for access to vendor facilities and records for inspection or audit by **Station Organizations or their** designated representatives; and provides access for events such as those requiring notification of hold points;

e. The documentation required to be prepared, maintained, and/or submitted to **Station Organizations or their designated representatives** for review, approval or historical record. The time of submittal of this documentation and the retention and disposition of quality assurance records which are not submitted is prescribed, as applicable, for nuclear grade procurements.

4.2.3 Selection of Procurement Sources

The vendor is specified during the procurement process based upon the vendor approval status, qualifications and capabilities to provide the product or service, performance history, and **the** ability to verify the quality of the product or service being purchased. **The Procure the Asset group** maintains an approved vendors list based upon the technical and quality capability as determined by a direct evaluation of the vendor's facilities and personnel and the implementation of the vendor's quality assurance program.

Procurement documents may be issued to vendors with unapproved quality assurance programs. These procurement documents to unapproved vendor**s** contain detailed supplementary quality assurance requirements and/or witness/hold points to meet **Station** requirements.

Procurement documents are reviewed by **the Procure the Asset group** to assure appropriate quality assurance requirements are specified. The requirements include, as necessary, audits, surveillances, or inspections at the vendor's facilities with scheduled witness/hold points during the fabrication process and/or prior to shipment of the procured items. Acceptance inspections and tests determined **necessary** shall be performed after receipt at Millstone Power Station but prior to installation in the plant or prior to the point when the installation is declared operational.

5.0 PROCEDURES, INSTRUCTIONS AND DRAWINGS

5.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures for the preparation, review, approval, control and distribution of procedures, instructions and drawings for activities affecting quality structures, systems, and components of Millstone Unit 1. The documents include appropriate quantitative and qualitative acceptance criteria which specify the activity to be performed, the methods of fabrication, construction, and testing to be employed; the materials, equipment or parts to be used; a sequence of operation, and the required documentation.

5.2 IMPLEMENTATION

Quality procedures provide direction for personnel performing quality activities. The Unit 1 Nuclear Oversight Department reviews and concurs with other department quality procedures which implement this Millstone Unit 1 Quality Assurance Program as described in Section 5.2.1 below. Comments concerning compliance with this Millstone Unit 1 Quality Assurance Program and regulatory requirements are resolved prior to issuance of the procedure. Any vendors utilized to perform quality activities for Millstone Unit 1 may be delegated responsibility for preparing, maintaining, issuing and verifying the implementation of appropriate program documents which are selectively reviewed/approved by the appropriate **department head** or **r**esponsible **e**ngineer. Audits, surveillances, and inspections are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for compliance with procedures and instructions. Vendor quality assurance programs are required to clearly delineate the actions to be accomplished in the preparation, review and control of procedures, instructions and drawings and the methods for complying with 10 CFR 50, Appendix B.

5.2.1 Procedures and Instructions

Procedures and instructions for activities affecting quality are prepared, reviewed, and approved in accordance with written procedures and instructions.

The cognizant **department head** or responsible engineer assures that any vendors utilized to perform quality activities for Millstone Unit 1 implement quality assurance programs which contain written instructions for preparation, review and approval of procedures and instructions affecting quality. In addition, vendor quality procedures and quality control inspection procedures which are to be used for onsite activities are reviewed for concurrence by Unit 1 Nuclear Oversight to assure compliance with the Millstone Unit 1 Quality Assurance Program.

Millstone Unit 1 Departments are responsible for the preparation, review and approval of Unit 1 quality procedures. The procedures include test procedures and administrative procedures which implement the requirements of this Millstone Unit 1 Quality Assurance Program. Each organization is also responsible for the preparation, review and approval of procedures covering quality activities in accordance with individual license requirements. The Unit 1 Nuclear Oversight Department reviews and concurs with quality procedures and special process procedures. The criteria for documents requiring Unit 1 Nuclear Oversight review and concurrence and their identification are defined in quality procedures to assure:

a. Administrative procedures and manuals comply with this Millstone Unit 1 Quality Assurance Program and applicable Appendix C regulatory guides and endorsed ANSI/IEEE standards.

b. Work procedures and work documents used to perform quality activities have the necessary quality assurance controls as described in Section 10.0, "Inspection."

5.2.2 Drawings

The design control and verification measures described in Section 3.0, "Design Control," are applicable for the review and approval of drawings. Review and approval of new drawings or modifications to existing drawings are described in procedures. The originating organization may delegate to other organizations or departments the work of design and review activities, or any part thereof, but retains responsibility for this work.

The measures taken to assure the preparation of as-built drawings and related documentation in a timely manner to accurately reflect the actual plant are described in procedures. Drawings critical to operation are updated prior to system turnover to operation and are available to the operating personnel.

5.2.3 Acceptance Criteria

Cognizant department heads review and approve departmental procedures, instructions and drawings to assure the inclusion of adequate quantitative and qualitative acceptance criteria, as appropriate, for determining satisfactory work performance and quality compliance for applicable quality activities.

6.0 DOCUMENT CONTROL

6.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to assure controlled distribution of documents pertinent to quality activities performed for the Millstone Unit 1 plant in accordance with quality procedures.

Documents such as procedures, instructions, drawings, specifications and reports are prepared, reviewed for appropriate qualitative and quantitative acceptance criteria, and approved by authorized personnel in the affected organization. Approved controlled documents are distributed to affected locations in accordance with controlled distribution lists. Changes to controlled documents are reviewed and approved by the same organization which performed the original review and approval, unless otherwise specified in the applicable procedures. Measures are provided for controlling documents to preclude the possibility of use of outdated documents.

6.2 IMPLEMENTATION

6.2.1 Responsibility

Procedures and instructions delineate the measures for controlling documents including direction for the review for adequacy, approval by authorized personnel, distribution of controlled documents and verification that changes are promptly incorporated and implemented. These control measures apply to documents affecting quality structures, systems and components during the performance of quality activities for Millstone Unit 1 and include documents such as:

a. Design Specifications;

b. Design, Manufacturing, Construction and Installation Drawings;

c. As-Built Documents;

d. Quality Assurance Program Manuals, Procedures and Instructions;

e. Manufacturing, Inspection and Testing Instructions;

f. Test Procedures;

g. Calculations;

h. Engineering Record Correspondence;

i. Design Basis Documentation Summaries (DBDS)

j. Decommissioning Safety Analysis Report (DSAR);

k. Procurement Documents;

l. Design Change Records;

m. Topical Report;

n. Nonconformance Reports;

o. Computer Codes.

Procedures describe the measures taken by the Unit 1 Nuclear Oversight Department or individuals other than the person who generated the document but qualified in quality assurance for the control of documents to assure review and concurrence, as necessary, for such documents listed above with regards to quality assurance aspects.

The requirements for control of procurement documents are contained in Section 4.0, "Procurement Document Control." It is the responsibility of each organization issuing controlled documents to employ document control procedures. The issuing organization is additionally responsible for distribution of the documents to appropriate locations. There shall be provisions to assure that approved changes are included in instructions, procedures, drawings and other documents prior to implementation of the changes.

Any vendors utilized to perform quality activities for Millstone Unit 1 are responsible for implementing measures for review, approval, control and distribution of controlled documents to assure they are effectively complying with the requirements for document control. Audits, surveillances, and inspections are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for document control.

6.2.2 Distribution of Controlled Documents

Procedures specify in what manner controlled documents, and revisions thereof, are distributed to appropriate locations prior to commencing the work.

6.2.3 Drawing Control

The Support Services group is responsible to implement a program, through applicable procedures, for the retention and retrieval of drawings and records. **The Support Services group** maintains a drawing status file which includes drawings newly issued or revised with the latest revision and current status.

Vendors utilized to perform quality activities for Millstone Unit 1 may be delegated the function of drawing control and must furnish periodic status reports listing the revisions of applicable drawings which they issue.

Audits, surveillances, and inspections are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for control of drawings.

6.2.4 Procedure and Instruction Control

Unit 1 Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, to verify that departments are effectively complying with this Millstone Unit 1 Quality Assurance Program and procedural requirements, for control of procedures and instructions. Audits, surveillances, and inspections are performed, as appropriate, to verify vendors utilized to perform quality activities are effectively complying with their quality assurance program requirements for control of procedures and instructions.

The originating department is responsible for establishing adequate control over quality procedures and instructions issued by them. The responsible organization also issues status reports or revised indices listing the latest revision of applicable controlled documents issued by them.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures for the control of purchased material, equipment, parts and services utilized in quality activities for Millstone Unit 1 to assure conformance to procurement documents. These measures include provisions for source evaluation and selection, submission of objective evidence by the vendor or subvendors, inspection at the vendor facility, and acceptance inspection and testing of the product upon delivery. Control of quality by vendors and their subvendors is assessed for effectiveness at intervals consistent with the importance, complexity and quantity of the product or service.

7.2 IMPLEMENTATION

The evaluation and selection of vendors is performed in accordance with procedures, which specify that procurement source evaluation and selection measures are performed to determine vendor capability and delineate responsibilities of qualified personnel involved in the evaluation and selection process.

7.2.1 Vendor Qualifications

The Procure the Asset group utilizes one or more of the following methods in evaluating the qualifications of a potential vendor:

a. Audits performed **and/or coordinated** by Unit 1 Nuclear Oversight or **the Procure the Asset group;**

b. Other utility vendor audits and evaluations;

c. Nuclear Procurement Issues Committee (NUPIC) audits;

d. ASME N, NA, NPT, NV, or MM/ MS Certificate of Authorization;

e. Commercial grade surveys and/or coordinated review of a potential vendor utilizing one or more departments, (i.e., engineering, site services, operations; procurement);

f. Source inspection/surveillance.

Evaluations assure that vendors providing quality material, equipment, parts and services employ a quality assurance program that conforms to applicable portions of this Millstone Unit 1 Quality Assurance Program.

The Procure the Asset group is responsible for assuring that documented evidence of the evaluation and acceptance of the vendor's quality assurance program is maintained. The determination of vendor approval is based on such factors as prior performance, quality performance data, audits, commercial grade surveys, surveillances and evaluations of the vendor's quality assurance program.

