TPCK02

To : DOCUMENT CONTROL DESK
Facility : MP Department : 806
Address : NUC REGULATORY COMMISSION (0140)
DOCUMENT CONTROL DESK
WASHINGTON, DC 20555

From : NDS CONT DOCUMENTS
Date/Time : 08/08/05 10:06

Trans No. : 000076270 Transmittal Group Id: 05-03745
Total Items: 00001

PASSPORT DOCUMENT

TRANSMITTAL

Page: 1

Item	Facility	Type	Sub	Document Number / Title	Sheet	Revision	Doc Date	Copy #	Media	Copies
* 0001	MP	PROC	OST	MP-02-OST-BAP01 QUALITY ASSURANCE PROGRAM TOPICAL REPORT		027	(NO IMAGE - TOO COMPLEX TO		P	01

Please check the appropriate response and return form to NDS Bldg 475/3
Millstone Power Station or Fax to 860-440-2057.

- [ ] All documents received.
- [ ] Documents noted above not received (identify those not received).
- [ ] I no longer require distribution of these documents.

Date: _____ Signature: _____

Q004

Dominion

Memorandum

NO-05-005
July 28, 2005

TO: Quality Assurance Program Topical Report - Controlled Copy Owners

FROM: Brian Kaufman, Supervisor
Nuclear Oversight, Ext. 2246

SUBJECT: **Quality Assurance Program (QAP) Topical Report - Millstone Power Station Revision 27, (Document No. MP-02-OST-BAP01)**

Enclosed please find Quality Assurance Program (QAP) Topical Report - Millstone Power Station, Revision 27. The new Revision incorporates all the changes from Revision 26. Changes incorporated from Revision 26 are bolded and italicized but no longer marked with change bars.

Please note that the effective date of Revision 27 is **July 1, 2005**. Please replace the entire contents of the Quality Assurance Program, including the Table of Contents, Policy Statement and Introduction, through QAP 18.0 and QAP Appendices (A - G) with the enclosed Revision 27. If you have any questions, please contact B. Kaufman at X2246.

Attachments: Summary of Changes for Revision 27 from Revision 26 (as sent to the NRC)

Enclosure:
Quality Assurance Program Topical Report - Millstone Power Station, Revision 27

BK/cll

Docket Nos. 50-245
50-336
50-423
72-47

Attachment 1

Millstone Power Station, Unit Nos. 1, 2 and 3 and ISFSI

Annual Reporting of Changes to the Quality Assurance Program
Revision 27 to the Dominion Nuclear Connecticut, Inc.
Quality Assurance Program Topical Report - Millstone Power Station
Summary of Changes

Section	Summary Description of Changes
Table of Contents	• No changes from Revision 26 to Revision 27.
Abstract	• No changes from Revision 26 to Revision 27.
Policy Statement	• No changes from Revision 26 to Revision 27.
Introduction	• No changes from Revision 26 to Revision 27.
QAP 1.0	• QA Topical Change Request 04-05 modified the QAP to eliminate the term surveillance as it relates to a specific documented record of observed work performed since Nuclear Oversight does not perform surveillances.
	• QA Topical Change Request 04-06 modified the QAP to eliminate the ISEG (Independent Safety Engineering Group) function performed by Station Nuclear Safety (Consistent with NRC SER to Tennessee Valley Authority, dated August 26, 1999, TAC #s MA5105, MA5106, MA5107, MA5054, MA5055, MA5056).
	• QA Topical Change Request 05-01 modified the QAP to identify who will designate an appropriately qualified individual to fulfill the role of the "Radiation Protection Manager" and not define the specific positions that fulfill this role.
QAP 2.0	• QA Topical Change Request 04-05 modified the QAP to eliminate the term surveillance as it relates to a specific documented record of observed work performed since Nuclear Oversight does not perform surveillances.
	• QA Topical Change Request 05-02 modified the QAP to correctly reflect the responsibilities of Nuclear Oversight for the oversight of vendors' quality assurance programs versus Supply Chain Management and to eliminate the term audit as a responsibility for SCM.
QAP 3.0	• No changes from Revision 26 to Revision 27.
QAP 4.0	• No changes from Revision 26 to Revision 27.
QAP 5.0	• QA Topical Change Request 04-05 modified the QAP to eliminate the term surveillance as it relates to a specific documented record of observed work performed since Nuclear Oversight does not perform surveillances.
QAP 6.0	• No changes from Revision 26 to Revision 27.
QAP 7.0	• No changes from Revision 26 to Revision 27.
QAP 8.0	• No changes from Revision 26 to Revision 27.
QAP 9.0	• QA Topical Change Request 05-03 modified the QAP to correctly reflect the responsibilities of Nuclear Engineering in assuring the training, testing, and certification of all the Non-Destructive Examination Personnel (NDE) versus Nuclear Oversight and the use of generic terminology for codes, specifications, and standards.
QAP 10.0	• No changes from Revision 26 to Revision 27.

Section	Summary Description of Changes
QAP 11.0	• No changes from Revision 26 to Revision 27.
QAP 12.0	• QA Topical Change Request 05-04 modified the QAP to eliminate the need for authorization by the onsite review committee of the basis of acceptance for M&TE calibrations when the calibration of the equipment is not against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated.
QAP 13.0	• No changes from Revision 26 to Revision 27.
QAP 14.0	• No changes from Revision 26 to Revision 27.
QAP 15.0	• No changes from Revision 26 to Revision 27.
QAP 16.0	• No changes from Revision 26 to Revision 27.
QAP 17.0	• No changes from Revision 26 to Revision 27.
QAP 18.0	• No changes from Revision 26 to Revision 27.
Appendix A	• No changes from Revision 26 to Revision 27
Appendix B	• No changes from Revision 26 to Revision 27.
Appendix C	• No changes from Revision 26 to Revision 27.
Appendix D	• QA Topical Change Request 04-05 modified the QAP to eliminate the term surveillance as it relates to a specific documented record of observed work performed since Nuclear Oversight does not perform surveillances. The definition of surveillance was changed with the adoption of the NQA-1 definition of surveillance to define the term as it is used in the QAP Topical Report.
Appendix E	• QA Topical Change Request 04-08 modified the QAP to add an exception (#21) for the Quality Assurance audit schedule to allow a 25% extension to the frequency of most audits (excluding those mandated by the Code of Federal Regulations) and delete an exception (#16) which allowed a 90-day grace period to the 24 month frequency for audits (Consistent with the NRC SER to North Anna Units 1 & 2 and Surry Units 1 & 2, dated March 1, 1994, TAC #s M87225, M87226, M87142, and M87143).
Appendix F	• QA Topical Change Request 04-06 modified the QAP to eliminate the ISEG (Independent Safety Engineering Group) function performed by Station Nuclear Safety (Consistent with NRC SER to Tennessee Valley Authority, dated August 26, 1999, TAC #s MA5105, MA5106, MA5107, MA5054, MA5055, MA5056).
Appendix G	• QA Topical Change Request 05-01 modified the QAP to identify who will designate an appropriately qualified individual to fulfill the role of the "Radiation Protection Manager" and not define the specific positions that fulfill this role.

Section	Summary Description of Changes
	• QA Topical Change Request 05-05 modified the QAP to update this Appendix due to changes in Unit 1's Administrative section of the Defueled Technical Specifications and Unit 2 & 3's Administrative Controls section of the Technical Specifications.

Docket Nos. 50-245
50-336
50-423
BXXXXX

Attachment 2

Millstone Power Station, Unit Nos. 1, 2 and 3

Revision 27 to the Dominion Nuclear Connecticut, Inc.
Quality Assurance Program Topical Report - Millstone Power Station

TABLE OF CONTENTS

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

Table of Contents

Abstract

Policy Statement

Introduction

Quality Assurance Program

QAP 1.0	Organization
QAP 2.0	Quality Assurance Program
QAP 3.0	Design Control
QAP 4.0	Procurement Document Control
QAP 5.0	Procedures, Instructions and Drawings
QAP 6.0	Document Control
QAP 7.0	Control of Purchased Material, Equipment and Services
QAP 8.0	Identification and Control of Materials, Parts and Components
QAP 9.0	Control of Special Processes
QAP10.0	Inspection
QAP11.0	Test Control
QAP12.0	Control of Measuring and Testing Equipment
QAP13.0	Handling, Storage, and Shipping
QAP14.0	Inspection, Test, and Operating Status
QAP15.0	Nonconforming Materials, Parts, Components, or Services
QAP16.0	Corrective Action
QAP17.0	Quality Assurance Records
QAP18.0	Audits

Appendices

A. Category I Structures, Systems, and Components
B. Qualification and Experience Requirements
C. Regulatory Guide and ANSI/IEEE Standard Commitments
D. Glossary of Quality Assurance Terms
E. Program Exceptions
F. Administrative Controls
G. Technical Specification Position Cross Reference

ABSTRACT
QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

Dominion Nuclear Connecticut Inc., the licensee, has assumed, and is implementing, a comprehensive Quality Assurance Program for the Millstone Power Station to assure conformance with established regulatory requirements set forth by the Nuclear Regulatory Commission (NRC) and accepted Industry standards. The participants in this Quality Assurance Program assure that the design, fabrication, procurement, construction, testing, operation, refueling, maintenance, repair and modification of Millstone Power Station nuclear units including the decommissioning of Unit 1 and the Independent Spent Fuel Storage Installation (ISFSI) are performed in a safe and effective manner.

This Quality Assurance Program (QAP) Topical Report complies with the requirements set forth in Appendix B of 10 CFR 50, and 10 CFR 72, along with applicable sections of the Safety Analysis Report (SAR) for each license application, the Defueled Safety Analysis Report (DSAR) for Unit 1, and the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel. The QAP is responsive to the United States NRC Regulatory Guide 1.70, which describes the information required to be presented in the Quality Assurance section of the SAR's for Millstone operating Units 2 and 3.

This QAP applies to Millstone Power Station, and to associated support services. This QAP is also established, maintained, and executed with regard to radioactive material transport packages as allowed by 10 CFR 71.101(f). Quality Assurance provisions for Fire Protection activities are detailed in the Fire Protection Program.

This QAP applies in its entirety to all activities affecting the safety-related functions of structures, systems, and components in the Millstone Power Station nuclear units and the ISFSI. Safety-Related structures, systems, and components for Millstone Units 2 and 3 are functionally identified in Appendix A of this QAP and are designated Category I by the licensee. Applicability of Appendix A to each FSAR is addressed by existing nuclear unit specific design bases and licensing commitments, and also as specifically identified in each Final Safety Analysis Report (FSAR) addressing Section 3.2.1 of Regulatory Guide 1.70. Safety Related structures, systems, and components for Millstone Unit 1 are defined in the DSAR. Safety Related and Important-to-Safety structures, systems, and components for Millstone's ISFSI are defined in the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel. This QAP is also applicable in its entirety to materials, equipment, parts, consumables, and services designated as Category I. This QAP is applicable to other quality programs including Anticipated Transient Without Scram (ATWS) Quality Assurance, which is applicable to MP-2 only (MP-3 commits to Generic Letter 85-06) and *to* Electrical Equipment Qualification (EEQ), as defined by licensee commitments. Portions of this QAP are also applicable to Fire Protection Quality Assurance (FPQA), and Radwaste Quality Assurance (RWQA), which are delineated in applicable program manuals and procedures. This QAP is also applicable to Station Blackout Quality Assurance (SBOQA) as identified in licensing commitments and delineated in applicable implementing procedures. Quality Assurance provisions for primary chemistry laboratory activities are detailed in the licensee's Nuclear Chemistry Laboratory Quality Assurance Manual.

This QAP is committed to utilize the guidance obtained from the regulatory documents and their endorsed standards identified in Appendix C of this QAP Topical Report.

POLICY STATEMENT
QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

This Quality Assurance Program (QAP) Topical Report has been developed to achieve quality assurance in all activities affecting the safe operation of Millstone Power Station. The policies, requirements and tasks contained in this program description have been developed to achieve quality assurance during activities that apply to the design, fabrication, procurement, construction, testing, operation, refueling, maintenance, repair and modification of Millstone Power Station nuclear units, the ISFSI and the decommissioning of Unit 1.

Dominion Nuclear Connecticut, Inc. (the licensee) procedures which implement this program are described in various manuals.

This QAP applies in its entirety to all activities affecting the safety-related functions of structures, systems, and components of Millstone Power Station. Safety-Related structures, systems and components are functionally identified in Appendix A for Millstone Units 2 and 3 of this QAP and are designated Category I by the licensee. Applicability of Appendix A to each FSAR is addressed by existing nuclear unit specific design bases and licensing commitments, and also as specifically identified in each FSAR addressing Section 3.2.1 of Regulatory Guide 1.70. Safety Related structures, systems, and components for Millstone Unit 1 are defined in the DSAR. This QAP is also applicable in its entirety to materials, equipment, parts, consumables, and services designated as Category I. This QAP is also applicable in its entirety to the design, fabrication, construction, testing, operation, maintenance, modification, and decommissioning of Safety Related and Important-To-Safety ISFSI structures, systems, and components as identified in Section 3.4 of the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel. This QAP is also applicable to other quality programs including Anticipated Transient Without Scram (ATWS) Quality Assurance, which is applicable to MP-2 only (MP-3 commits to Generic Letter 85-06), and to Electrical Equipment Qualification (EEQ), as defined by licensee commitments. Portions of this QAP are also applicable to Fire Protection Quality Assurance (FPQA), and Radwaste Quality Assurance (RWQA) which are delineated in applicable program manuals and procedures. This QAP is also applicable to Station Blackout Quality Assurance (SBOQA) as identified in licensing commitments and delineated in applicable implementing procedures. Quality Assurance provisions for primary chemistry laboratory activities are detailed in the licensee's Nuclear Chemistry Laboratory Quality Assurance Manual.

The development and overall responsibility for this program lies with the President and Chief Operating Officer of Dominion Nuclear Connecticut, Inc., as delegated by the Chief Executive Officer - Dominion Nuclear Connecticut, Inc. The President and Chief Operating Officer - Dominion Nuclear Connecticut, Inc. has delegated the necessary responsibility and authority to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer (SVP/CNO) - Dominion Nuclear Connecticut, Inc. Corporate authority is delegated to the Manager - Nuclear Oversight for the preparation and administration of this QAP Topical Report. Individual Vice Presidents are responsible for the implementation of their portion of this program. Audits of this program are the responsibility of the Manager - Nuclear Oversight.

Any revisions or additions shall be approved by affected departments prior to the incorporation of such changes into the program. Final approval of revisions or additions to this Policy Statement rests with the Senior Vice President – Nuclear Operations and Chief Nuclear Officer (SVP/CNO) - Dominion Nuclear Connecticut, Inc.

Senior Vice President – Nuclear Operations and Chief Nuclear Officer
Dominion Nuclear Connecticut, Inc.

INTRODUCTION
QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

This Quality Assurance Program (QAP) Topical Report contains the quality assurance requirements which are relevant to the safety of Millstone Power Station. This QAP Topical Report consists of three parts:

1. Introduction, which defines the purpose of the Topical Program and summarizes its scope and applicability;

2. The QAP, which is applicable in its entirety to all activities affecting the safety-related functions of structures, systems, and components in the Millstone Power Station nuclear units and ISFSI. Safety-Related structures, systems, and components for Millstone Units 2 and 3 are functionally identified in Appendix A of this QAP and are designated Category I by the licensee, Dominion Nuclear Connecticut, Inc. Applicability of Appendix A to each FSAR is addressed by existing nuclear unit specific design bases and licensing commitments, and also as specifically identified in each FSAR addressing Section 3.2.1 of Regulatory Guide 1.70. Safety Related structures, systems, and components for Millstone Unit 1 are defined in the DSAR. Safety Related and Important To Safety structures, systems, and components for Millstone's ISFSI are defined in the FSAR for the standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel. This QAP is also applicable in its entirety to materials, equipment, parts, consumables, and services designated as Category I. This QAP is applicable to other quality programs including Anticipated Transient Without Scram (ATWS) Quality Assurance, which is applicable to MP-2 only (MP-3 commits to Generic Letter 85-06), and to Electrical Equipment Qualification (EEQ), as defined by licensee commitments. This QAP is also applicable to Station Blackout Quality Assurance (SBOQA) as identified in licensing commitments and delineated in applicable implementing procedures. Portions of this QAP are also applicable to Fire Protection Quality Assurance (FPQA) and Radwaste Quality Assurance (RWQA), which are delineated in applicable program manuals and procedures.

3. Appendices, which provide supporting statements and tabulations.

This QAP Topical Report has been prepared to document that a quality assurance program has been established and implemented to assure that adequate quality requirements are being complied with to safeguard licensee employees, contracted personnel and the public during the life of the Millstone Power Station nuclear units and ISFSI. In addition, there are other programs to safeguard licensee employees, contracted personnel, and the public.

The controls which implement the actions identified in this QAP are procedures and instructions which delineate actions and steps necessary to accomplish quality requirements. Procedures and instructions are written by groups, divisions, departments, branches, or sections which have the responsibility for implementing actions as assigned by this QAP. Quality procedures and revisions thereto are reviewed by and concurred with by Nuclear Oversight in accordance with QAP 2.0, "Quality Assurance Program" and QAP 5.0, "Procedures, Instructions, and Drawings".

This QAP is responsive to applicable codes, Nuclear Regulatory Commission regulatory requirements, accepted industrial standards and revisions thereto. Provisions are established to update this QAP Topical Report in accordance with revisions to codes, standards and regulatory requirements, and to inform cognizant personnel to implement appropriate action to assure the highest standard of quality is achieved for structures, systems, components, and services for the Millstone Power Station nuclear units and ISFSI.

Manager - Nuclear Oversight

1.0 ORGANIZATION

1.1 INTRODUCTION

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

NOTE

In the remainder of QAP 1.0, the text describes functions that support Millstone Power Station, unless otherwise specified. Units 2 and 3 are operational. Unit 1 is defueled and in a decommissioning mode. Applicable regulations and standards are addressed throughout the QAP as appropriate.

1.2 ORGANIZATION

The Chief Executive Officer - Dominion Nuclear Connecticut, Inc. has ultimate responsibility and overall authority for the Dominion Nuclear Connecticut, Inc. nuclear program, and has delegated the necessary responsibility and authority for all Nuclear Operations to the President and Chief Operating Officer - Dominion Nuclear Connecticut, Inc. who has delegated the necessary responsibility and authority to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer (SVP/CNO) - Dominion Nuclear Connecticut, Inc.

1.3 KEY MANAGEMENT RESPONSIBILITIES AND AUTHORITY

1.3.1 The Senior Vice President - Nuclear Operations is the Corporate individual responsible to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer (SVP/CNO) - Dominion Nuclear Connecticut, Inc. for the operations of the Nuclear Stations and ISFSI. He has overall responsibility for implementing the quality assurance program for the operational phase of the Nuclear Stations.

1.3.2 Site Vice President - Millstone

The Site Vice President - Millstone has been delegated the necessary responsibility and authority for the management and direction of all activities related to the operation of Millstone Power Station and ISFSI by the SVP/CNO - Dominion Nuclear Connecticut, Inc. The Site Vice President - Millstone has overall responsibility for construction, operation, maintenance, modification, quality assurance and implementation of this QAP at Millstone Power Station. The following licensing basis positions report directly to Site Vice President - Millstone:

- Director - Nuclear Station Operations & Maintenance
- Director - Nuclear Station Safety & Licensing

1.3.3 Director - Nuclear Station Operations & Maintenance

Director - Nuclear Station Operations & Maintenance is responsible for establishing common policies and standards pertaining to the operating units and ISFSI, the safe operation and maintenance of the units, including the decommissioning and related activities for Unit 1, for services in support of the station, and implementation of this QAP. The Director - Nuclear Station Operations & Maintenance is responsible for maintaining compliance with requirements of the Operating License and Technical Specifications as well as applicable federal, state and local laws, regulations and codes. The following departments report directly to the Director - Nuclear Station Operations & Maintenance:

- Nuclear Operations
- Nuclear Maintenance
- Nuclear Site Services
- Nuclear Outage and Planning

Nuclear Training and Supply Chain Management (Site) are matrixed to the Director - Nuclear Station Operations & Maintenance.

1.3.4 Director - Nuclear Station Safety & Licensing

Director - Nuclear Station Safety & Licensing is responsible for implementation of this QAP. The following departments report directly to the Director - Nuclear Station Safety & Licensing:

- Nuclear Procedures & Document Administration
- Radiological Protection & Chemistry
- Nuclear Organizational Effectiveness

Emergency Preparedness, Protection Services and Information Technology are matrixed to the Director - Nuclear Station Safety & Licensing.

Nuclear Training, Emergency Preparedness, and Protection Services all report to the Vice President - Nuclear Support Services in the Nuclear Business Unit. Security is part of Protection Services. Nuclear Engineering reports to the Vice President - Nuclear Engineering and Services in the Nuclear Business Unit.

1.3.5 Director - Nuclear Oversight

The Director - Nuclear Oversight is the corporate individual responsible for the effective performance of Nuclear Oversight. Overall responsibility for the Millstone QAP has been delegated to the Manager - Nuclear Oversight by the SVP/CNO - Dominion Nuclear Connecticut, Inc. The Director - Nuclear Oversight is the corporate individual responsible with the necessary authority and responsibility for the following:

- Overall direction of the quality assurance program

- Development and implementation of policies, plans, requirements, procedures, and conduct of audits

The Director - Nuclear Oversight (NO) is responsible for determining the necessity for escalation activities for Audit Findings.

1.3.6 Manager - Nuclear Oversight

The Manager - Nuclear Oversight reports to the Director - Nuclear Oversight and is responsible to the Director - Nuclear Oversight for the effective performance of Millstone Nuclear Oversight. The Manager - Nuclear Oversight acts as advisor to the Site Vice President - Millstone and the SVP/CNO - Dominion Nuclear Connecticut, Inc. on items related to nuclear quality and safety at the Millstone Power Station and ISFSI. Overall responsibility for the Millstone QAP has been delegated to the Manager - Nuclear Oversight by the SVP/CNO - Dominion Nuclear Connecticut, Inc. The Manager - Nuclear Oversight has the necessary authority and responsibility for the following:

- Direction of the Millstone quality assurance program
- Development and implementation of Millstone policies, plans, requirements, procedures, and audits
- Verification to assure compliance with 10CFR50 Appendix B and other regulatory requirements
- Verification of the implementation of the QAP Topical Report requirements
- Preparation and issuance of the QAP Topical Report
- Identification of quality problems
- Recommendations for solutions to quality problems and verification of the implementation of the solutions

Verification is performed through a planned program of audits and inspections by Nuclear Oversight. The Manager - 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 - 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 - Nuclear Oversight is provided "Stop Work" authority whereby he/she can suspend unsatisfactory work and control further processing or installation of non-conforming materials. The authority to stop work is assigned to Nuclear Oversight personnel and delineated in an approved procedure.

1.3.7 Nuclear Maintenance

Nuclear Maintenance is responsible for on-line maintenance, cost and scheduling, installation, maintenance, alterations, adjustment and calibration, replacement and repair of plant electrical and mechanical equipment, and instruments and controls. Responsibilities include scheduling of surveillances required by Technical Specifications, establishing standards and frequency of calibration for instrumentation and ensuring instrumentation and related testing equipment are properly used, inspected and maintained. Nuclear Maintenance is also responsible for directing and coordinating maintenance activities for the ISFSI.

1.3.8 Nuclear Operations

Nuclear Operations is responsible for operations, including fire protection. The Manager - Nuclear Operations is responsible for the safe and efficient operation of the units including Unit 1, which is in a decommissioned mode, and the ISFSI. During accident situations, if currently holding an active license on the unit (Senior Reactor Operator (SRO) for Unit 2 or 3, or Certified Fuel Handler (CFH) for Unit 1 related responsibilities, the Manager - Nuclear Operations may relieve the Shift Manager of the responsibility of directing the licensed Control Room operators. The following groups report to the Manager - Nuclear Operations:

- Unit Nuclear Operations
- Nuclear Operations Support
- Nuclear Operations Work Control

1.3.9 Unit Nuclear Operations

The Unit Nuclear Operations groups report to the Manager - Nuclear Operations.. Each group includes the following key supervisory positions:

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

Unit 2 Nuclear Operations is responsible for operations regarding the Unit 1 Spent Fuel Pool Island and auxiliary systems. The transfer of Unit 1 operations responsibility to Unit 2 Nuclear Operations does not impact the capability of Unit 2 Operators to perform their duties, including day-to-day functions and accident and transient mitigation.