Vendor Certificates of Conformance are periodically evaluated by audits, commercial grade surveys, surveillances, independent inspections and tests, to assure they are valid. This verification of Certificates of Conformance is documented.

7.2.2 Source Inspection

The Procure the Asset group is responsible for the performance of source inspections at vendor facilities to assure that the requirements of a purchase order/contract have been met.

Source inspections are performed in accordance with procedures which provide for the method of inspection, the extent of documentation required and those responsible for implementing those instructions.

Inspection of items occurs either when verifications of procurement requirements cannot be determined upon receipt or the vendor quality assurance program has not been accepted by **the Procure the Asset group**.

7.2.3 Receipt Inspection

Receipt inspection for procured items is performed by **the Procure the Asset group** in accordance with quality procedures which delineate requirements and responsibilities necessary to perform inspection functions. Contractual obligation fulfillment and specified requirements are verified during receipt inspections.

Receipt inspection of vendor-furnished material, equipment, and parts is performed to assure that these items and acceptance records are examined in accordance with predetermined inspection instructions prior to acceptance, installation and operation. Receipt inspections include, as appropriate:

a. Measures for verifying that the shipment is complete, properly identified, undamaged and corresponds with the required documentation;

b. Measures for inspection of the item's critical characteristics and review of supporting documentation (e.g., mill test reports, NDE reports) as required by the procurement documents;

c. Measures for inspection and acceptance of items in accordance with predetermined methods;

d. Measures for identifying and controlling acceptable items including identification of inspection status prior to release from the receiving inspection area;

e. Measures for identifying, segregating and handling nonconforming items;

f. Measures to ascertain that inspection records or Certificates of Conformance are acceptable prior to release for installation;

g. In cases involving purchased services, the responsible engineer or department head shall designate the means by which services may be accepted, and is given the authority to accept services in accordance with methods defined in procedures.

7.2.4 Vendor Furnished Records

Records required to be furnished by the vendor are specified in the procurement documents. Certifications or documentation provided by the vendor which attests to conformance, identifies that all the specific procurement requirements have been met (either by reference to the purchase order or by delineation).

The vendor must furnish the following records as a minimum for nuclear grade purchases:

a. Documentation that identifies the purchased material, equipment, or parts and the specific procurement requirements (e.g., codes, standards and specifications) which have been met by the items;

b. Documentation that identifies any procurement requirements which have not been met, together with a description of those Nonconformances dispositioned "accept as is" or "repair."

The responsible **Procure the Asset group or** other appropriate department personnel shall review for acceptability those documents which pertain to the requirements in the procurement document, in accordance with this Millstone Unit 1 Quality Assurance Program and applicable procedures.

The department that is contracting onsite quality assurance services shall be responsible for the review and acceptability of vendor personnel/equipment certifications prior to the start of work. The Unit 1 Nuclear Oversight department shall provide oversight of these activities via surveillance, or inspection, as appropriate, to verify compliance with this requirement.

7.2.5 Commercial Dedication

Procedures address the measures taken to assure that for commercial grade items, where specific quality assurance controls for nuclear applications cannot be imposed in a practicable manner, that special dedication requirements are established and implemented.

These measures follow the guidance in Regulatory Guide 1.144, paragraph C.3.b(1) and Regulatory Guide 1.123 and applicable paragraphs of Section 10 of ANSI N45.2.13.

These measures include appropriate requirements for special categorization and identification within the procurement document, receiving inspection, and additional controls during the installation and testing process.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

8.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures for the identification and control of materials, parts and components, including partially fabricated assemblies utilized in quality activities for Millstone Unit 1. To assure that each item can be traced to associated documentation, the identification of the item is maintained by heat number, lot number, part number, serial number, or other appropriate methods, and is physically marked on the item and/or on records traceable to the item. Documentation associated with materials, parts, and components delineate that these items have been designed, fabricated, manufactured, tested and/or inspected in accordance with the specified requirements. The object of these controls is to prevent the use of incorrect or defective materials, parts and components.

These measures also require that the identification of inspections, tests, and operation status of structures, systems, and components is known to affected organizations.

8.2 IMPLEMENTATION

Procedures establish the responsibilities and requirements for the identification and control of materials, parts and components. The procedures assure that identification and control are maintained throughout fabrication, receipt, handling, storage and installation of items. Provisions include:

a. Requirements for traceability to appropriate documentation such as: purchase orders, contracts, manufacturing documents, drawings, specifications, certifications, inspection and test records, and nonconformance reports;

b. Controls to assure that the correct identification of an item is verified and documented prior to release for fabrication, assembly, shipping or installation;

c. Requirements which assure that the method or location of markings do not affect the function or quality of an item;

d. Establishment of identification requirements in purchase orders, contracts, specifications, drawings, procedures or instructions.

During the performance of quality activities for Millstone Unit 1, any portion of the implementation of the identification and control program **may be delegated** to a vendor. If delegated, contracts require that the vendor establish an identification and control program which meets this Millstone Unit 1 Quality Assurance Program requirements. Audits, surveillances, and inspections are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for identification and control of materials, parts and components.

Receipt inspections are performed to verify that materials, parts and components are properly identified in accordance with procurement requirements. **The Procure the Asset group** is responsible for assigning and applying necessary identification to the items in accordance with applicable procedures to assure proper identification and traceabiltiy.

In the event that materials, parts or components are nonconforming or the identification becomes lost or illegible, the items are considered nonconforming and are identified and controlled in accordance with Section 15.0, "Nonconforming Materials, Parts, Components, or Services."

9.0 CONTROL OF SPECIAL PROCESSES

9.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to assure the control of special processes associated with quality structures, systems, and components of Millstone Unit 1 by the use of qualified procedures, equipment and personnel.

Special processes are performed under controlled conditions in accordance with special requirements and may include, but are not limited to: welding, cleaning, heat treating, and nondestructive examination and/or testing.

9.2 IMPLEMENTATION

During quality activities performed for Millstone Unit 1, the responsible engineer assures that special process data and documentation is reviewed, and that vendor special process procedures utilized for Millstone Unit 1 are qualified and approved, and that personnel and equipment utilizing special processes are properly qualified prior to start of work. Audits, surveillances, and inspections are performed, as appropriate to verify that these vendors are effectively complying with their quality assurance program requirements for control of special processes.

Special process procedures utilized during quality activities for Millstone Unit 1 are prepared, reviewed and approved in accordance with procedures as specified in Section 5.0, "Procedures, Instructions, and Drawings."

9.2.1 Procedure Qualification and Control

Procedures specify that written process control documents are utilized and qualified, as required, in accordance with the applicable specification, codes or standards.

9.2.2 Personnel Qualification and Certification

Codes, standards and procedures specify personnel qualification/certification requirements. Personnel responsible for the performance and verification of special processes are trained, tested, and certified as required by applicable specifications, codes and standards. Requirements for the period of certification, examinations, and certification renewal of personnel are also specified. Vendors qualify personnel and maintain records of qualified personnel in accordance with applicable codes, standards, specifications, and vendor purchase order/contract requirements.

The department that is contracting services is responsible for the review of records of qualified personnel, equipment and procedures associated with special processes. **The Procure the Asset group** or Unit 1 Nuclear Oversight shall provide an oversight function via audits, surveillances, or inspections, as appropriate.

The Unit 1 Nuclear Oversight Department is responsible for assuring the training, testing, and certification of Millstone Unit 1 NDE personnel are in accordance with the requirements of Regulatory Guide 1.58 (Rev. 1, 9/80) and ASNT Recommended Practice No. SNT-TC-1A.

9.2.3 Special Process Records

Records provide objective evidence that special processes were performed in accordance with applicable procedures, by qualified personnel, and that when required by procedures, specifications and codes, such performance was verified. Results of nondestructive examinations are recorded in accordance with applicable specifications, codes and standards. These records are retained by the vendor or supplied to **Millstone Unit 1** as required by contract or purchase order. If records are to be retained by the vendor, the contract or purchase order specifies the retention period and instruction for final disposition of records.

Special process documentation such as special process procedures, qualifying data, and personnel and equipment qualification records associated with the performance of special processes at **Millstone Unit 1,** are kept current and maintained in appropriate files, with final disposition to the Station Nuclear Document Services Facility.

10.0 INSPECTION

10.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to assure that inspections of Millstone Unit 1 quality structures, systems, and components to verify conformance with documented procedures, instructions and drawings are executed in accordance with procedures by qualified personnel independent from the individual or group performing the activity being inspected. If inspection is impossible or disadvantageous, indirect controls by monitoring processing methods, equipment and personnel are provided. Inspection notification and hold points are identified, as required, in the applicable documents.

10.2 IMPLEMENTATION

10.2.1 Inspection Responsibilities

During the performance of quality activities for Millstone Unit 1, procedures shall define the need for inspection (e.g., receipt inspection, installation, and product acceptance) to assure quality requirements are met.

Unit 1 Nuclear Oversight shall perform, as appropriate, audits and surveillances as defined in Unit 1 Nuclear Oversight procedures to verify that procedural requirements are met.

The Unit 1 Nuclear Oversight Department shall perform inspections of modification and maintenance activities for quality structures, systems, and components. The criteria used to determine when Unit 1 Nuclear Oversight inspection shall be required for these activities and for the preparation of inspection plans shall be identified in Unit 1 Nuclear Oversight procedures. The Unit 1 Nuclear Oversight inspection function includes:

a. Identification of inspection personnel;

b. Review of work procedures and work documents for adequacy of inspection and mandatory hold points;

c. Preparation and approval of inspection plans ensuring that the necessary inspection requirements, methods, and acceptance criteria have been identified;

d. Documentation of inspection results.

Audits, surveillances, and inspections, are performed as appropriate, to verify that any vendor utilized to perform quality activities for Millstone Unit 1 are

effectively complying with their quality assurance program requirements for inspection and for the performance or witnessing of inspections at hold or notification points identified in procurement documents. Unit 1 Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, of onsite vendor activities in this area. All audit, surveillance, and inspection activities are performed under requirements specified in quality procedures.

10.2.2 Inspection Plans

Documented inspection plans may be either a separate document or an integral part of work instruction documents. The plans are based on design specifications, procurement documents, drawings, other specifications, or previous experience, as appropriate.

During the performance of quality activities, procedures provide criteria for the determination of accuracy requirements of inspection equipment and when inspections are required. These procedures describe requirements for the preparation of inspection plans by the Unit 1 Nuclear Oversight Department. Audits and surveillances are performed by the Unit 1 Nuclear Oversight Department, as appropriate, to verify the implementation of the inspection plans.

The inspection criteria, including the use of inspection equipment and their accuracy requirements, are specified in the work procedures, work documents, or inspection plans.

10.2.3 Inspection Personnel and Inspection Document Access

Inspections are performed by individuals other than those who performed or directly supervised the activity being inspected. Inspection personnel are qualified and/or certified in accordance with appropriate codes, standards, and/or training programs.

Inspections are performed by Unit 1 Nuclear Oversight Department personnel, qualified contracted personnel, and **Station** personnel who are independent from undue pressure such as cost or schedule considerations. Unit 1 Nuclear Oversight shall assure the certification of its contracted inspection personnel is acceptable prior to the performance of inspection activities. When other departments are contracting for onsite quality assurance inspection services, these departments shall be responsible for the review and acceptability of personnel/equipment certification prior to the start of inspection activities. Unit 1 Nuclear Oversight shall perform audits and surveillances, as appropriate, to verify other department compliance with these requirements.

When vendors are contracted to perform onsite inspection services, their quality control inspection plans/procedures are reviewed and concurred with by Unit 1 Nuclear Oversight in accordance with Section 5.0, "Procedures, Instructions, and Drawings."

Access to drawings, procedures, specifications or other documented criteria necessary for the performance of inspections is provided prior to performing the inspection activity.

10.2.4 Inspection Procedures

Required inspection or surveillance activities are performed and documented according to procedures and/or checklists. Inspection procedures, plans or checklists contain the following:

a. Identification of characteristics to be inspected;

b. Identification of the individual or groups responsible for performing the inspections;

c. Requirements for the necessary measuring and test equipment and the required accuracy of this equipment;

d. Acceptance criteria;

e. A description of the method of inspection when other than direct visual examination using the unaided eye;

f. A record of the results of the inspection;

g. Record of inspector or data recorder.

Procedures specify surveillance of processing methods or testing and operation of equipment when inspection is impossible, inaccessible or not applicable.

Modification, repair, replacement, or rework items are inspected in accordance with original inspection requirements or approved alternatives.

10.2.5 Mandatory Hold and Notification Points

Mandatory hold points are utilized when an inspection or operation must be performed or witnessed and signed off by the responsible personnel before work can proceed. Mandatory hold points are identified to assure attributes critical to achieving quality requirements at work completion have been verified. Mandatory notification points are used to identify the operations or completed processes that **Millstone Unit 1** or its representatives may elect to witness and/or inspect during the fabrication, construction and installation process. Mandatory hold points and notification points, as required, are identified in procurement documents and onsite work procedures/work documents. Procurement documents and onsite work procedures/work documents are subject to the review and concurrence for adequacy of inspection, notification and/or

mandatory hold controls by **the Procure the Asset group** and Unit 1 Nuclear Oversight, respectively.

10.2.6 Inspection Results Evaluation

Inspection results are evaluated for acceptability in accordance with applicable procedures which identify the responsible organization.

The evaluations are performed by the personnel who are qualified in accordance with the appropriate regulatory guide and endorsed ANSI standard listed in Appendix C.

Unit 1 Nuclear Oversight performs audits and surveillances, as appropriate, to verify that inspections are performed in accordance with the requirements of applicable procedures.

11.0 TEST CONTROL

11.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program requires a documented test control program for Millstone Unit 1 quality structures, systems, and components be established to assure that they will perform satisfactorily in service and that test results are documented in accordance with applicable regulatory and technical requirements.

The test control program identifies the quality structures, systems, and components to be tested, method of conducting tests, evaluation of tests and documentation of tests by qualified personnel to assure requirements have been satisfied.

The test control program is systematic and includes proof tests prior to installation, construction tests, operational tests, surveillance tests, and tests following repairs, reworks, replacements, preventive maintenance or modifications as required to verify performance will be satisfactory during operation.

11.2 IMPLEMENTATION

11.2.1 Test Program

Test requirements to determine or to verify the capability of an item to meet specified requirements in accordance with design documents, Safety Analysis Reports (SAR), Technical Specifications, procedures or procurement documents, as appropriate, are accomplished by subjecting the item to a set of physical, chemical, environmental or operating conditions. Tests following repair, rework, replacement, preventive maintenance or modification is performed, as required, in accordance with the original design requirements of the item or acceptable alternatives, as applicable. A test may be repeated when original test results are invalidated.

Procedures delineate the methods and responsibilities for controlling, accomplishing and documenting testing of the Millstone Unit 1 quality structures, systems, and components.

Vendors utilized to perform quality activities for Millstone Unit 1 are responsible for implementing measures for the control of tests to assure that materials, equipment and parts used in quality structures, systems, and components will perform satisfactorily. Audits, surveillances, and inspections, are performed as appropriate, to verify the performance of selected proof tests when hold points have been identified in purchase order/contracts and to verify these vendors are complying with their quality assurance program requirements for test control. Unit 1 Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, of onsite vendor activities in this area. **The Procure the Asset**

group and Unit 1 Nuclear Oversight are responsible for assuring documentation associated with these verification activities are maintained in the appropriate files until forwarded to the Station Nuclear Records Facility in accordance with applicable procedures.

Proof tests, product acceptance tests, post maintenance or modification tests, and periodic surveillance tests are conducted by qualified personnel in accordance with applicable procedures. Personnel performing tests assure that calibrated equipment and instrumentation utilized are within the calibration interval specified. Documentation including test procedures and approved data sheets are maintained in appropriate files until forwarded to the Station Nuclear Records Facility in accordance with applicable procedures.

11.2.2 Test Procedure Preparation and Test Performance

Testing is accomplished in accordance with approved test procedures which incorporate or reference the requirements and acceptance criteria in the applicable design and procurement documents. The test procedure or test program documents include the following as a minimum:

a. Instructions for the testing method used;

b. Required test equipment and instrumentation;

c. Test requirements, such as acceptance criteria;

d. Hold, notification, inspection points, if required, and data collection points;

e. Test prerequisites such as: calibrated instrumentation; trained, qualified, and licensed or certified personnel; preparation, condition and completeness of item to be tested; suitable and controlled environmental conditions;

f. Methods for documenting or recording test data and results;

g. Provisions for data collection and storage.

11.2.3 Test Equipment

Procedures provide the criteria for determining when a test is required and the accuracy requirements of test equipment. The following steps are taken for the control of test equipment:

a. To assure accuracy, test equipment is checked and calibrated in accordance with procedures;

b. Plant instrumentation used in testing is calibrated. It is maintained in calibration at regular intervals in accordance with established surveillance and/or preventative maintenance procedures;

c. Where special instrumentation is required for testing, the requirements are stated in the procedures. Instrument characteristics, including accuracy requirements, are equivalent to or better than those specified by the vendor.

11.2.4 Evaluation of Test Results

The documented test results are evaluated against the predetermined acceptance criteria by an individual or group having appropriate qualifications. The acceptance status of the test is documented. Deficiencies noted during the evaluation are documented and dispositioned in accordance with procedures.

The evaluation of test results may also be delegated to vendors. When delegated, the vendor is required to assure the use of qualified personnel, evaluate the data against predetermined criteria and document the results of the evaluation and acceptance status of the test. Audits, surveillances, and inspections, are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for test control. Unit 1 Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, of onsite vendor activities in this area.

12.0 CONTROL OF MEASURING AND TESTING EQUIPMENT

12.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures for the control of measuring and testing equipment (M&TE) used as the basis for acceptance during inspection, testing, and measurement of materials, equipment, and parts affecting quality structures, systems, and components. Periodic calibration and adjustment of M&TE is performed and controlled to assure accuracy is maintained within limits necessary to verify that design and operating condition requirements have been met. Documentation is retained such that all items of M&TE are traceable to their calibration records.

12.2 IMPLEMENTATION

12.2.1 Calibration Program

Procedures delineate the methods and responsibilities for the control, maintenance and calibration of M&TE including portable and temporarily installed instruments, tools, gages, fixtures, reference and transfer standards, and nondestructive test equipment.

Documentation associated with the calibration of all M&TE is maintained in appropriate files and retained as quality records in accordance with the Nuclear Records Program. When the information for the control, use, and calibration of M&TE is in electronic form, this information is controlled and protected in accordance with applicable procedures.

The calibration program is implemented in accordance with the requirements defined in procedures which describe the measures utilized to maintain the calibration of the M&TE. Functional groups are responsible for implementing these procedures which comply with the requirements contained in specifications and drawings. Procedures related to the M&TE calibration program are reviewed and approved by the appropriate on-site review committeeor the Station Qualified Reviewer Program, as defined in applicable procedures. **The Procure the Asset group** or the appropriate M&TE custodian, as delineated by the purchase order, is responsible for verifying that receipt of calibrated equipment is in conformance with the requirements of procurement documents. **The Procure the Asset group** and Unit 1 Nuclear Oversight are responsible for control of calibrated M&TE used during their inspections.

Department heads/job supervisors are responsible to assure that M&TE is calibrated, issued, and controlled in accordance with the requirements of applicable procedures.

The Unit 1 Nuclear Oversight Department performs audits, surveillances, and inspections, as appropriate, to verify implementation of the calibration program.

Vendors utilized to perform quality activities for **Millstone Unit 1** are responsible for implementing measures for the control of M&TE to assure the M&TE are properly calibrated, adjusted and maintained at specified intervals in order to maintain accuracy within required limits. Audits, surveillances, and inspections, are performed, as appropriate, to verify these vendors are effectively complying with their quality assurance program requirements for control of M&TE.

12.2.2 Calibration Standards

Measuring and test equipment is calibrated at specified intervals based on the required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement. Measuring and test equipment shall be permanently marked or tagged with a unique Identification number and the date calibrated and next calibration date indicated on the M&TE.