1.3.9.1 Supervisor - Nuclear Shift Operations

The Supervisor - Nuclear Shift Operations provides general supervision for the operation of the respective unit, and coordinates unit operations with maintenance, work management, and other groups. As stipulated in Technical Specifications or in Appendix B, either the Manager - Nuclear Operations or the Supervisor - Nuclear Shift Operations holds an appropriate license

on the Unit (SRO for Unit 3 and SRO and CFH for Unit 2). Unit 2 Operations is responsible for operations regarding the Unit 1 Spent Fuel Pool Island and auxiliary systems. The Supervisor - Nuclear Shift Operations assures the safe and efficient operation of the assigned unit in accordance with applicable licenses, operating instructions and procedures, emergency procedures and safety rules and regulations. During accident situations, if currently holding an active license on the unit (SRO for Unit 3 and Unit 2, CFH for Unit 2 responsibilities for Unit 1 Spent Fuel Pool and related systems), the Supervisor - Nuclear Shift Operations may relieve the Shift Manager of the responsibility of directing the licensed Control Room operators.

1.3.9.2 Shift Managers

The Shift Managers report to the Supervisor - Nuclear Shift Operations and are responsible for the Control Room command function. The Shift Manager holds an appropriate license on the unit (SRO for Unit 3; SRO and CFH for Unit 2). 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. Unit 2 Control Room provides control and supervision of Unit 1 activities.

During accident situations, unless properly relieved, the Shift Manager remains in the Control Room and directs the activities of the licensed operators. The Shift Manager has direct authority to shut down the respective unit if, in the Shift Manager's opinion, serious abnormal conditions exist. A Unit 3 Shift Manager fulfills the facility staff requirements of the Shift Supervisor for the Unit 3 Technical Specifications.

1.3.9.3 Unit Supervisor

The Unit Supervisor holds an appropriate license on the unit (SRO) and supervises the operators in the Control Room. The Unit Supervisor directs activities of the licensed Control Room operators, and may operate the controls of equipment and piping systems from the Control Room, or alternate station control location. Unit 2 Control Room provides control and supervision of activities on Unit 1.

1.3.9.4 Control Operators

Control Operators for Millstone Units 2 and 3 hold a Reactor Operator or Senior Reactor Operator license on the unit. The Control Operators are responsible to perform the following duties:

- Start up, operate, and shut down nuclear plant equipment

including, but not limited to, as applicable to the Unit's status, reactor, reactor auxiliaries, turbine generator unit and its auxiliaries as necessary to satisfy system requirements or station conditions. (Unit 1 is decommissioned.)

- Test, as scheduled, control room instruments and controls. Unit 1 is decommissioned.
- Maintain required logs and calculations, observe these logs for indications of faulty operation, and notify the on-duty Unit Supervisor or the Shift Manager of abnormal plant conditions

1.3.9.5 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

1.3.10 Nuclear Outage & Planning

Nuclear Outage & Planning is responsible for planning online-maintenance and outage activities.

1.3.11 Nuclear Site Services

Nuclear Site Services is responsible for project support of the station, including project construction and project controls.

1.3.12 Nuclear Procedures & Document Administration

Nuclear Procedures & Document Administration is responsible for nuclear records management and procedures.

1.3.13 Radiological Protection & Chemistry

Radiological Protection & Chemistry carries out chemistry and health physics functions and reports to the Director - Nuclear Station Safety and Licensing. This reporting relationship provides radiation protection functions with sufficient organizational freedom and independence from operating pressures as required by the unit Technical Specifications. ***The Director – Nuclear Station Safety and Licensing designates an individual that meets the "Radiation Protection Manager" position qualifications required by the unit Technical Specifications to perform Radiation Protection Manager duties and responsibilities.*** Radiological Protection & Chemistry includes the following:

- scheduling and conducting radiological 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
- Chemistry

1.3.14 Nuclear Organizational Effectiveness

Nuclear Organizational Effectiveness is responsible for the Corrective Actions Program, the Operating Experience Program and Shift Technical Advisors. Nuclear Organizational Effectiveness reports directly to the Director - Nuclear Station Safety and Licensing, and is matrixed to the Director - Organizational Effectiveness.

1.3.15 Emergency Preparedness

Emergency Preparedness is responsible for development and maintenance of the on-site radiological emergency plan and the development and coordination of required off-site radiological emergency response plan for Millstone Power Station and ISFSI. Emergency Preparedness reports to the Director - Protective Services & Emergency Preparedness and is matrixed to the Director - Nuclear Station Safety & Licensing.

1.3.16 Nuclear Protection Services

Nuclear Protection Services is responsible for station protective services, including security, for Millstone Power Station and ISFSI. Nuclear Protection Services reports to the Director - Protective Services & Emergency Preparedness (corporate) and is matrixed to the Director - Nuclear Station Safety & Licensing.

1.3.17 Nuclear Training

Nuclear Training is responsible for operator and technical training including ISFSI related training. The operator training group reports to the Director - Nuclear Training (corporate) to provide sufficient organizational freedom and independence from operating pressures as required by the unit Technical Specifications. Nuclear Training is matrixed to the Director - Nuclear Station Operations and Maintenance.

1.3.18 Nuclear Engineering

Nuclear Engineering reports to the Director - Nuclear Engineering. Nuclear Engineering is responsible for design engineering functions, supporting activities, engineering programs, configuration management including design and configuration control and engineering assurance, engineering technical support and systems engineering, including material engineering. The Director - Nuclear Engineering reports to the Vice President - Nuclear Engineering (corporate) and is matrixed to the Site Vice President.

Nuclear Fuel Engineering reports to the Director - Dominion Nuclear Analysis and Fuel. The group is responsible for engineering activities in safety analysis and nuclear fuel, including probabilistic risk assessment and reactor and radiological engineering. Nuclear Fuel Engineering is matrixed to the Director - Nuclear Engineering.

1.3.19 Supply Chain Management (SCM)

Supply Chain Management (SCM) is responsible for procurement. Responsibilities include approval and oversight of vendors that provide quality-related material and services including source and receipt inspection. Supply Chain Management (SCM) reports to the Director - Dominion Supply Chain Management (Generation). The Supply Chain Site Manager is matrixed to the Director - Nuclear Station Operations & Maintenance.

1.3.20 Information Technology

Information Technology is responsible for the Quality Assurance Software Program. Information Technology reports to the Director - Dominion Information Technology Business Account (Generation), and is matrixed to the Director - Nuclear Station Safety & Licensing.

1.4 QUALITY-RELATED RESPONSIBILITIES COMMON TO ALL DEPARTMENT HEADS

The head of each department performing quality activities is responsible for:

- Administering those activities within their organization which are required by this QAP;
- Ensuring implementation of the 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 QAP Topical Report; and
- Performing and coordinating quality activities within their department and interfacing with the Nuclear Oversight department.

Each individual performing or verifying activities affecting quality is responsible to conduct those activities in accordance with the requirements of this QAP 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 the Dominion

Nuclear Connecticut, Inc. organizational charts, policy statements, and written job or functional descriptions.

Vendors may be delegated the execution of quality assurance functions; however, the company shall retain responsibility for this Quality Assurance Program.

1.5 MANAGEMENT QUALITY ASSURANCE REVIEW

The Senior Vice President - Nuclear Operations and Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. is responsible for the assessment of the scope, status, implementation, and effectiveness of the QAP. To meet this responsibility, a team of qualified individuals is appointed to perform a biennial Management Quality Assurance Review. The team is made up of individuals knowledgeable in quality assurance, quality activities, auditing, management responsibilities, and the QAP Topical Report. This review is:

- A systematic evaluation;
- pre-planned toward the objective of determining the adequacy of the QAP and its compliance with Appendix B to 10 CFR 50, 10 CFR 72, and other regulatory requirements; and
- capable of identifying, communicating, and tracking any required corrective action.

The Senior Vice President - Nuclear Operations and Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. has delegated the responsibility for the Management Quality Assurance Review to the Manager - Nuclear Oversight.

1.6 SPECIFIC QAP RESPONSIBILITIES

The Senior Vice President - Nuclear Operations and Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. resolves all disputes related to the implementation of the QAP for which resolution is not achieved at lower levels within the organization.

1.7 SUCCESSION OF RESPONSIBILITY FOR OVERALL PLANT OPERATION

The succession of responsibility for overall plant instructions or special orders, in the event of absences, incapacitation of personnel or other emergencies, is as follows:

- Site Vice President - Millstone
- Director - Nuclear Station Operations & Maintenance
- Manager - Nuclear Operations
- Licensed Supervisor - Nuclear Shift Operations designated by Site Vice President - Millstone
- Shift Manager (SRO)
- Licensed Unit Supervisor (SRO)

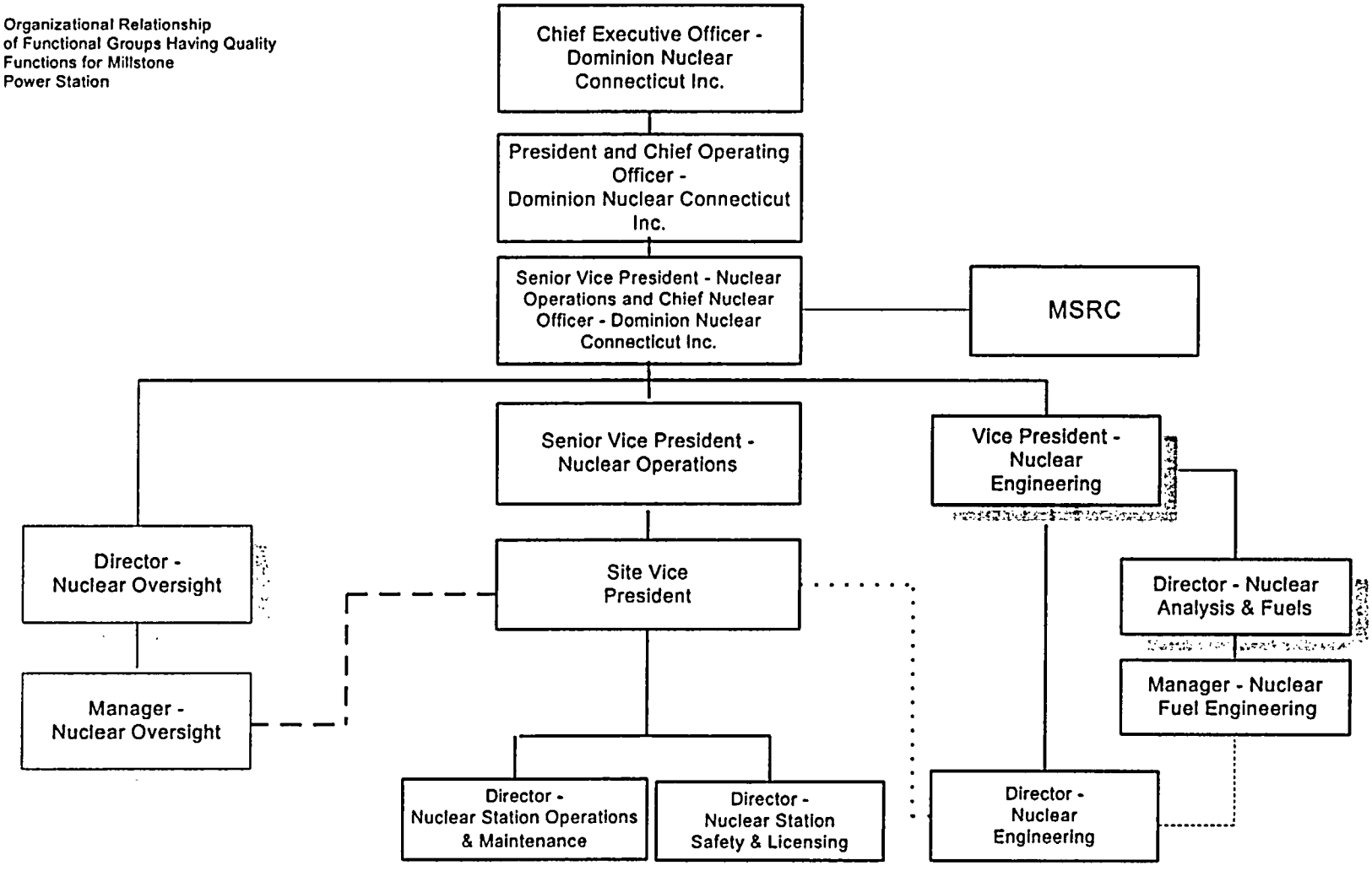
1.8 ORGANIZATION CHARTS

NOTE

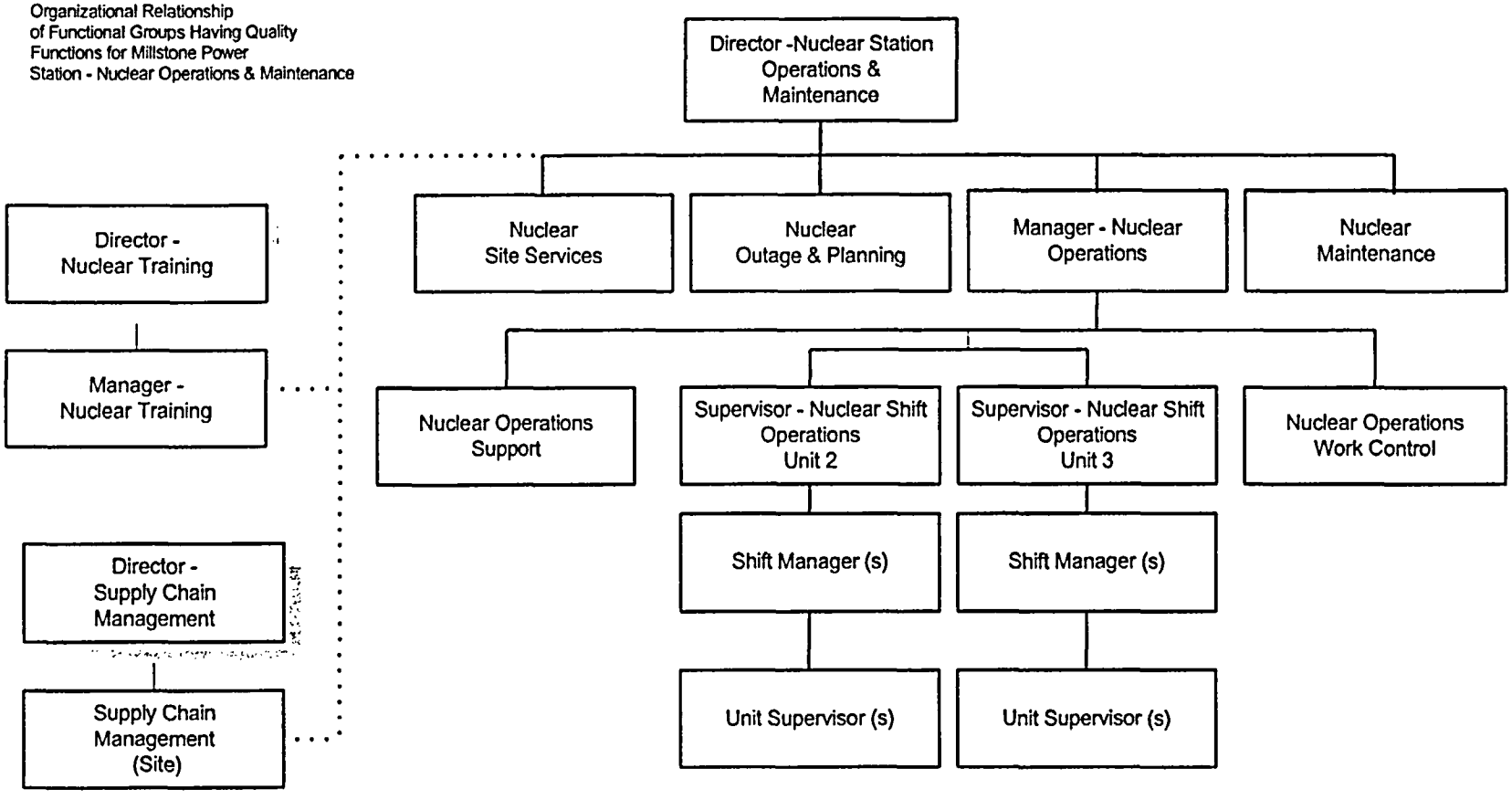
The following organization charts are incorporated by reference in the Emergency Plan - Millstone Power Station. Changes to these organization charts require an effectiveness review in accordance with 10 CFR 50.54 (q).

Offsite Vice President/ Directors are shadowed to denote corporate reporting positions. Dotted lines represent matrixed relationships for site related communication and administrative purposes.

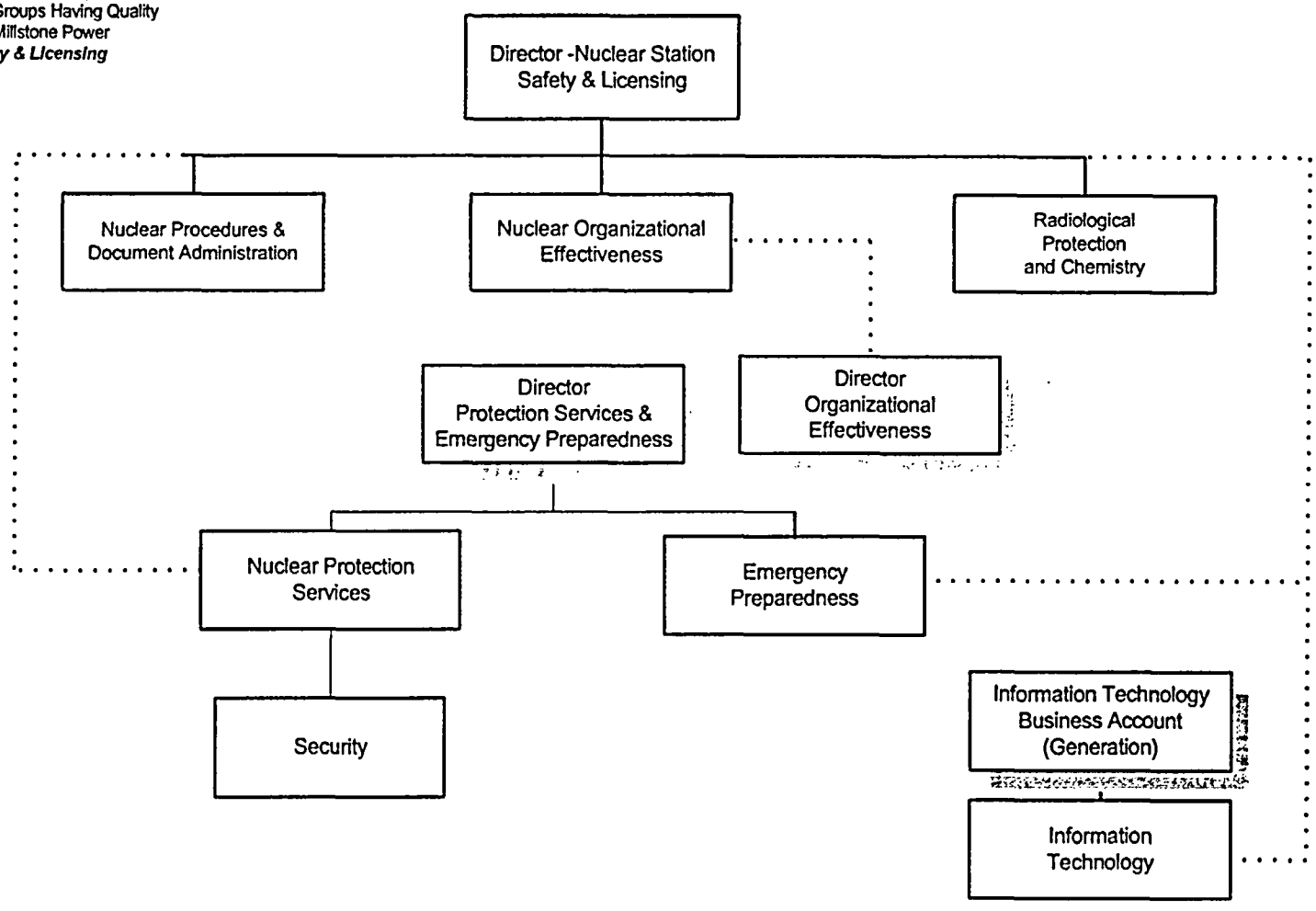
Organizational Relationship
of Functional Groups Having Quality
Functions for Millstone
Power Station



Organizational Relationship
of Functional Groups Having Quality
Functions for Millstone Power
Station - Nuclear Operations & Maintenance



Organizational Relationship
of Functional Groups Having Quality
Functions for Millstone Power
Station - ***Safety & Licensing***



2.0 QUALITY ASSURANCE PROGRAM

2.1 GENERAL REQUIREMENTS

The company has established a Quality Assurance Program (QAP) for the Millstone Power Station which 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 company's policy with regard to quality assurance for the Millstone Power Station nuclear units and ISFSI. This QAP Topical Report is established to accomplish the required level of quality in activities carried out throughout the life of the Station's operating nuclear power plants, the ISFSI and the decommissioning of Unit 1.

This QAP applies in its entirety to all activities affecting the safety-related functions of structures, systems and components of the Millstone Power Station nuclear units and the ISFSI. Safety-Related structures, systems and components for Millstone Units 2 and 3 are functionally identified in Appendix A of this QAP and are designated Category I by the company. Applicability of Appendix A to each FSAR is addressed by existing Nuclear Unit specific Design Bases and Licensing commitments, and also as specifically identified in each FSAR addressing Section 3.2.1 of Regulatory Guide 1.70. Millstone Unit 1 Safety-related structures, systems and components are defined in the DSAR. Safety Related and Important-to-Safety structures, systems and components for Millstone's ISFSI are defined in the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel. This QAP is also applicable in its entirety to materials, equipment, parts, consumables and services designated Category I.

This QAP applies to other quality programs including Anticipated Transient Without Scram (ATWS) Quality Assurance, which is applicable to MP-2 only (MP-3 commits to Generic Letter 85-06), and to Electrical Equipment Qualification (EEQ), as defined by company commitments. This QAP is also applicable to Station Blackout Quality Assurance (SBOQA) as identified in licensing commitments and delineated in applicable implementing procedures. Portions of this QAP 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 is the process used to evaluate, determine and assign the appropriate quality assurance classification (Safety related or augmented quality) to structures, systems, components, parts, materials, activities and consumables. For quality software, the Software Quality Assurance (SQA) Program provides instructions to classify software and describe the appropriate level of documentation that is warranted for software used to support those functions of structures, systems, and components that are affected by the QAP.

The requirements of this QAP are implemented by the company which operates Millstone Power Station, and their vendors performing activities affecting quality

structures, systems, and components of the Station's nuclear power plants and ISFSI.

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 QAP is accomplished by Nuclear Oversight audits, surveillances and inspections, by offsite review committee reviews, and by the independent review team which performs the biennial Management Quality Assurance Review described herein and in QAP 1.0, "Organization", Section 1.5. Organizations outside the company are required to review the status and adequacy of that part of this QAP for which they have been delegated responsibility.

2.2 IMPLEMENTATION

2.2.1 GOALS AND OBJECTIVES

The goals of this QAP 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 and ISFSI structures, systems, and components. To meet these goals, the following objectives of this QAP have been defined:

a. Define, through procedures, the quality activities that apply to design, fabrication, procurement, construction, testing, operation, refueling, repair, maintenance and modification of the Station nuclear power plants and ISFSI;

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 the Station nuclear power plants are performed consistent with the company's 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 Site Vice President - Millstone and the Senior Vice President - Nuclear Operations & Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. of unresolved problems and trends which could have a significant effect on nuclear power plant and ISFSI safety.

2.2.2 PROGRAM DOCUMENTATION

This QAP defines the company's nuclear policies, goals, and objectives, and is used as guidance for the development of the various division, department, branch, or section procedures. Revisions to this QAP shall be made as needed to reflect current requirements and descriptions of activities prior to implementation. These revisions shall be made in accordance with a company Procedure.