Procedures describe the measures taken to assure that reference and transfer standards are traceable to nationally recognized standards and that, where national standards do not exist, provisions are established to document the basis for calibration.

Calibration of this equipment should be against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated. When this is not possible, the standards shall have an accuracy that assures the equipment being calibrated shall be within required tolerance and the basis of acceptance is documented and authorized by the appropriate on-site review committee. In addition, the calibrating standards shall have greater accuracy than secondary standards being calibrated. Calibrating standards with the same accuracy may be used if they can be shown to be adequate for the requirements and the basis of acceptance is documented.

12.2.3 "Out of Tolerance" Control

M&TE and reference standards when found out of tolerance are so identified and removed from service. A timely review is conducted to determine the validity of previous inspection or test results gained through use of the instrument, and of the acceptability of items previously measured or tested. Where it is determined that use of out of tolerance measuring and test equipment may have resulted in a condition adverse to quality, the condition is promptly identified and corrective action is implemented in accordance with Section 15, "Nonconforming Materials, Parts, Components or Services" and Section 16, "Corrective Action" respectively as appropriate.

13.0 HANDLING, STORAGE AND SHIPPING

13.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures to assure proper handling, storage, shipping, cleaning and preservation of materials, equipment and parts used for Millstone Unit 1 quality structures, systems, and components in order to preclude damage, loss or deterioration.

13.2 IMPLEMENTATION

13.2.1 General

Procedures, instructions and procurement documents define the requirements and responsibilities for the handling, storage, shipping, cleaning and preservation of materials, equipment, and parts required for implementation of established design and specification requirements.

Handling, storage, shipping, cleaning and preservation of materials, equipment and parts is conducted in accordance with applicable procedures and procurement documents. Vendors utilized to perform quality activities for Millstone Unit 1 are responsible for implementing measures for handling, storage, shipping, cleaning and preservation of materials, equipment and parts to preclude damage, loss or deterioration. Audits, surveillances, and inspections are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for handling, storage, shipping, cleaning and preservation of materials, equipment and parts.

13.2.2 Establishment of Special Handling, Storage, Shipping, Cleaning and Preservation Requirements

Special or additional handling, storage, shipping, cleaning and preservation requirements are to be identified and implemented as specified in procurement documents and applicable procedures. These established requirements are consistent with the regulatory positions of the NRC regulatory guides and their endorsed ANSI standards listed in Appendix C, or specifications and/or vendor technical manuals, and shall be consistent with accepted industry standards.

Procedures describe the measures taken for the storage of chemicals, reagents (including control of shelf life), lubricants, and other consumable materials.

14.0 INSPECTION, TEST AND OPERATING STATUS

14.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program provides measures for indication, by the use of marking such as stamps, tags, labels or other suitable means, the status of tests and inspections of materials, equipment and parts to preclude the inadvertent bypassing of inspection and test requirements during quality activities performed for Millstone Unit 1. These measures provide for the identification of items which have satisfactorily passed required inspections and tests. Measures are also established for indicating the operating status of quality structures, systems, and components to prevent inadvertent operation.

14.2 IMPLEMENTATION

14.2.1 General

Vendors utilized to perform quality activities for Millstone Unit 1 are responsible for implementing approved measures for the identification of inspection and test status of quality material, equipment and parts to preclude the bypassing of requirements. Audits, surveillances, and inspections, are performed, as appropriate, to verify that these vendors are effectively complying with their quality assurance program requirements for identification of inspection and test status. Elements of this system require that vendors have a controlled fabrication and test operation in order to preclude the inadvertent bypassing of process inspections or tests, and to provide a positive identification of component status throughout all phases of fabrication, testing, and inspection by means of tagging, routing cards, stamping, manufacturing or test reports, labeling or other appropriate methods.

When receipt inspections are performed for Millstone Unit 1, **the Procure the Asset group** assures that traceability is maintained for acceptable quality materials, equipment and parts to indicate conformance to purchase order/contract requirements with the exception of nuclear fuel assemblies, for which traceability is maintained by Reactor Engineering and Nuclear Engineering. Nonconforming materials, equipment and parts are identified in accordance with Section 15.0, " Nonconforming Materials, Parts, Components, or Services."

During tests and inspections of Millstone Unit 1, a status tagging system is implemented by procedure to prevent inadvertent operations of quality structures, systems, and components.

Procedures describe the measures taken to control the altering of the sequence of required tests, inspections and other operations. The review and approval for

these actions is subject to the same control as taken during the original review and approval of tests, inspections and other operations.

14.2.2 Status Identification and Control

Procedures and instructions describe control of the application and removal of markings such as stamps, tags, labels, and other suitable means to indicate the status of quality structures, systems, and components to prevent inadvertent operation, and to preclude omission of inspections, tests or other critical operations. These procedures and instructions delineate the requirements, methods and responsibilities for indicating the status of the affected items. The status of all items requiring calibration is recorded and maintained in accordance with applicable procedures.

Records associated with status identification are maintained in accordance with applicable procedures.

15.0 NONCONFORMING MATERIALS, PARTS, COMPONENTS OR SERVICES

15.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program requires the documentation and control of nonconforming materials, parts, components, or services be performed in accordance with procedures to prevent inadvertent use or installation in Millstone Unit 1 quality structures, systems, or components. These procedures include requirements for identification, documentation, segregation and disposition of nonconforming items; and notification to affected organizations.

15.2 IMPLEMENTATION

15.2.1 Program

Procedures define personnel responsibilities and establish various measures for identification, documentation, segregation, review and disposition of nonconforming item reports. The means for reporting nonconforming items are available to all personnel assigned at Millstone Unit 1 and other personnel involved with Millstone Unit 1 quality activities.

15.2.2 Documentation

Documentation of nonconforming items requires identification of the items, description of the nonconformance, disposition of the nonconformance, inspection requirements and signature approval of the disposition.

Tagging systems are utilized to physically identify nonconforming items prior to installation. **The Procure the Asset group** utilizes tags for received materials, parts and components.

15.2.3 Evaluation and Disposition

Evaluations are performed to determine the disposition of nonconforming items and services. The evaluation determines whether an item or service is to be used as is, returned to vendor, repaired, reworked, scrapped or salvaged. An engineering evaluation is performed, if necessary, prior to the resolution of nonconforming conditions. In addition, nonconformances are evaluated for impact on quality structure, system and component operability in accordance with applicable procedures. These evaluations assure that the final condition does not adversely affect safety, operation or maintenance of the item or service. Nonconforming item reports involving deviation from design bases such as "use as is" or "repair" are forwarded to the appropriate engineering organization for review, and disposition. Applicable information is accumulated and records are maintained.

The need to release/use nonconforming materials, parts or components shall be based on such considerations as:

a. Impact on plant safety;

b. Safety of personnel;

c. Suitability of items in the "as is" condition, i.e., probability of eventual satisfactory resolution of the nonconforming condition without repair, rework or replacement.

d. Accessibility of items after release;

e. Cost of removal and repair or replacement should items eventually have to be removed, repaired, or replaced;

f. Effect on the orderly progress of work.

Items repaired are verified by inspecting the items as originally inspected or by a documented method which is equivalent to the original inspection method. Items reworked may require inspection to verify conformance to requirements as defined in applicable procedures.

Unit 1 Nuclear Oversight performs audits and surveillances, as appropriate, to verify that dispositions for reports documenting nonconforming conditions are adequate.

15.2.4 Recurrence Control

A trend analysis of nonconforming conditions documenting program/procedural problems is performed in accordance with procedures. The trend analysis results are periodically reported to upper management, including the senior onsite and offsite nuclear officers and the senior manager responsible for measuring the effectiveness of the quality assurance program, for review and assessment as part of the Millstone Unit 1 Corrective Action Program reporting as described in Section 16.0, "Corrective Action."

16.0 CORRECTIVE ACTION

16.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program requires that an effective corrective action program be established to assure that conditions adverse to quality at Millstone Unit 1 are promptly identified, corrected, and documented in accordance with procedures. These procedures include measures for reporting to appropriate levels of management and determining the root cause and corrective action to preclude recurrence for conditions evaluated as significant conditions adverse to quality.

16.2 IMPLEMENTATION

16.2.1 Program

Procedures define personnel responsibilities and establish various measures for identification, documentation, review, engineering evaluation, disposition and correction of conditions adverse to quality. The means to identify conditions adverse to quality are available to all personnel assigned to Millstone Unit 1 and other personnel involved with Millstone Unit 1 quality activities.

16.2.2 Corrective Action and Follow-up

Procedures describe the measures taken to evaluate if conditions adverse to quality exist and to determine the need for immediate corrective action or disposition. Vice Presidents are responsible for assuring their assigned personnel and their vendors working onsite comply with the corrective action program and for assuring that corrective action is adequate and properly implemented in a timely manner within their organization. The Unit 1 Nuclear Oversight Department performs audits and surveillances, as appropriate, to verify that departments are effectively complying with this Millstone Unit 1 Quality Assurance Program and procedural requirements for the corrective action program and that corrective action is adequate and properly implemented in a timely manner. Audits, surveillances, and inspections, are performed, as appropriate to assure that vendors comply with their corrective action program and that corrective action is adequate.

The Senior Vice President and Chief Nuclear Officer - Millstone has the final authority in the event that agreement on the action to be taken is not reached at lower levels of the nuclear organization.

16.2.3 Recurrence Control

Procedures identify responsibility and provide direction for determining appropriate significance level based on actual or potential consequences for conditions adverse to quality.

The significance level determines the need for a root cause determination and for establishing the necessary action to prevent recurrence. In cases of significant conditions adverse to quality, the immediate corrective action, the cause, and recurrence control actions must be documented. Procedures establish the responsibilities and measures taken to accomplish these actions.

An analysis of adverse conditions is performed and trends which identify program/procedure problems are periodically reported to upper management, including the senior onsite and offsite nuclear officers and the senior manager responsible for measuring the effectiveness of the quality assurance program for review. Adverse trends concerning specific vendor performance shall be reported to the affected vendor for resolution and recurrence control, as appropriate.