Revisions to this QAP, 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); 10 CFR 50.55 (f)(3); 10 CFR 50.71(e) and (f) and 10 CFR 72.70.

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. Nuclear Oversight reviews other department quality procedures for compliance with this QAP through its audit program. 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 Director is responsible for implementation of this QAP 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 QAP applies to all activities affecting the safety-related functions of the structures, systems and components as addressed in the Safety Analysis Reports (SARs). Safety-Related structures, systems, and components are functionally identified in Appendix A for Units 2 and 3 and also as specifically identified in each FSAR addressing Section 3.2.1 of NRC Regulatory Guide 1.70. Unit 1 Safety-Related structures, systems, and components are defined in the DSAR. ISFSI Safety-Related structures, systems, and components are defined in the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel.

For structures, systems and components covered by the ASME Code, the company's 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 the company's 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 QAP provides controls over special processes and skills necessary to attain the required quality, and the need for verification of quality by inspection and test.

Nuclear Oversight and applicable company 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 QAP, which complies with the 18 criteria set forth in Appendix B to 10 CFR 50.

2.2.4 PARTICIPATING ORGANIZATIONS

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

Nuclear Oversight is responsible for: a) the development, coordination, and administrative control of this QAP including coordination of Nuclear Oversight procedure review and approval and b) assuring issuance of this QAP Topical Report as a controlled document (as described in QAP 6.0, 'Document Control). Procedure reviews shall be performed in accordance with QAP 5.0, "Procedures, Instructions, and Drawings".

The company requires that its approved vendors performing quality activities 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 company retains overall responsibility for the Millstone Power Station Quality Assurance Program. The specific quality activities performed by these organizations are specified in the procurement documents. ***Nuclear Oversight*** 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, Supply Chain Management (SCM) is responsible for the subsequent performance, as appropriate, of surveillances and inspections of approved vendor's quality assurance programs to assure continued implementation of quality requirements. Supply Chain Management (SCM) 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 QAP 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 QAP. These vendors may be contracted to perform quality activities under their approved quality assurance program or directly under the requirements of this QAP.

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 the Station nuclear power plants and ISFSI. Additional guidance is established in the company's 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 President and Directors are responsible for implementing this QAP within their organization. The Manager - Nuclear Oversight will assist in development, coordination, and review of the program.

The Senior Vice President - Nuclear Operations & Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. assures that a management review of this QAP is conducted on a biennial basis by an independent team to assess the scope, status, implementation, and effectiveness, and to assure compliance with NRC licensing commitments. Senior Vice President - Nuclear Operations & Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. has delegated the responsibility for the management review to the Manager - Nuclear Oversight.

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 Senior Vice President - Nuclear Operations & Chief Nuclear Officer - Dominion Nuclear Connecticut, Inc. who shall assure appropriate corrective action is taken.

3.0 DESIGN CONTROL

3.1 GENERAL REQUIREMENTS

This QAP 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.

Nuclear Engineering 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 for the Millstone Power Station nuclear power plants and ISFSI rests with Nuclear Engineering. The division of responsibilities and jurisdictional boundaries for design control program implementation are set forth in company procedures. Although other organizations may be delegated the task of establishing and executing the design control program or any part thereof, Nuclear Engineering shall retain overall responsibility for the program. The applicable requirements of this QAP shall be imposed on other organizations delegated the task of establishing or executing the design control program in accordance with QAP 4.0, "Procurement Document Control" and QAP 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 QAP 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 QAP 15.0, "Nonconforming Material, Parts, Components, or Services" and/or QAP 16.0, "Corrective Action".

3.2 IMPLEMENTATION

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

Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, to verify that company processes are effectively complying with this QAP 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 QAP 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 company 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 and ISFSI, 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 the company or another qualified organization delegated by the company to perform this function.

Proposed design change modifications are submitted to the appropriate Nuclear 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 10CFR50.59 and 10CFR72.48 evaluations associated with proposed design changes are performed by the offsite review committee. The sequence of the offsite review committee review depends upon the determination of whether a license amendment (for Unit 1, also an unreviewed decommissioning question), is involved (i.e., in accordance with ANSI N18.7, if a proposed change in the facility requires a license amendment then the offsite review committee 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 the offsite review committee is performed to assure that:

a. the adequacy of the proposed change is substantiated;

b. changes that require a license amendment are properly identified and handled per 10CFR50.59, and 10CFR72.48; (for Unit 1, unreviewed decommissioning questions are properly identified and handled per 10CFR50.82);

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 QAP 15.0, "Nonconforming Materials, Parts, Components, or Services" and/or QAP 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 and ISFSI.

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 Nuclear 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 nuclear unit or ISFSI FSAR/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.

The company is responsible for assuring that the design documents generated by vendors for the Station nuclear power plants and ISFSI are technically correct, approved, and maintained.

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 GENERAL REQUIREMENTS

This QAP provides measures to control the procurement of materials, equipment, parts and services for quality structures, systems, and components for the Millstone Power Station nuclear units and ISFSI 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 a Station nuclear power plant or ISFSI. 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/nuclear unit management reviews and approves such requests in accordance with applicable procedures. Supply Chain Management (SCM) 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 enterprise-wide Supply Chain Management system are purchased without additional procurement engineering evaluations.

Vendors utilized to perform quality activities for the Station nuclear power plants or the ISFSI 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, whether initiated by the company or its representative, 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 QAP 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 QAP 3.0, "Design Control".

Procurement engineering evaluations of requests for quality materials, equipment, parts, and services requests are performed by Supply Chain Management (SCM) personnel 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, 10 CFR 72, 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 the company or its designated representative; 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 the company or its representative 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 to the company 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 company's ability to verify the quality of the product or service being purchased. The company 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 contain detailed supplementary quality assurance requirements and/or witness/hold points to meet the company's requirements.

Procurement documents are reviewed by Supply Chain Management (SCM) 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 by the company shall be performed after receipt at Millstone Power Station but prior to installation in the plant or ISFSI or prior to the point when the installation is declared operational.

5.0 PROCEDURES, INSTRUCTIONS, AND DRAWINGS

5.1 GENERAL REQUIREMENTS

This QAP provides measures for the preparation, review, approval, control and distribution of procedures, instructions and drawings for activities affecting quality structures, systems, and components of the Millstone Power Station nuclear units and ISFSI. 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. Nuclear Oversight reviews other quality procedures which implement this QAP as described in Section 5.2.1 below. Comments concerning compliance with this QAP and regulatory requirements are identified and resolved. Any vendors utilized to perform quality activities for the Station nuclear power plant or ISFSI may be delegated responsibility for preparing, maintaining, issuing and verifying the implementation of appropriate program documents which are selectively reviewed/approved by the appropriate Director or Responsible Engineer. 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 and/or 10 CFR 72, Subpart G, for the ISFSI.

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 Director or responsible engineer assures that any vendors utilized to perform quality activities for the Station nuclear power plant or ISFSI implement quality assurance programs which contain written instructions for preparation, review and approval of procedures and instructions affecting quality. In addition, vendor procedures which affect quality that are to be used for onsite activities are reviewed for concurrence by Nuclear Oversight to assure compliance with this QAP Topical Report.

The company is responsible for the preparation, review and approval of station and plant quality procedures. The procedures include test procedures and overall site administrative procedures which implement the requirements of this QAP. Each company organization is also

responsible for the preparation, review and approval of procedures covering quality activities in accordance with individual license requirements. Nuclear Oversight reviews quality procedures and special process procedures through its audit program. The criteria for documents requiring Nuclear Oversight review is defined in quality procedures to assure:

a. Administrative procedures and manuals comply with this QAP 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 QAP 10.0, "Inspection". The Nuclear Oversight Quality Control group must concur with quality related procedures related to maintenance, modification and inspection.

5.2.2 DRAWINGS

The design control and verification measures described in QAP 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 company 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 or ISFSI are described in company 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 QAP provides measures to assure controlled distribution of documents pertinent to quality activities performed for the Millstone Power Station nuclear units and ISFSI 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

The company 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 the Station nuclear power plants/ISFSI 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. Final Safety Analysis Reports;

k. Procurement Documents;

l. Design Change Records;

m. Topical Report;

n. Nonconformance Reports;

o. Computer Codes.

The company procedures describe the measures taken by Nuclear Oversight 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 QAP 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 the Station nuclear power plants or ISFSI 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

The company 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

Nuclear Procedures and Document Administration is responsible to implement a program, through applicable procedures, for the retention and retrieval of drawings and records submitted by cognizant company personnel. Nuclear Procedures and Document Administration 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 the Station nuclear power plants or ISFSI 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

Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, to verify that company processes are effectively complying with this QAP 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 QAP provides measures for the control of purchased material, equipment, parts and services utilized in quality activities for the Millstone Power Station nuclear units and ISFSI 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

Supply Chain Management (SCM) utilizes one or more of the following methods in evaluating the qualifications of a potential vendor:

a. Audits performed by Nuclear Oversight and/or Supply Chain Management (SCM) coordinated review of potential vendor utilizing one or more departments (i.e., Nuclear Engineering, Nuclear Site Services, Nuclear Maintenance, Nuclear Operations);

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. ASME Certificate of Accreditation for Authorized Inspection Agencies;

f. Commercial grade surveys and/or coordinated review of a potential vendor utilizing one or more departments, (i.e., Nuclear Engineering, Nuclear Site Services, Nuclear Operations, Supply Chain Management);

g. 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 QAP.

Supply Chain Management (SCM) 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

Supply Chain Management (SCM) 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 Supply Chain Management (SCM).

7.2.3 RECEIPT INSPECTION

Receipt inspection for procured items is performed by Supply Chain Management (SCM) in accordance with quality procedures which delineate requirements and responsibilities necessary to perform inspection functions. The exception to this is Nuclear Fuel Engineering performing receipt inspection for new fuel assemblies in accordance with quality procedures. 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 company 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 Supply Chain Management (SCM) and/or Nuclear Fuel Engineering and other appropriate department personnel shall review for acceptability those documents which pertain to the requirements in the procurement document, in accordance with this QAP 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. Nuclear Oversight shall provide oversight of these activities via surveillance, or inspection, as appropriate, to verify compliance with this requirement.

7.2.5 COMMERCIAL DEDICATION

The company 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 to be performed by Supply Chain Management (SCM), other company processes, or other appropriate groups.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

8.1 GENERAL REQUIREMENTS

This QAP provides measures for the identification and control of materials, parts and components, including partially fabricated assemblies utilized in quality activities for the Millstone Power Station. 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 the company assure that the identification of inspections, tests, and operation status of structures, systems, and components is known to affected organizations.

8.2 IMPLEMENTATION

Company 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 the Station nuclear power plants or ISFSI, the company may delegate any portion of the implementation of the identification and control program to a vendor. If delegated, contracts require that the vendor establish an identification and control program which meets this QAP 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. Supply Chain

Management (SCM) 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 QAP 15.0, "Nonconforming Materials, Parts, Components, or Services".

9.0 CONTROL OF SPECIAL PROCESSES

9.1 GENERAL REQUIREMENTS

This QAP provides measures to assure the control of special processes associated with quality structures, systems, and components of the Millstone Power Station nuclear units and ISFSI 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 the Station's nuclear power plants or ISFSI, the responsible engineer assures that special process data and documentation is reviewed, and that vendor special process procedures utilized for the Station nuclear power plants or ISFSI 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.

The company special process procedures utilized during quality activities for the Station nuclear power plants or ISFSI are prepared, reviewed and approved in accordance with procedures as specified in QAP 5.0, "Procedures, Instructions, and Drawings".

9.2.1 PROCEDURE QUALIFICATION AND CONTROL

The company 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 the company 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. Supply Chain Management (SCM) or Nuclear Oversight shall provide an oversight function via audits, surveillances, or inspections, as appropriate.

Nuclear ***Engineering*** is responsible for assuring the training, testing, and certification of all the Millstone Power Station NDE personnel is in accordance with the ***specifications and standards.***

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 the company 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 Station nuclear power plants or ISFSI, are kept current and maintained in appropriate company records retention facilities.

10.0 INSPECTION

10.1 GENERAL REQUIREMENTS

This QAP provides measures to assure that inspections of Millstone Power Station nuclear units and ISFSI 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 the Station nuclear power plants or ISFSI, procedures shall define the need for inspection (e.g., receipt inspection, installation, and product acceptance) to assure quality requirements are met.

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

Nuclear Oversight shall perform inspections of modification and maintenance activities for quality structures, systems, and components. The criteria used to determine when Nuclear Oversight inspection shall be required for these activities and for the preparation of inspection plans shall be identified in Nuclear Oversight procedures. The 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 the Station nuclear power plants or the ISFSI 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. 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 Nuclear Oversight. Audits and surveillances are performed by Nuclear Oversight, 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 company training programs.

Inspections are performed by Nuclear Oversight personnel, qualified contracted personnel, and company personnel who are independent from undue pressure such as cost or schedule considerations. 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. 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 Nuclear Oversight in accordance with QAP 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 company 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 Supply Chain Management (SCM) and 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.

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 QAP requires a documented test control program for Millstone Power Station nuclear units and ISFSI 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.

The company procedures delineate the methods and responsibilities for controlling, accomplishing and documenting testing of the Station nuclear power plants and ISFSI quality structures, systems, and components.

Vendors utilized to perform quality activities for the Station nuclear power plants and ISFSI 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. Nuclear Oversight performs audits, surveillances, and inspections, as appropriate, of onsite vendor activities in this area. Supply Chain Management (SCM) and Nuclear Oversight are responsible for assuring documentation associated with these verification activities are maintained in the appropriate files until forwarded to the appropriate company records retention facilities 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 appropriate company records retention facilities 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

The company 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 company 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. 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 QAP 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 company's Records Management 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 company 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 committee or the Station Qualified Reviewer Program, as defined in applicable procedures. Supply Chain Management (SCM) 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. Supply Chain Management (SCM) and 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.

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

Vendors utilized to perform quality activities for the Station nuclear power plants or ISFSI 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. 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 QAP 15, "Nonconforming Materials, Parts, Components or Services" and QAP 16, "Corrective Action" respectively as appropriate.

13.0 HANDLING, STORAGE AND SHIPPING

13.1 GENERAL REQUIREMENTS

This QAP provides measures to assure proper handling, storage, shipping, cleaning and preservation of materials, equipment and parts used for Millstone Power Station nuclear units and ISFSI 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 the Station nuclear power plants or ISFSI 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.

The company 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 QAP 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 the Millstone Power Station nuclear units and ISFSI. 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 the Station nuclear power plants or ISFSI 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 at the Station, Supply Chain Management (SCM) 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 Nuclear Fuel Engineering. Nonconforming materials, equipment and parts are identified in accordance with QAP 15.0, "Nonconforming Materials, Parts, Components, or Services."

During tests and inspections of the Station nuclear power plants or ISFSI, a status tagging system is implemented by procedure to prevent inadvertent operations of quality structures, systems, and components.

The company 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 QAP 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 Power Station nuclear units and ISFSI 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 company and vendor personnel assigned at the Millstone Power Station and other personnel involved with Station 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. Supply Chain Management (SCM) 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 or ISFSI 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.

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 Station Corrective Action Program reporting as described in QAP 16.0, Corrective Action.

16.0 CORRECTIVE ACTION

16.1 GENERAL REQUIREMENTS

This QAP requires that an effective corrective action program be established to assure that conditions adverse to quality at the Millstone Power Station 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 company and vendor personnel assigned to the Millstone Power Station and other personnel involved with Station 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. Nuclear Oversight performs audits and surveillances, as appropriate, to verify that company departments are effectively complying with this QAP 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 Site Vice President - 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 QAP requires the maintenance, identification, retention and retrieval of records to furnish evidence of quality activities performed for the Millstone Power Station nuclear units and ISFSI 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. ISFSI records must meet the requirements of 10 CFR 72.174. Procedures establish requirements concerning record retention such as duration, location and assigned responsibility.

17.2 IMPLEMENTATION

The company 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 the Station nuclear power plants or ISFSI are responsible to implement measures for identification, maintenance, retention, retrieval and turnover to the company 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.

The company quality assurance records are identified, controlled and maintained in appropriate files and are identifiable to specific structures, systems, and components within the Station nuclear power plants or ISFSI. 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

The company quality assurance records are classified as life records or non-life records as delineated by "Nuclear Procedures and Document Administration". 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 ISFSI 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 ISFSI 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 company personnel and vendors, as appropriate, and are transmitted to the company records retention facilities. The responsibility of the company records retention facilities upon receipt of records is to maintain and provide controlled retrievability of records affecting the Station nuclear power plants or ISFSI, 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.

Quality Assurance Records are maintained in accordance with the NRC regulations, commitments to ANSI N45.2.9-1974, NRC Regulatory Guide 1.88, administrative procedures, and specific requirements for those Quality Assurance records stored on optical disks.

Quality Assurance records stored electronically will follow the guidance given in the Nuclear Information and Records Management Association (NIRMA) technical guideline, TG-15-1998, "Management of Electronic Records".

The following requirements apply to all Quality Assurance records which are stored on electronic storage media:

- Quality Assurance records will only be stored on appropriate electronic storage media meeting the requirements of the NIRMA guidelines. Determination of appropriate electronic media will be made by Information Technology based upon data format and level of access required.
- Quality Assurance records originally created in hard-copy form will be retained in hard-copy until such time as electronic versions of these Quality Assurance records are created, copied, and verified as legible on two (2) independent copies of an appropriate electronic storage media. File legibility verifications will be completed on all Quality Assurance records stored on electronic storage media by either visually verifying the file legibility or by electronically verifying exact binary file transfer.
- Periodic media inspections to monitor image degradation will be conducted in accordance with the media manufacturer's recommendations. These periodic inspections will be documented.
- Quality Assurance records stored on electronic media will be refreshed or copied onto new media and subsequently verified if the projected lifetime of that media does not exceed the retention period of the records stored on that media.
- Quality Assurance records originally created in electronic form may be retained in electronic form. Backup copies of associated electronic Quality Assurance records will be maintained in multiple physically independent electronic locations until such time as

images of these Quality Assurance records are created, copied, and verified on two (2) copies of an appropriate electronic storage media. The two copies of electronic storage media will then be stored in separate physical locations.

These requirements meet the intent of Generic Letter 88-18, "Plant Record Storage on Optical Disks", dated October 20, 1988.

18.0 AUDITS

18.1 GENERAL REQUIREMENTS

This QAP requires that a comprehensive system of planned and periodic audits shall be carried out to verify that quality activities for Millstone Power Station nuclear units are performed in compliance with this QAP 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 Station nuclear power plant and ISFSI quality activities under the oversight of the Management Safety Review Committee (MSRC). Audits are performed on activities where the requirements of 10 CFR 50, Appendix B and respective nuclear unit Technical Specifications are being implemented. In addition to those activities, audits are performed on areas associated with indoctrination and training programs, interface control among the company and vendors, vendor quality programs and the Supply Chain Management (SCM) 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 Nuclear Oversight. Schedules for vendor quality assurance activities are maintained by Supply Chain Management (SCM) and Nuclear Oversight, 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 QAP.

Approved vendors utilized to perform quality activities for the Station nuclear power plants or ISFSI 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. Supply Chain Management (SCM) 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 QAP.

18.2.2 REPORTING OF AUDIT RESULTS

Audit results are reviewed, approved, and reported in accordance with Nuclear Oversight and Supply Chain Management (SCM) 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 QAP.

Audit reports and follow up of audit item reports will be distributed to the Senior Vice President/Chief Nuclear Officer (SVP/CNO) - Dominion Nuclear Connecticut, Inc., the Senior Vice President - Nuclear Operations, the Site Vice President - Millstone and the Director - Nuclear Oversight.

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 that cannot be resolved by affected management are submitted to the Director - Nuclear Oversight for resolution with the responsible Vice President or the Senior VP - Nuclear Operations, with final resolution by the Senior Vice President/Chief Nuclear Officer.

18.2.4 RECORDS/REPORTS OF AUDITS

Audit records, reports, and associated documentation are retained in the company records retention facilities, as specified in applicable procedures.

APPENDIX A

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION
Unit 2/3 CATEGORY I STRUCTURES, SYSTEMS AND COMPONENTS

(Note: This Appendix is not applicable to Unit 1 - See DSAR, or to the ISFSI – See the FSAR for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel.)

The Materials, Equipment, and Parts List (MEPL) Program is the process used that provides instructions to identify structures, systems, components, parts, materials, and consumables that need to be safety-related and designated as Category I and Augmented Quality. For quality software, the Software Quality Assurance (SQA) Program provides instructions to classify software and describe the appropriate level of documentation that is warranted for software used to support those functions of structures, systems, and components that are affected by the QAP.

The following structures, systems, and components of a Millstone Power Station nuclear unit, including their foundations and supports, are designated as Category I. The pertinent quality assurance requirements of Appendix B to 10 CFR 50 are applied to all activities affecting the safety-related function of the structures, systems, and components as listed below and to other items and services specifically identified by the licensee in each FSAR addressing Section 3.2.1 of NRC Regulatory Guide 1.70.

(a) The reactor coolant pressure boundary.

(b) The reactor core and reactor vessel internals.

(c) Systems or portions of systems that are required for (1) emergency core cooling; (2) post-accident containment heat removal or; (3) post-accident containment atmosphere cleanup (e.g., hydrogen removal system).

(d) Systems or portions of systems that are required for (1) reactor shutdown; (2) residual heat removal or; (3) cooling the spent fuel storage pool.

(e) Those portions of the steam and feedwater systems of pressurized water reactors extending from and including the secondary side of steam generators up to and including the outermost containment isolation valves, and connected piping of 2-1/2 inches or larger nominal pipe size up to and including the first valve (including a safety or relief valve) that is either normally closed or capable of automatic closure during all modes of normal reactor operation.

(f) Cooling water, component cooling and auxiliary feedwater systems or portions of these systems including the intake structures, that are required for: (1) emergency core cooling; (2) post-accident containment heat removal; (3) post-accident containment atmosphere cleanup; (4) residual heat removal from the reactor or; (5) cooling the spent fuel storage pool.

(g) Cooling water and seal water systems or portions of these systems that are required for functioning of safety-related reactor coolant system components such as PWR reactor coolant pump seals.

(h) Systems or portions of systems that are required to supply fuel for emergency equipment.

(i) All electrical and mechanical devices and circuitry between the process and the actuated devices involved in generating or responding to signals that provide protective functions of safeguard systems.

(j) Systems or portions of systems that are required for (1) monitoring of systems safety-related and; (2) actuation of systems safety-related.

"Required for monitoring," i.e. Those parameters that provide information that is essential to permit the control room operator to take specific manually controlled actions for the direct accomplishment of the specified safety function.

(k) The spent fuel storage pool structure, including the fuel racks.

(l) The reactivity control system (e.g., control rods, control rod drives, and boron injection system).

(m) The control room, including its associated equipment and all equipment needed to maintain the control room with safe habitability limits for personnel and safe environmental limits for vital equipment.

(n) Primary and secondary reactor containment.

(o) Systems other than radioactive waste management systems not covered by items (a) through (o) above which contain or may contain radioactive materials and whose postulated failure would result in conservatively calculated potential offsite doses (using meteorology as prescribed by Regulatory Guides 1.3 and 1.4) which are more than 0.5 rem to the whole body or its equivalent to any part of the body.

(p) The Class IE electric systems, including the auxiliary systems for the onsite electric power supplies, that provide the emergency electric power needed for functioning of plant features included in items (a) through (p) above.

(q) Those portions of structures, systems, or components whose continued function is not required but whose failure could reduce the functioning of any plant feature included in items (a) through (q) above to an unacceptable safety level or could result in incapacitating injury to occupants of the control room should be designed and constructed so that the SSE would not cause such failures.

(r) Items and services associated with Radioactive Material Transport Packages as described in 10CFR71.

CONSUMABLES

The following specific consumables when utilized in safety-related systems shall be included in those portions of this QAP, as applicable.

1. Emergency generator diesel fuels
2. Hydraulic snubber fluids
3. Reagents
4. Resins
5. Boric Acid
6. Lubricants

APPENDIX B

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

QUALIFICATION AND EXPERIENCE REQUIREMENTS

This appendix consolidates specific qualification and experience requirements for several key positions within the licensee organization. Much of this material was relocated from the Unit 3 Final Safety Analysis Report.