17.0 QUALITY ASSURANCE RECORDS

17.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program requires the maintenance, identification, retention and retrieval of records to furnish evidence of quality activities performed for Millstone Unit 1 be implemented in accordance with procedures. These records include but are not limited to: operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance and material analyses. These records also include closely related data such as qualifications of personnel, procedures and equipment. Inspection and test records contain, as a minimum but are not limited to: identification of inspector or data recorder and the acceptability and the action taken in connection with any deficiencies and reportable occurrences noted. Procedures establish requirements concerning record retention such as duration, location and assigned responsibility.

17.2 IMPLEMENTATION

Procedures establish the responsibilities and requirements for the maintenance, identification, retention (e.g., duration, location) and retrievability of records pertaining to materials, equipment, parts, processes or operations relating to quality structures, systems, and components which when founded on observations, measurements or tests can be fully verified, and documented by cognizant personnel.

Vendors utilized to perform quality activities for Millstone Unit 1 are responsible to implement measures for identification, maintenance, retention, retrieval and turnover of documented and approved records which contain objective evidence of quality as specified in purchase orders/contracts. Audits, surveillances, and inspections, are performed, as appropriate, to verify that these vendors are effectively complying with their program for quality assurance records.

Quality assurance records are identified, controlled and maintained in appropriate files and are identifiable to specific structures, systems, and components within Millstone Unit 1. When identification to a specific structure, system, or component is not practical, records are filed by category (e.g., specification, nonconformance reports, audits, etc.).

17.3 RETENTION

Quality assurance records are classified as life records or non-life records as delineated by **procedures.** Non-life records are those documents that are maintained for a specific period of time other than the lifetime of a Station nuclear power plant or the particular component or part. Life records are those documents that are maintained for the lifetime of the in-service nuclear power plant or for the life of the particular component or part. In instances where more than one licensing basis document specifies a record retention

requirement and they are different (e.g. QA Program commitment versus Unit Technical Specifications) the more restrictive requirement shall apply. Life records are those which would be of significant value in meeting one or more of the following criteria:

a. Demonstrating capability for safe operations;

b. Maintaining, reworking, repairing, replacing or modifying the item;

c. Determining the cause of an accident or malfunction of an item;

d. Providing required base line data for in-service inspection.

Quality assurance records are reviewed and approved by the cognizant qualified **Millstone Unit 1** personnel and vendors, as appropriate, and are transmitted to the Station Nuclear Document Records Facility. The responsibility of the Nuclear Document Services Facility upon receipt of records is to maintain and provide controlled retrievability of records affecting Millstone Unit 1, in such a manner as to prevent destruction of records by fire, flood, theft, and environmental conditions, such as temperature or humidity, as delineated in applicable procedures.

18.0 AUDITS

18.1 GENERAL REQUIREMENTS

This Millstone Unit 1 Quality Assurance Program requires that a comprehensive system of planned and periodic audits shall be carried out to verify that quality activities for Millstone Unit 1 are performed in compliance with this Millstone Unit 1 Quality Assurance Program and to determine the effectiveness of the program.

Audits are conducted in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited.

Audit results are documented and reviewed by management having responsibility in the area audited and the responsible management takes the necessary action to address any audit findings revealed by the audit.

18.2 IMPLEMENTATION

18.2.1 Program

The audit program requires audits of Corporate and Millstone Unit 1 quality activities under the oversight of the Nuclear Safety Assessment Board. Audits are performed on activities where the requirements of 10 CFR 50, Appendix B and Millstone Unit 1 Technical Specifications are being implemented. In addition to those activities, audits are performed on areas associated with indoctrination and training programs, interface control **between Millstone Unit 1 personnel** and vendors, vendor quality programs and the **Procure the Asset group** procurement function. Audits are regularly scheduled on the basis of the status and safety importance of the activities being performed. Regularly scheduled audits are supplemented by audits for one or more of the following conditions:

a. When significant changes are made in functional areas of the quality assurance program, such as significant reorganization or procedure revisions;

b. When it is suspected that the quality of the item is in jeopardy due to deficiencies in the quality assurance program;

c. When a systematic, independent assessment of program effectiveness is considered necessary;

d. When necessary to verify implementation of required corrective action.

Schedules for the audit of Corporate, and Station, quality activities are originated and maintained by the Unit 1 Nuclear Oversight Department. Schedules for vendor quality assurance activities are maintained by the **Procure the Asset group** and Unit 1 Nuclear Oversight Department, as appropriate.

Audits are performed as specified in procedures by qualified personnel, using an audit plan prepared by the auditing organization. Audits may include evaluation of the work areas, activities, processes, items, and review of documents and records to determine the effectiveness of implementation and conformance to this Millstone Unit 1 Quality Assurance Program.

Approved vendors utilized to perform quality activities for Millstone Unit 1 are responsible for developing and implementing a system of planned and periodic audits to verify compliance with and to determine the effectiveness of all aspects of their quality assurance program. **The Procure the Asset group** is responsible for verifying the acceptability of vendor audit programs. Audits are performed as appropriate to verify that these vendors are effectively complying with their quality assurance requirements.

In addition to the audits, other methods, such as surveillances and inspections are used to assure that quality activities are in compliance with this Millstone Unit 1 Quality Assurance Program.

18.2.2 Reporting of Audit Results

Audit results are reviewed, approved, and reported in accordance with Unit 1 Nuclear Oversight Department and **the Procure the Asset group** procedures, as applicable. The audit reports are issued to the appropriate management of the area audited to assure appropriate and/or timely corrective action is taken to address conditions adverse to quality identified by the audit findings. In addition, audit data and reports are accumulated as part of the review for quality trends and assessed to assure the effectiveness of this Millstone Unit 1 Quality Assurance Program.

18.2.3 Review, Action, and Follow-up of Audit Findings

Audit findings that involve conditions adverse to quality are reviewed and investigated by the management having the responsibility for the area audited. The responsible management is required to take the necessary action to address any conditions adverse to quality identified by the audit and: report the results of such reviews and investigations, take the necessary actions to correct problems reported, and report the completion of corrective action within specified time frames.

Follow-up of audit findings involving conditions adverse to quality is performed by the auditing organization as necessary to verify appropriate actions have been taken to resolve audit findings. Items which cannot be resolved by affected

management are submitted for resolution to the Senior Vice President and Chief Nuclear Officer - Millstone.

18.2.4 Records/Reports of Audits

Audit records, reports, and associated documentation are retained in the Station Nuclear Document Services Facility, as specified in applicable procedures.

APPENDIX D

MILLSTONE UNIT 1 QUALITY ASSURANCE PROGRAM

GLOSSARY OF QUALITY ASSURANCE TERMS

Accept As Is - (also known as "Use-As-Is") A disposition which may be imposed for a nonconformance when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements including performance, maintainability, fit and safety.

Approved Vendors - Vendors approved to provide material, equipment, parts or services under their quality assurance program.

As-Built Documents - Documents which accurately describe the condition actually achieved in a system, structure, or component. These documents include: material certification and test data; reports of inspections, examinations, and test results; drawing, specifications, procedures, and instructions; and records of nonconformance and their resolution.

Audit - A formal, documented activity performed in accordance with written procedures or checklists to verify by evaluation of objective evidence that a quality assurance program has been developed, documented, and implemented in accordance with applicable requirements.

Augmented Quality - Nonsafety-related items for which a design basis or regulatory commitment has been made. The augmented quality items are included within the scope of the Millstone Unit 1 Quality Assurance Program. These items fall under nuclear indicators such as FPQA (Fire Protection Quality Assurance) and RWQA (Radwaste Quality Assurance).

Calibration - The process by which measuring and test equipment are checked against standards of known higher accuracy and adjusted as necessary to assure their compliance with designated specifications.

Category I - Designation given to safety-related structures, systems, and components (SSC) **of Millstone Unit 1** and material, equipment, parts, consumables, and services applicable to the safety-related functions of these SSCs.

Category 1 Structures, Systems and Components - Defined in the DSAR.

Cleaning - Those actions performed to maintain an item in accordance with cleanliness requirements.

Commercial Grade Item (CGI) - A commercial grade item per 10CFR21 is a structure, system, or component, or part thereof that affects its safety function that was not designed and manufactured as a basic component. Commercial grade items do not include items where the design and manufacturing process require in-process inspections and verifications to assure that defects or

failures to comply are identified and corrected (i.e., one or more critical characteristics of the item cannot be verified).

Commercial Grade Survey - Activities conducted by the purchaser to ascertain and verify that a supplier or manufacturer of commercial grade items, controls the technical and quality characteristics determined to be critical for satisfactory performance of specifically designated commercial grade items, as a method to accept those items for safety-related use.

Condition Adverse to Quality - Failures, malfunctions, deficiencies, deviations, defective materials and equipment, abnormal occurrences and nonconformances.

Contractor - Any organization under contract for furnishing items or services.

Corrective Action - Action taken to correct an identified condition adverse to quality.

Deficiencies - Departures from specified requirements.

Department - The use of the word "Department" throughout this Millstone Unit 1 Quality Assurance Program can refer to any portion of the organization (i.e., Group, Division, Department, Branch, Section, or Unit, as applicable).

Design - The technical and management process which leads to and includes the issuance of design output documents such as drawings, specifications, and other documents defining technical requirements of structures, systems, and components.

Design Changes - Changes in drawings and specifications that define the design of structures, systems, and components of nuclear power plants.

Design Documents - The drawing, calculation, specification, or other document(s) that define the technical requirements of structures, systems, or components.

Engineering Service Organization - Organizations that provide services such as analysis, computer software, testing, and inspection.

Group - The use of the word "group" in this Millstone Unit 1 Quality Assurance Program refers to a portion of the organization (i.e., Department, Unit, Branch, as applicable).

Handling - An act of physically moving an item by hand or by mechanical machinery, but not including transport modes.

Identification - A means by which material, equipment and parts can be traced to their associated documentation through the use of heat numbers, lot numbers, part numbers, serial numbers, or other appropriate means.

Item - Any level of unit assembly, including structures, systems, subsystems, subassembly, component, part, or material.

Inspection - A phase of quality control which, by means of examination, observation, or measurement, determines the conformance of material, supplies, components, parts, appurtenances, systems, processes, structures, or services to predetermined quality requirements.