MANAGER - NUCLEAR OVERSIGHT

The Manager - Nuclear Oversight shall satisfy the following requirements:

Graduate of a four-year accredited engineering or science college or university, plus fifteen (15) or more years of industrial experience including five years in positions of leadership, such as lead engineer, project engineer, Audit team leader, etc. At least two years of this experience should be associated with nuclear Quality Assurance Activities, and at least one year of this experience is in a Quality Assurance Organization. A masters degree in engineering or business management is considered equivalent to two years of experience.

Note: The education and experience requirements should not be treated as absolute when similar training or an outstanding record provides reasonable assurance that a person can perform the required tasks.

ANSI N18.1-1971 Requirements

As stated in Appendix C, education and experience requirements for Millstone Station personnel are established by ANSI N18.1 as endorsed by Regulatory Guide 1.8-1977, subject to the exceptions in Appendix E. The table below identifies ANSI N18.1 requirements applicable to specific positions at Millstone Power Station.

Table B-1

Position	Applicable ANSI N18.1-1971 Requirements
Site Vice President	Plant Manager (4.2.1)*
Supervisor - Nuclear Chemistry	Radiochemistry (4.4.3)
Supervisor - Health Physics	Radiation Protection (4.4.4) - See Note 1
Manager - Nuclear Operations Supervisor - Nuclear Shift Operations	Operations Manager (4.2.2) - See Note 2
Shift Managers, Unit Supervisors	Supervisors Requiring AEC Licenses (4.3.1) See Note 3
Control Operators	Operators Requiring AEC Licenses (4.5.1) See Note 3
Plant Equipment Operators	Operators (4.5.1)
Supervisor - Nuclear Maintenance (Electrical/I&C/GTS)	Instrumentation & Control (4.4.2)
Manager - Nuclear Maintenance Supervisor - Nuclear Maintenance	Maintenance Manager (4.2.3)
Mechanics, Electricians, Technicians (repairmen)	Repairmen (4.5.3)
Manager - Nuclear Site Engineering Manager - Nuclear Engineering Manager - Nuclear Design Engineering Manager - Nuclear Fuel Engineering Manager - Nuclear Site Services Manager - Nuclear Outage and Planning	Technical Manager (4.2.4)
Supervisor - Reactor Engineering	Reactor Engineering and Physics (4.4.1)

* Numbers in () refer to section numbers in ANSI N18.1-1971.

Notes:

1. For the position of Supervisor - Health Physics the qualifications considered as minimum acceptable substitutes for a bachelor's degree equivalent are: a high school diploma or its equivalent and four years of applied Managerial experience at a nuclear facility in the area of radiation protection.

2. If the Manager - Nuclear Operations does not hold an SRO license for Unit 3, then the Manager - Nuclear Operations shall have held an SRO license at a pressurized water reactor (PWR), and the Supervisor - Nuclear Shift Operations shall hold an SRO license for Unit 3 and meet the qualification requirements of Section 4.3.8, "Operations" of ANSI/ANS 3.1-1987, "American National Standard for Selection, Qualification and Testing of Personnel for Nuclear Power Plants" (in accordance with Section 4.2.2 reference to the Operations Middle Manager).

   If the Manager - Nuclear Operations does not hold an SRO license for Unit 2, then the Manager - Nuclear Operations shall have held an SRO license at a PWR, and an individual serving in the capacity of the Supervisor - Nuclear Shift Operations shall hold an SRO license for Unit 2 and meet the

qualification requirements of Section 4.3.8, "Operations" of ANSI/ANS 3.1-1987, "American National Standard for Selection, Qualification and Testing of Personnel for Nuclear Power Plants" (in accordance with Section 4.2.2 reference to the Operations Middle Manager).

3. As of November 1, 2001, applicants for reactor operator and senior reactor operator qualification shall meet or exceed the education and experience guidelines of Regulatory Guide 1.8, Revision 3, May 2000.

APPENDIX C

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

REGULATORY GUIDE AND ANSI/IEEE STANDARD COMMITMENTS

NOTE: This QAP is committed to utilize the guidance obtained from the following regulatory documents and their endorsed standards. Exceptions to these positions are listed in Appendix E of this Topical Report.

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

10 CFR 50, Section 50.54, Condition of Licenses.

10 CFR 50, Part 55 - Operator's Licenses and its Appendix A - Requalification Programs for Licensed Operators of Production and Utilization Facilities.

Regulatory Guide 1.8 - I - R - 5/77 - Personnel Selection and Training - Endorses ANSI N18.1 - 1971.

Regulatory Guide 1.28 - 2/79 - Quality Assurance Program Requirements (Design and Construction) Endorses ANSI N45.2-1977.

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

Regulatory Guide 1.33 - 2/78 - Quality Assurance Program Requirements (Operation) - Endorses ANSI N18.7-1976/ANS3.2.

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

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

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

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

Regulatory Guide 1.64 - Quality Assurance Requirements for the Design of Nuclear Power Plants, 6/76 - Endorses ANSI N45.2.11-1974.

Regulatory Guide 1.70 - "A Guide for the Organization and Content of Safety Analysis Reports" Revision 0, June 30, 1966 was utilized for Millstone Power Station Unit No. 2; however, certain revised sections of the Unit 2 Final Safety Analysis Report are written to the Revision 3 format. Revision 3, November 1978 is utilized for Millstone Power Station Unit No. 3. This Reg. Guide is not applicable to Unit 1.

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

Regulatory Guide 1.94 - Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plant - 4/76 - Endorses ANSI N45.2.5 - 1974 and Section 6.11 of ANSI N45.2.5-1978.

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

Regulatory Guide 1.123 - Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants - 7/77 - Endorses ANSI N45.2.13-1976.

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

Regulatory Guide 1.146 - Qualification of Quality Assurance Program Audit Personnel For Nuclear Power Plants - 8/80 Endorses ANSI N45.2.23-1978.

Regulatory Guide 1.152 - "Criteria for Digital Computers in Safety Systems of Nuclear Power Plants", January 1996 - Endorses IEEE ANS 7 - 4.3.2 - 1993.

APPENDIX D

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

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 documented activity performed in accordance with written procedures or checklists to verify by examination and evaluation of objective evidence that applicable elements of the quality assurance program have been developed, documented, and effectively implemented in accordance with specified 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 Quality Assurance Program. These items fall under nuclear indicators such as FPQA (Fire Protection Quality Assurance), RWQA (Radwaste Quality Assurance), ATWS (Anticipated Transient Without Scram) and SBOQA (Station Blackout 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 a licensee nuclear power plant and material, equipment, parts, consumables, and services applicable to the safety-related functions of these SSCs.

Category 1 Structures, Systems and Components - For Units 2 and 3, defined in each unit FSAR and functionally described in Appendix A. For Unit 1, 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.

Deficiency - Lacking some essential quality (e.g. defective, imperfect, not sufficient, inadequate in amount, quality and/or degree.)

Department - The use of the word "Department" throughout this QAP can refer to any portion of the licensee 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.

Dominion Energy - The company which owns Dominion Nuclear Connecticut, Inc.

Dominion Nuclear Connecticut, Inc. - The subsidiary of Dominion Energy responsible for the operation of the Millstone Power Station nuclear units. (also referred to as "licensee")

Engineering Service Organization - Organizations that provide services such as analysis, computer software, testing, and inspection.
Group - The use of the word "group" in Section 1.0 of this QAP refers to a portion of the licensee organization as applicable (i.e., Department, Unit, Branch).

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.

Licensee - Dominion Nuclear Connecticut , Inc., current License holder.

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.

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.

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 Procedures and Document Administration - The organization responsible for establishing the Nuclear Plant Records Program which is implemented at licensee records retention facilities.

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 Station nuclear power plants 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 QAP. (Synonymous with "Services" and "Quality Services" in this QAP.)

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 QAP 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 Assurance Program (QAP) - Millstone Power Station - Consists of this QAP Topical Report, Nuclear Oversight procedures and other Licensee Group/Division/Department/Branch/ Section/Unit quality procedures.

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 QAP is applicable.

Quality Procedures - Those Nuclear Oversight Department and other department procedures which implement the requirements of this QAP.

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 - A licensee employee assigned the responsibility to coordinate the engineering activities addressed in QAP. 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 – The act of monitoring or observing to verify whether an item or activity conforms to specified requirements.

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 QAP)

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

APPENDIX E

QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

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 onsite have a two-hour rating.

   The licensee's 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. Deleted

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 licensee has developed the following alternative definition to provide guidance during the interim period from the time a document is completed until it is transmitted to the licensee records retention facilities:

   "A record is considered a working document until it is transmitted to the licensee records retention facilities 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 licensee records retention facilities:

   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 licensee records retention facilities 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 Document Administration for up to three years.

   All Other Working Documents - All other working documents shall be transmitted to licensee records retention facilities 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 licensee has developed the following alternative 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.

   The licensee no longer has any nuclear plants under construction. As a result, most procurements are made for spare parts from suppliers who are not the original equipment manufacturer. In these cases, 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 licensee 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 the licensee procurement activities involve commercial suppliers which do not fully comply with the requirements of ANSI N45.2.2, the licensee's Supply Chain Management 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. ANSI N18.1-1971, paragraph 4.2.2, states in part "The Operations Manager shall hold a Senior Reactor Operator's license". The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendment 132 for the Millstone Power Station Unit No. 3 license which allows that:

   If the Operations Manager does not hold a Senior Reactor Operator license for Millstone Unit No. 3, then the Operations Manager shall have held a Senior Reactor Operator license at a pressurized water reactor, and the Assistant Operations Manager (Supervisor - Nuclear Shift Operations) shall hold a Senior Reactor Operator license for Millstone Unit No. 3 and meet the qualification requirements of Section 4.3.8, "Operations" of ANSI/ANS 3.1-1987, "American National Standard for Selection, Qualification and Testing of Personnel for Nuclear Power Plants" (in accordance with Section 4.2.2 reference to the Operations Middle Manager).

8. ANSI N18.1-1971, paragraph 4.2.2, states in part "The Operations Manager shall hold a Senior Reactor Operator's license". The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendments 178 and 190 for the Millstone Power Station Unit No. 2 license which allows that:

   If the Operations Manager does not hold a Senior Reactor Operator license for Millstone Unit No. 2, then the Operations Manager shall have held a Senior Reactor Operator license at a pressurized water reactor, and an individual serving in the capacity of the Assistant Operations Manager (Supervisor - Nuclear Shift Operations) shall hold a Senior Reactor Operator license for Millstone Unit No. 2 and meet the qualification requirements of Section 4.3.8, "Operations" of ANSI/ANS 3.1-1987, "American National Standard for Selection, Qualification and Testing of Personnel for Nuclear Power Plants" (in accordance with Section 4.2.2 reference to the Operations Middle Manager).

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."

   The licensee has developed an alternative which modifies these Audit frequencies to at least once per 24 months. This alternative has previously been accepted by the NRC via license amendments 79, 184, and 104 for MP1, MP2, and MP3, respectively.

10. Deleted.

11. ANSI N45.2.13-1976, paragraph 10.3.5., states in part, "in certain cases involving procurement of services only, such as third party inspection; engineering and consulting services, and installation, repair, overhaul or maintenance work; the Purchaser may accept the service by any or all of the following methods:

(a) Technical verification of the data produced
(b) Surveillance and/or audit of the activity
(c) Review of the objective evidence for conformance to the procurement document requirements such as certifications, stress reports, etc."

In order to maintain the independence requirement of the NRC's August 14, 1996 Order, the licensee will not perform an acceptance review of the work produced by the vendors contracted to conduct the Independent Corrective Action Verification Program. This work will be performed in accordance with the vendor's own approved, 10 CFR 50 Appendix B Quality Assurance Program. Not applicable to Unit 1.

12. Deleted.

13. Regulatory Guide 1.70 Revision 3, November 1978 Section 17.1.2.4 states in part: "The PSAR should include a listing of QA program procedures or instructions that will be used to implement the QA program for each major activity such as design, procurement, construction, etc. The procedure list should identify which criteria of Appendix B to 10 CFR 50 are implemented by each procedure". Not applicable to Unit 1.