Inspection Status - Identification of material, equipment, and parts that have completed inspection, either acceptable or unacceptable.

Licensing Basis - The set of requirements that includes the applicable NRC regulations, plant - specific NRC requirements, plant - specific design basis and regulatory commitments that are docketed and in effect.

Life Records - Those quality documents that are maintained for the lifetime of an in-service nuclear power plant (the duration of the operating license) or for the life of the particular component or part. Life records are those which would be of significant value in meeting one or more of the following criteria:

(1) demonstrating capability for safe operation.

(2) maintaining, reworking, repairing, replacing or modifying the item.

(3) determining the cause of an accident or malfunction of an item.

(4) providing required base line data for in-service inspection.

Material Request - A formal electronic request for the purchase of material, equipment, parts and/or services.

Measuring and Test Equipment - Those instruments, gages, tools, fixtures, reference and transfer standards, nondestructive test equipment, and measuring devices used during inspection and testing to determine that the measuring and test parameters comply with appropriate requirements in specifications and drawings.

Millstone Unit 1 Quality Assurance Program - Consists of this Millstone Unit 1 Quality Assurance Program (topical report), Unit 1 Nuclear Oversight Department procedures and other Group/ Division/Department/Branch/Section/Unit quality procedures.

Nonconformance - A deficiency in characteristic documentation or procedure which renders the quality of an item unacceptable or indeterminate.

Non-Life Records - Those quality documents that are maintained for a specific period of time other than the lifetime of the in-service nuclear power plant or the particular component or part.

Northeast Utilities (NU) - A public utility holding company which owns Northeast Utilities Service Company (NUSCO) and the Northeast Nuclear Energy Company (NNECO).

Northeast Nuclear Energy Company (NNECO) - The Northeast Utilities Power Operating Company responsible for the operation of the Millstone Unit 1 nuclear power plant.

Northeast Utilities Service Company (NUSCO) - A wholly owned subsidiary of Northeast Utilities that provides support engineering, purchasing, and quality assurance services for Millstone Unit 1.

Nuclear Document Services - The organization responsible for establishing the Corporate Nuclear Plant Records Program which is implemented at each Nuclear Document Services Facility.

Nuclear Grade - The procurement classification applied to all materials and services intended for items listed as Category I (CAT I) in the MEPL. These may require validating documentation such as Certificate of Material Test Report, Certificate of Conformance, Certificate of Compliance, personnel qualifications, etc., as specified by codes or standards, and have been designed/qualified for a nuclear application. Nuclear Grade items are manufactured/qualified under a 10CFR50, Appendix B program with the vendor responsible for 10CFR21. The vendor should be an "Approved Vendor".

Nuclear Document Services Facilities (NDSF) - A facility which has been established for the purpose of handling nuclear power plant records in accordance with the Nuclear Records Program.

Objective Evidence - Any statement of fact, information, or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observation, measurements, or tests which can be verified.

Preservation - Those actions performed to maintain an item in its original and usable condition.

Procedures and Instructions - Documents that specify how an activity is to be performed. They may include methods to be employed; material, equipment, or parts to be used; and a sequence of operations.

Procurement Documents - Purchase requisitions/material requests, purchase orders, contracts, drawings, specifications or instructions used to define requirements for purchase.

Product Acceptance Test - Activities conducted as part of the receiving or source inspection process to verify acceptability of one or more critical characteristics of the item being inspected.

Purchased Material, Equipment, and Parts (MEP) - Items procured for installation in the Millstone Unit 1 quality structures, systems, and components, and items procured as spare MEP for potential installation in those structures, systems, and components.

Purchased Services - Services provided by vendor when requested under a QA Material Request and performed under a quality assurance program other than this Millstone Unit 1 Quality Assurance Program. (Synonymous with "Services" and "Quality Services" in this Millstone Unit 1 Quality Assurance Program)

Quality Activities - All activities affecting the safety functions of structures, systems, and components; these activities include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying. Quality activities also include those activities associated with Augmented Quality (including Radwaste Packaging and Shipping) and other regulated programs to which this Millstone Unit 1 Quality Assurance Program is applicable.

Quality Assurance Records - Any record pertaining to the quality of material, equipment, parts, processes, or operations relating to structures, systems, and components which are founded on observations, measurements, or tests which can be fully checked or verified. Such statements may be recorded on a written or preprinted document or tag. The statements are authorized with a signature or stamp identifiable to the person making the statement of fact.

Quality Structures, Systems and Components - Structures, systems, and components (SSC) including Safety-Related SSCs, Augmented Quality items, and items under other regulated programs to which this Millstone Unit 1 Quality Assurance Program is applicable.

Quality Procedures - Those Unit 1 Nuclear Oversight Department and other department procedures which implement the requirements of this Millstone Unit 1 Quality Assurance Program.

Repair - A disposition applied to nonconforming material, equipment, and parts that are unsuitable for their intended purpose which are modified by the use of additional operations and/or processes so that they are suitable for their intended purpose but may not meet all specified requirements.

Reportable Item - An event or condition that could affect nuclear plant safety and must be reported to the NRC in accordance with regulatory requirements such as 10CFR50.72, 10CFR50.73, or 10CFR50.9(b).

Responsible Engineer - An employee assigned the responsibility to coordinate the engineering activities addressed in the Millstone Unit 1 Quality Assurance Program. The responsible engineer may be designated as the project engineer.

Retest - A test conducted prior to operation following installation inspections of work associated with maintenance and refueling to verify that structures, systems, and components will function satisfactorily when in operation. A retest may also be performed when original test results are invalidated.

Return to Vendor - A disposition applied to nonconforming material, equipment, and parts that are unsuitable for their intended purpose but which are feasible to repair or rework at a vendor's facility.

Rework - A disposition applied to nonconforming material, equipment, and parts that are unsuitable for their intended purpose due to incomplete operations or variations from original engineering requirements but which are modified through the use of additional operations or processes to meet all specified requirements.

Safety-Related Structures, Systems and Components - Those structures, systems and components that are relied on to remain functional during and following design basis (postulated) events to assure:

1) The integrity of the reactor coolant pressure boundary;

2) The capability to shut down the reactor and maintain it in a safe shutdown condition; and

3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in 10CFR50.34(a)(1) or 10CFR100.11 as applicable.

Significant Condition Adverse to Quality - A condition adverse to quality involving actual or potential consequences that have a serious impact on public or personnel health and safety or plant operations, and requiring a root cause evaluation to determine corrective action to prevent recurrence.

Special Processes - Processes for which the desired level of quality can only be assured through the use of additional process controls, and where control through direct inspection alone is inadequate, impossible, or disadvantageous. These processes are performed under controlled conditions in accordance with special requirements utilizing qualified procedures, equipment, and personnel. Special processes may include, but are not limited to welding, brazing, soldering, cleaning, heat treating, and nondestructive testing.

Station Blackout - The complete loss of alternating current electric power to the essential and non-essential switchgear buses in a nuclear power plant as defined in 10CFR50.2. It involves the loss of offsite power concurrent with turbine trip and failure of the onsite emergency ac power system, but not the loss of available ac power to buses fed by Station batteries through inverters or the loss of power from alternate ac sources.

Storage - The act of holding an item at the site in an area other than its permanent location in a plant.

Surveillance - A documented record of the observation of work operations performed at Millstone Unit 1 or vendor's site to assure compliance with applicable codes, standards, specifications, procedures, drawings, and procurement documents. Surveillance may be performed with a prepared checklist.

Test and Operating Status - Identification of material, equipment, and parts that are ready for test or operation, or an existing stage of a test operation.

Testing - The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

Vendors - Organizations that provide material, equipment, parts, computer software, or services. This includes contractors, engineering service organizations, and consultants. (Synonymous with "Supplier" in this Millstone Unit 1 Quality Assurance Program)

Work Procedures and Work Documents - Procedures, instructions, and documents used to control and document maintenance and modification work performed on Millstone Unit 1 structures, systems, and components.

APPENDIX E

MILLSTONE UNIT 1 QUALITY ASSURANCE PROGRAM

PROGRAM EXCEPTIONS

1. ANSI N45.2.9, states in part, "structure, doors, frames, and hardware should be Class A fire-related with a recommended four-hour minimum rating." The three record storage vaults have a two-hour rating.

   The vaults are used for storage of documentation that is unsuitable for filming or awaiting filming.

   A records organization exists along with written procedures addressing the control of quality assurance records.

2. ANSI N18.7-1976, paragraph 4.3.2.3 "Quorum" states in part: "A quorum for formal meetings of the (Independent Review) Committee held under the provisions of 4.3.2.2 shall consist of not less than a majority of the principals, or duly appointed alternates..."

   A quorum of the Nuclear Safety Assessment Board shall consist of the Chairman or Vice Chairman and at least enough members to constitute a majority of the assigned members. No more than a minority of the quorum shall have line responsibility for operation of one of **Millstone station's** nuclear units. No more than two alternates shall be appointed voting status at any meeting in fulfillment of the quorum requirements.

3. ANSI N45.2.9-1974, paragraph 1.4, definition of "Quality Assurance Records" states in part: "For the purposes of this standard, a document is considered a quality assurance record when the document has been completed."

   The following alternative definition **has been developed** to provide guidance during the interim period from the time a document is completed until it is transmitted to the Nuclear Document Services Facility:

   "A record is considered a working document until it is transmitted to the Nuclear Document Services Facility (NDSF) at which time it is designated as a Quality Assurance Record. The following maximum time limits are established for the transmittal of working documents to the NDSF:

   Operations Documents - Documentation generated during plant operations may be maintained, as needed, by operating plant departments, for up to one year.

   New Construction or Betterment Documents - Documents which evolve during new construction or betterment projects shall be transmitted to NDSF within 90 days of completion of a new construction project or turnover of a betterment project or plant operations.

Procurement Documents - Inspection/Surveillance/Audit Reports generated during vendor oversight activities which are used to maintain vendor status for current and future procurements may be maintained, as needed, by **the Procure the Asset group** for up to three years.

All Other Working Documents - All other working documents shall be transmitted to NDSF within 6 months of their receipt or completion."

The requirements of ANSI N45.2.9-1974 do not apply to these "working documents" based on paragraph 1.1 of the ANSI standard which states:

"It (ANSI N45.2.9) is not intended to cover the preparation of the records nor to include working documents not yet designated as Quality Assurance Records."

4. Regulatory Guide 1.64 - 6/76, the Regulatory position states, in part, "It should not be construed that such verification constitutes the required independent design verification." The following alternative **has been developed** to allow for adequate independent design verification:

This review may be performed by the originator's Supervisor, only if the Supervisor:

Did not specify a singular design approach;

Did not establish the design inputs or did not rule out certain Design considerations;

Is the only individual in the organization competent to perform the review.

Where the Supervisor performs the design review, the next level of management shall fulfill the Supervisor's responsibilities.

5. ANSI N45.2.13 - 1976, paragraph 10.3.4, states in part, "Post-Installation Test requirements and acceptance documentation (should) shall be mutually established by the purchaser and supplier." Involvement by the supplier in establishing Post-Installation Test requirements and acceptance documentation is requested only when it is deemed necessary and proper by the responsible engineering organization.

When procurements are made for spare parts from suppliers who are not the original equipment manufacturer, the supplier may have little or no understanding or knowledge of either the operation of the system the component is to be installed in, or applicable Post-Installation Test requirements and acceptance documentation. As such, **the responsible engineering organization** assumes responsibility for establishing Post Installation Test requirements and acceptance documentation.

6. ANSI N45.2.2-1972, paragraph 1.2, states in part that, "The requirements of this standard apply to the work of any individual or organization that participates in the packaging,

shipping, receiving, storage, and handling of items to be incorporated into nuclear power plants."

Since a portion of procurement activities involve commercial suppliers which do not fully comply with the requirements of ANSI N45.2.2, the **Procure the Asset** organization verifies through source inspections, receipt inspection, and/or survey activities that the quality of the materials, items, components or equipment is preserved by those suppliers to the extent that packaging, shipping, storage and handling methods are employed which are commensurate with the nature of the product.

7. Deleted (not applicable to Millstone Unit 1)

8. Deleted (not applicable to Millstone Unit 1)

9. Regulatory Guide 1.33 - 2/78, regarding audits, states in part:

   (a) "The results of actions taken to correct deficiencies...at least once per 6 months."

   (b) "...technical specifications and applicable license conditions - at least once per 12 months."

   (c) "The performance, training, and qualifications of the facility staff - at least once per 12 months."

   An alternative which modifies these Audit frequencies to at least once per 24 months has previously been accepted by the NRC via license amendment 79 **for Millstone Unit 1.**

10. Deleted

11. Deleted (not applicable to Millstone Unit 1)

12. Deleted.

13. Deleted (not applicable to Millstone Unit 1)

14. ANSI N18.7-1976, Paragraph 5.2.15, "Review, Approval, and Control of Procedures," states in part: "Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable."

    Millstone Unit 1 implements administrative and programmatic controls that ensure procedures are maintained current in accordance with 10CFR50, Appendix B, thus meeting the intent of the biennial review.

    Millstone Unit 1 implements administrative controls to perform biennial reviews of non-routine procedures such as ONPs, E-Plan, Security and other procedures that may be dictated by an event.

Programmatic controls specify conditions when the mandatory review of plant procedures apply, and include a requirement to review applicable procedures following an accident or transient and following any modification to a system.

Millstone Unit 1 utilizes a pre-job briefing practice to ensure that personnel are aware of what is to be accomplished and what procedures will be used prior to beginning a job. In addition, the Procedure Compliance Policy requires that the job be stopped and the procedure be revised or the situation resolved prior to work continuing if procedures cannot be implemented as written.

Additionally, **the Millstone Unit 1** Quality Assurance Program requires the review of a representative sample of plant procedures as part of routine audits and surveillances to ensure that existing administrative controls for procedure verification, review and revision are effective in maintaining the quality of plant procedures. Significant procedural deficiencies are identified and corrected through the Station Corrective Action Program. The Station Self-Assessment Program also periodically reviews selected procedures and identifies deficiencies and improvements through the Corrective Action Program.

APPENDIX F.

MILLSTONE UNIT 1 QUALITY ASSURANCE PROGRAM

ADMINISTRATIVE CONTROLS

NOTE
"Specification" numbers refer to the Unit 1 Technical Specification.

1.0 REVIEW AND AUDIT

1.1 PLANT OPERATION REVIEW COMMITTEE (PORC)

1.1.1 Function

The PORC shall function to advise the Director - Unit 1 Operations on all matters related to nuclear safety.

1.1.2 Composition

The PORC shall be composed of nine to eleven members. Members shall collectively have experience and expertise in the following areas:

Plant Operations
Engineering
Reactor Engineering
Maintenance
Instrumentation and Controls
Health Physics
Chemistry
Work Planning
Quality Assurance

The minimum qualifications of PORC members shall be that all members have an academic degree in an engineering or physical science field, or hold a management position, and have a minimum of five years technical experience in their respective field of expertise. The members of PORC shall be appointed in writing by the Director - Unit 1 Operations. The Chairperson and alternate Chairperson of the PORC shall be drawn from the PORC members and be appointed in writing by the Director - Unit 1 Operations.

1.1.3 Alternates

Alternate members shall be appointed in writing by the PORC Chairperson to serve on a temporary basis; however, no more than two alternates shall participate in PORC activities at any one time.

1.1.4 Meeting Frequency

The PORC shall meet at least once per calendar month and as convened by the PORC Chairperson.

1.1.5 Quorum

A quorum of the PORC shall consist of the Chairperson, or Vice Chairperson, and four members including alternates.

1.1.6 Responsibilities

The PORC shall be responsible for:

a. Review of 1) all procedures, except common site procedures, required by Specification 5.5 and changes thereto, 2) all programs, except common site programs, required by Specification 5.**6** and changes thereto, 3) any other proposed procedures, programs, or changes thereto as determined by the Director - Unit 1 Operations to affect nuclear safety. Procedures and programs required by Specification 5.5 **and 5.6** that are designated for review and approval by the Station Qualified Reviewer Program do not require PORC review.

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

c. Review of all proposed changes to Sections 1.0 - 4.0 of the Technical Specifications.

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

e. Investigation of all violations of the Technical Specifications and preparation and forwarding of a report covering evaluation and recommendations to prevent recurrence to the Senior Vice President and CNO - Millstone and to the Chairperson of the Nuclear Safety Assessment Board.

f. Review of all REPORTABLE EVENTS.

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

h. Performance of special reviews and investigations and reports thereon as requested by the Chairperson of the Nuclear Safety Assessment Board.

i. Render determinations in writing if any item considered under (a) through (d) above, as appropriate and as provided by 10CFR50.59 or 10CFR50.92, constitutes an unreviewed safety question or requires a significant hazards consideration determination.

j. Review of the unit-specific Fire Protection Program and implementing procedure.

1.1.7 Authority

The PORC shall:

a. Recommend to the Director - Unit 1 Operations written approval or disapproval of items considered under Responsibilities (a) through (d) above.

b. Provide immediate written notification to the Senior Vice President and CNO - Millstone and the Chairperson of the Nuclear Safety Assessment Board of disagreement between the PORC and the Director - Unit 1 Operations; however, the Director - Unit 1 Operations shall have responsibility for resolution of such disagreements pursuant to Specification 5.1.1.

1.1.8 Records

The PORC shall maintain written minutes of each meeting and copies shall be provided to the Senior Vice President and CNO - Millstone and the Chairperson of the Nuclear Safety Assessment Board.

1.2 SITE OPERATIONS REVIEW COMMITTEE (SORC)

1.2.1 Function

The SORC shall function to advise the Senior Vice President and CNO - Millstone on all matters related to nuclear safety of the entire Millstone Station Site.

1.2.2 Composition

The SORC shall be composed of the:

Member: Director - Unit 1 Operations.
Member: Master Process Owner - Operate the Asset.

Member:	**Process Owner - Operations Millstone 2.**
Member:	**Process Owner - Operations Millstone 3.**
Member:	**Process Owner - Radiological Protection.**
Member:	**Master Process Owner - Support Services.**
Member:	Designated Member of Unit 1 PORC.
Member:	**Designated Member of Unit 2/3 PORC.**
Member:	Designated Member of Unit 2/3 PORC.
Member:	Designated Member of Unit 2/3 PORC.
Member:	Designated Member of Oversight.

The SORC Chairperson and two Vice Chairpersons of the SORC shall be drawn from the selected SORC Members and be appointed in writing by the Senior Vice President and CNO Millstone.

1.2.3 Alternates:

Alternate members shall be appointed in writing by the SORC Chairperson to serve on a temporary basis; however, no more than two alternates shall participate in SORC activities at one time.

1.2.4 Meeting Frequency

The SORC shall meet at least once per six months and as convened by the SORC Chairperson.

1.2.5 Quorum

A quorum of the SORC shall consist of the Chairperson or Vice Chairperson and five members including alternates.

1.2.6 Responsibilities

The SORC shall be responsible for:

a. Review of 1) all common site procedures required by Specification 5.5 and changes thereto, 2) all common site programs, required by Specification 5.**6** and changes thereto, 3) any other proposed procedures, programs, or changes thereto as determined by the Senior Vice President and CNO - Millstone to affect site nuclear safety. Common site programs and procedures required by Specification 5.5 **and 5.6** that are designated for review and approval by the Station Qualified Reviewer Program do not require SORC review.

b. Review of all proposed changes to Section 5.0 "Administrative Controls" of the Technical Specifications.

c. Performance of special reviews and investigations and reports as requested by the Chairperson of the Nuclear Safety Assessment Board.

d. Not used.

e. Not used.

f. Review of all common site proposed tests and experiments that affect nuclear safety.

g. Review of all common site proposed changes or modifications to systems or equipment that affect nuclear safety.

h. Render determinations in writing or meeting minutes if any item considered under (a) through (g) above, as appropriate and as provided by 10CFR50.59 or 10CFR50.92, constitutes an unreviewed safety question or requires a significant hazards consideration determination.

i. Review of the common site fire protection program and implementing procedures.

1.2.7 Authority

The SORC shall:

a. Recommend to the Senior Vice President and CNO - Millstone written approval or disapproval in meeting minutes of items considered under Responsibilities (a) through (g) above.

b. Provide immediate written notification or meeting minutes to the President and Chief Executive Officer (CEO) and the Chairperson of the Nuclear Safety Assessment Board of disagreement between the SORC and the Senior Vice President and CNO - Millstone; however, the Senior Vice President and CNO - Millstone shall have responsibility for resolution of such disagreements pursuant to Specification 5.1.1.

1.2.8 Records

The SORC shall maintain written minutes of each meeting and copies shall be provided to the Senior Vice President and CNO - Millstone and Chairperson of the Nuclear Safety Assessment Board.

1.3 NUCLEAR SAFETY ASSESSMENT BOARD (NSAB)

1.3.1 Function

The minimum qualifications of NSAB members are as follows:

a. The Chairperson and NSAB members shall have:

1. An academic degree in an engineering or physical science field, or hold a senior management position, and

2. A minimum of five years technical experience in their respective field of expertise.

b. The NSAB shall have experience in and shall function to provide independent oversight review and audit of designated activities in the areas of:

1. Nuclear power plant operations;

2. Nuclear engineering;

3. Chemistry and radiochemistry;

4. Metallurgy;

5. Instrumentation and control;

6. Radiological safety;

7. Mechanical and electrical engineering; and

8. Quality assurance practices.

The NSAB serves to advise the Senior Vice President and CNO - Millstone on matters related to nuclear safety and notify the Senior Vice President and CNO - Millstone within 24 hours of a safety significant disagreement between the NSAB and the organization or function being reviewed.

1.3.2 Composition

The Senior Vice President and CNO - Millstone shall appoint, in writing, a minimum of seven members to the NSAB and shall designate from this membership, in writing, a Chairperson and a Vice Chairperson. The membership shall function to provide independent review and audit in the areas listed in Function (b) above.

1.3.3 Alternates

All alternate members shall be appointed, in writing, by the Senior Vice President and CNO - Millstone; however, no more than two alternates shall participate as members in NSAB activities at any one time.

1.3.4 Meeting Frequency

The NSAB shall meet at least once per calendar quarter.

1.3.5 Quorum

The quorum of the NSAB shall consist of a majority of NSAB members including the Chairperson or Vice Chairperson. No more than a minority of the quorum shall have line responsibility for operation of the same **Millstone station** nuclear unit. No more than two alternates shall be appointed as members at any meeting in fulfillment of the quorum requirements.

1.3.6 Review Responsibilities

The NSAB shall be responsible for the review of:

a. The safety evaluations for changes to procedures, equipment, or systems, and tests or experiments completed under the provisions of 10 CFR 50.59, to verify that such actions did not constitute an unreviewed safety question as defined in 10 CFR 50.59;

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

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

d. Proposed changes to Technical Specifications and the Operating License;

e. Violations of applicable codes, regulations, orders, license requirements, or internal procedures having nuclear safety significance;

f. All Licensee Event Reports required by 10 CFR 50.73;

g. Indications of significant unanticipated deficiencies in any aspect of design or operation of structures, systems, or components that could affect nuclear safety;

h. Significant accidental, unplanned, or uncontrolled radioactive releases, including corrective actions to prevent recurrence;

i. Significant operating abnormalities or deviations from normal and expected performance of equipment that could affect nuclear safety;

j. The performance of the corrective action program; and

k. Audits and audit plans.

Reports or records of these reviews shall be forwarded to the Senior Vice President and CNO - Millstone within 30 days following completion of the review.

1.3.7 Audit Program Responsibilities

The NSAB audit program shall be the responsibility of the Oversight Department. NSAB audits shall be performed at least once per 24 months in accordance with administrative procedures and shall encompass:

a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions;

b. The training and qualifications of the unit staff;

c. The implementation of all programs required by Specification **5.6**;

d. The Fire Protection Program and implementing procedures.

e. The fire protection equipment and program implementation utilizing either a qualified offsite license fire protection engineer or an outside independent fire protection consultant.

f. Actions taken to correct deficiencies occurring in equipment, structures, systems, components, or method of operation that affect nuclear safety; and

g. Other activities and documents as requested by the Senior Vice President and CNO - Millstone.

1.3.8 Records

Written records of reviews and audits shall be maintained. As a minimum these records shall include:

a. Results of the activities conducted under the provisions of this NSAB Section;

b. Deleted

c. Deleted

2.0 STATION QUALIFIED REVIEWER PROGRAM

2.1 Function

The Director - Unit 1 Operations, Vice President - **Decommissioning**, or Senior Vice President and CNO - Millstone may establish a Station Qualified Reviewer Program whereby required reviews of designated procedures or classes of procedures required by PORC, Responsibilities item (a), and SORC, Responsibilities item (a) are performed by Station Qualified Reviewers and approved by designated managers [Responsible Individual(s) for the procedure(s)]. These reviews are in lieu of reviews by the PORC or SORC. However, procedures which require a 10CFR50.59 evaluation must be reviewed by the PORC or SORC.

2.2 Responsibilities

The Station Qualified Reviewer Program shall:

a. Provide for the review of designated procedures, programs, and changes thereto by a Qualified Reviewer(s) other than the individual who prepared the procedure, program, or change.

b. Provide for cross-disciplinary review of procedures, programs, and changes thereto when organizations other than the preparing organization are affected by the procedure, program, or change.

c. Ensure cross-disciplinary reviews are performed by a Qualified Reviewer(s) in affected disciplines, or by other persons designated by cognizant Managers or Directors as having specific expertise required to assess a particular procedure, program, or change. Cross-disciplinary reviewers may function as a committee.

d. Provide for a screening of designated procedures, programs and changes thereto to determine if an evaluation should be performed in accordance with the provisions of 10CFR50.59 to verify that an unreviewed safety question does not exist. This screening will be performed by personnel trained and qualified in performing 10CFR50.59 evaluations.

e. Provide for written recommendation by the Qualified Reviewer(s) to the responsible Manager for approval or disapproval of procedures and programs considered under PORC, Responsibilities item (a) and SORC, Responsibilities

item (a), and that the procedure or program was screened by a qualified individual and found not to require a 10 CFR 50.59 evaluation.

If the responsible manager determines that a new program, procedure, or change thereto requires a 10 CFR 50.59 evaluation, that Manager will ensure the required evaluation is performed to determine if the new procedure, program, or change involves an unreviewed safety question. The new procedure, program, or change will then be forwarded with the 10 CFR 50.59 evaluation to PORC or SORC for review.

Personnel recommended to be Station Qualified Reviewers shall be designated in writing by the Director - Unit 1 Operations or Senior Vice President and CNO - Millstone or Vice President - Nuclear Work Service for each procedure, program, or class of procedure or program within the scope of the Station Qualified Reviewer Program.

Temporary procedure changes shall be made in accordance with Specification 5.5.5 with the exception that changes to procedures for which reviews are assigned to Qualified Reviewers will be reviewed and approved as described in Responsibilities (a) through (e) above.

2.3 Records

The review of procedures and programs performed under the Station Qualified Reviewer Program shall be documented in accordance with administrative procedures.

2.4 Training and Qualification

The training and qualification requirements of personnel designated as a Qualified Reviewer in accordance with the Station Qualified Reviewer Program shall be in accordance with administrative procedures. Qualified reviewers shall have:

a. A Bachelors degree in engineering, related science, or technical discipline, and two years of nuclear power plant experience;

OR

b. Six years of nuclear power plant experience;

OR

c. An equivalent combination of education and experience as approved by a Department Manager.

3.0 RECORD RETENTION

(1) The following records shall be retained for at least five years:

a. Records and logs of facility operation covering time interval at each power level.

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.

c. All REPORTABLE EVENTS.

d. Records of surveillance activities, inspections, and calibrations required by these technical specifications.

e. Records of reactor tests and experiments.

f. Records of changes made to operating procedures.

g. Records of radioactive shipments.

h. Records of sealed source leak tests and results.

i. Records of annual physical inventory of all sealed source material of record.

(2) The following records shall be retained for the duration of the facility operating license:

a. Records and drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report.

b. Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories.

c. Records of facility radiation and contamination surveys.

d. Records of radiation exposure for all individuals entering radiation control areas.

e. Records of gaseous and liquid radioactive material released to the environs.

f. Records of transients or operational cycles for those facility components designed for a limited number of transients or cycles.

g. Records of training and qualification for current members of the plant staff.

h. Records of inservice inspections performed pursuant to the Technical Specifications.

i. Records of quality assurance activities required by the QA Manual.

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to **10 CFR 50.59**

k. Records of meetings of the PORC, the NSAB, and the SORC.

l. Records of Environmental Qualification.

m. Records of reviews performed for changes made to the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM) and the Process Control Program.

APPENDIX G

TECHNICAL SPECIFICATION POSITION CROSS REFERENCE

MILLSTONE UNIT 1

T.S. SECTION	T.S. POSITION	STATION ORGANIZATION POSITION
Responsibility		
5.1.1	Designated Officer Designated Manager	Sr. Vice President and CNO - Millstone Director - Unit 1 Operations
Procedures		
5.5.2	Designated Manager Designated Officer Designated Senior Officer	Director - Unit 1 Operations Vice President - **Decommissioning** Sr. Vice President and CNO - Millstone
5.5.3	Designated Manager Designated Officer	Director - Unit 1 Operations Vice President - **Decommissioning** or Sr. Vice President and CNO - Millstone
5.5.4	Designated Manager Designated Officer	Director - Unit 1 Operations Vice President - **Decommissioning** or Sr. Vice President and CNO - Millstone
5.5.5.c	Designated Manager Designated Officer	Director - Unit 1 Operations Vice President - **Decommissioning** or Sr. Vice President and CNO - Millstone
Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM)		
5.6.1	Designated Officer	Sr. Vice President and CNO - Millstone

Notes:

1. Generic position titles are as approved by Amendment No. 105 to the Unit 1 Technical Specifications.