    The licensee has developed an alternative to this requirement where procedure indices are maintained which identify the procedures that implement the Quality Assurance Program for Millstone Power Station and which, by title and originating organization, indicate the Appendix B to 10 CFR 50 criterion being implemented.

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."

    The licensee 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.

    The licensee implements administrative controls to perform biennial reviews of non-routine procedures such as Emergency Operating Procedures (EOP's), Abnormal Operating Procedures (AOP's), Off Normal Procedures (ONP's), Emergency 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.

    The licensee 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 licensee's 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.

15. Denied NRC approval. Number not reused.

16. Deleted. (Superceded by Exception #21.)

17. ANSI N18.1-1971, paragraph 4.3.1, states in part, "A Supervisor (requiring an AEC license) shall have a minimum of a high school diploma or equivalent, and four years of responsible power plant experience, of which a minimum of one year shall be nuclear power plant experience. A maximum of two years of the remaining three years of power plant experience may be fulfilled by academic or related technical training on a one-for-one basis." The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendment 258 for the Millstone Power Station No. 2 which allows that:

    Beginning November 1, 2001, applicants for senior reactor qualification shall meet or exceed the education and experience guidelines given in Revision 3 to Regulatory Guide 1.8 (May 2000).

18. ANSI N18.1-1971, paragraph 4.3.1, states in part, "A Supervisor (requiring an AEC license) shall have a minimum of a high school diploma or equivalent, and four years of responsible power plant experience, of which a minimum of one year shall be nuclear power plant experience. A maximum of two years of the remaining three years of power plant experience may be fulfilled by academic or related technical training on a one-for-one basis." The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendment 199 for the Millstone Power Station No. 3 which allows that:

    Beginning November 1, 2001, applicants for senior reactor qualification shall meet or exceed the education and experience guidelines given in Revision 3 to Regulatory Guide 1.8 (May 2000).

19. ANSI N18.1-1971, paragraph 4.5.1, states in part, "An operator (to be licensed by the AEC) shall have a minimum of a high school diploma or equivalent, and two years of power plant experience, of which a minimum of one year shall be nuclear power plant experience." The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendment 258 for the Millstone Power Station No. 2 which allows that:

    Beginning November 1, 2001, applicants for reactor qualification shall meet or exceed the education and experience guidelines given in Revision 3 to Regulatory Guide 1.8 (May 2000).

20. ANSI N18.1-1971, paragraph 4.5.1, states in part, "An operator (to be licensed by the AEC) shall have a minimum of a high school diploma or equivalent, and two years of power plant experience, of which a minimum of one year shall be nuclear power plant experience." The licensee has developed an alternative to this requirement which has been accepted by the NRC via amendment 199 for the Millstone Power Station No. 3 which allows that:

    Beginning November 1, 2001, applicants for reactor qualification shall meet or exceed the education and experience guidelines given in Revision 3 to Regulatory Guide 1.8 (May 2000).

21. ***ANSI N18.7-1976, paragraph 4.5, states in part, "Audits of selected aspects of operational phase activities shall be performed with a frequency commensurate with their safety significance and in such a manner as to assure that an audit of all safety-related functions is completed within a period of two years."***

    The licensee has established a 25% extension to the 24-month frequency for most internal audits. This 25% extension will not be applied to those audits which have frequencies specifically delineated by the Code of Federal regulations (i.e. Emergency Preparedness Program which satisfies the requirements of 10CFR50.54(t), or Physical Security Plan which satisfy the requirements of 10CFR50.54(p)(3); 73.56(g)(1) and (g)(2); and 73.55(g)(4), and the Fitness for Duty Program which satisfies 10CFR26.80). The frequencies of these audits are described in their respective plans andlor programs

APPENDIX F
QUALITY ASSURANCE PROGRAM (QAP)
TOPICAL REPORT - MILLSTONE POWER STATION

ADMINISTRATIVE CONTROLS[1]

NOTE:

1. "Technical Specification" numbers refer to the unit specific Technical Specifications as identified.

REVIEW AND AUDIT

Site Operations Review Committee (SORC)

Function

The SORC shall function to advise the Site Vice President - Millstone on all matters related to nuclear safety for Millstone Power Station. The Site Vice President - Millstone shall advise the SVP/CNO - Dominion Nuclear Connecticut, Inc. and Senior Vice President - Nuclear Operations on all matters related to nuclear safety requiring higher level of responsibility and authority.

Composition

The SORC shall be composed of a minimum of eleven members. Members shall collectively have experience and expertise in the following areas:

Plant Operations
Engineering
Reactor Engineering
Maintenance
Instrumentation and Controls
Radiation Protection
Chemistry
Work Planning
Quality Assurance

Each SORC member shall meet the following minimum qualifications:

1) Have an academic degree in an engineering or physical science field, and have a minimum of five years technical experience in their respective field of expertise,

or

2) Hold a management position, and have a minimum of five years technical experience in their respective field of expertise.

1 Relocation of Technical Specification Administrative Controls Related to Quality Assurance in Response to AL 95-06.

The members of SORC shall be appointed in writing by the Site Vice President - Millstone. The SORC Chairperson and two Vice Chairpersons shall be drawn from the members and shall be appointed in writing by the Site Vice President - Millstone.

Alternates

Alternate members shall be appointed in writing by the SORC Chairperson to serve on a temporary basis. Each alternate shall meet the minimum qualifications described above for SORC members, and shall have the same area of expertise as the member being replaced.

Meeting Frequency

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

Quorum

A quorum of the SORC shall consist of the Chairperson or Vice Chairperson and five members or designated alternates. However, no more than two alternates may vote at any one time.

For any SORC decision affecting site-wide issues, the Chairperson shall ensure appropriate representation.

Responsibilities

The SORC shall be responsible for:

a. Review of 1) all procedures required by Unit 2/3 Technical Specification 6.8 or Unit 1 Technical Specification 5.5 and changes thereto, 2) all programs required by Unit 2/3 Technical Specification 6.8 or Unit 1 Technical Specification 5.6 and changes thereto, 3) Site ISFSI operating procedures as required by CoC 1004, 4) any other proposed procedures, programs, or changes thereto as determined by the SVP/CNO - Dominion Nuclear Connecticut, Inc., Senior Vice President - Nuclear Operations, or Site Vice President - Millstone to affect site nuclear safety. Programs and procedures required by Unit 2/3 Technical Specification 6.8 or Unit 1 Technical 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 Technical Specifications.

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

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

e. Render determinations in writing or meeting minutes if any item considered under (a) through (d) above, as appropriate and as provided by 10CFR50.59, 10CFR72.48 or 10CFR50.92, requires a license amendment or requires a significant hazards consideration determination.

f. Performance of special reviews and investigations and reports as requested by the Chairperson of Management Safety Review Committee.

g. Review of the fire protection program and implementing procedures.

h. Investigations of all violations of Technical Specifications, including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence, to the Site Vice President - Millstone, SVP/CNO - Dominion Nuclear Connecticut, Inc., Senior Vice President - Nuclear Operations, and to the Chairperson of the Management Safety Review Committee;

i. Review of all Millstone Power Station REPORTABLE EVENTS;

j. Review of facility operations to detect potential safety hazards;

k. Review of Unit 3 Turbine Overspeed Protection Maintenance and Testing Program and revisions thereto.

Authority

The SORC shall:

a. Recommend to the Site Vice President - Millstone written approval or disapproval in meeting minutes of items considered under Responsibilities (a) through (k) above. The Site Vice President - Millstone will report to the Senior Vice President - Nuclear Operations and the SVP/CNO - Dominion Nuclear Connecticut, Inc., any issues that require higher level of authority.

b. Provide immediate written notification or meeting minutes to the Senior Vice President - Nuclear Operations, the SVP/CNO - Dominion Nuclear Connecticut, Inc. and the Chairperson of the Management Safety Review Committee of disagreement between the SORC and the Site Vice President - Millstone; however, the Senior Vice President - Nuclear Operations shall have responsibility for resolution of such disagreements pursuant to Unit 2/3 Technical Specification 6.1.1 and Unit 1 Technical Specification 5.1.1.

Records

The SORC shall maintain written minutes of each meeting and copies shall be provided to the Site Vice President - Millstone, the Senior Vice President - Nuclear Operations and Chairperson of the Management Safety Review Committee. Minutes regarding investigations of violations of Tech Specs and disagreements addressed by SORC shall also be provided to the SVP/CNO.

Management Safety Review Committee (MSRC)

Function

The minimum qualifications of MSRC members are as follows:

a. The Chairperson and MSRC 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 MSRC 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 MSRC serves to advise the Senior Vice President/Chief Nuclear Officer (SVP/CNO) on matters related to nuclear safety and notify the SVP/CNO within 24 hours of a safety significant disagreement between the MSRC and the organization or function being reviewed.

Composition

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

Alternates

All alternate members shall be appointed, in writing, by the MSRC Chairperson; however, no more than two alternates shall participate as members in MSRC activities at any one time.

Meeting Frequency

The MSRC shall meet at least once per calendar quarter.

Quorum

The quorum of the MSRC shall consist of a majority of MSRC members including the Chairperson or Vice Chairperson. No more than a minority of the quorum shall have line responsibility for operation of a Dominion Nuclear Connecticut, Inc. nuclear unit. No more than two alternates shall be appointed as members at any meeting in fulfillment of the quorum requirements.

Review Responsibilities

The MSRC shall be responsible for the review of:

a. The evaluations for changes to the facility and procedures, and tests or experiments completed under the provisions of 10 CFR 50.59 or 10CFR72.48, to verify that such actions did not require a license amendment as defined in 10 CFR 50.59 or 10CFR72.48;

b. Proposed changes to the facility or procedures that require a license amendment as defined in 10 CFR 50.59 or 10CFR72.48;

c. Proposed tests or experiments that require a license amendment as defined in 10 CFR 50.59 or 10CFR72.48;

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 or 10CFR72.75;

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 - Nuclear Operations and the Site Vice President - Millstone within 30 days following completion of the review.

Audit Program Responsibilities

The MSRC audit program shall be the responsibility of Nuclear Oversight. MSRC 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 Units 2/3 Technical Specification 6.8 and Unit 1 Technical 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 Site Vice President - Millstone, the Senior Vice President - Nuclear Operations or SVP/CNO - Dominion Nuclear Connecticut, Inc.

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 MSRC Section;

b. Deleted

c. Deleted

Station Qualified Reviewer Program

Function

The designated manager, designated officer, Site Vice President - Millstone may establish a Station Qualified Reviewer Program whereby required reviews of designated procedures or classes of procedures required by SORC, Responsibilities item (a) are performed by Station Qualified Reviewers and approved by designated managers. These reviews are in lieu of reviews by the SORC. However, procedures which require a 10 CFR 50.59 or 10CFR72.48 evaluation in accordance with the station 50.59 or 72.48 Screen and Evaluation procedure must be reviewed by the SORC.

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. Ensure cross-disciplinary review of procedures, programs, and changes thereto when organizations other than the preparing organization are affected by the procedure, program, or change. These are performed by the affected disciplines, or by other persons designated by cognizant manager or director as having specific expertise required to assess a particular procedure, program, or change. Cross-disciplinary reviewers may function as a committee.

c. Provide for written recommendation by the Qualified Reviewer(s) to the designated manager for approval or disapproval of procedures and programs considered under SORC Responsibilities item (a), and ensure that the procedure or program was screened by a qualified individual and found not to require a 10 CFR 50.59 evaluation or 10CFR72.48 evaluation.

Personnel recommended to be Station Qualified Reviewers shall be designated in writing by their designated manager or designee. The Manager, Nuclear Procedures and Document Administration, reviews and recommends for approval. The SORC Chairman or designee shall provide final approval. This qualification shall apply to all procedures and programs considered under SORC Responsibilities (a).

Temporary procedure changes shall be made in accordance with Unit 2/3 Technical Specification 6.8.3 and Unit 1 Technical Specification 5.5.5 with the exception that

changes to procedures for which reviews are assigned to Station Qualified Reviewers will be reviewed and approved as described in Responsibilities (a) through (c) above.

Records

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

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 Manager or Director.

SAFETY LIMIT VIOLATION - Units 2 and 3

The SVP/CNO - Dominion Nuclear Connecticut, Inc., Senior Vice President - Nuclear Operations, Site Vice President - Millstone, and the Chairperson of the MSRC shall be notified within 24 hours in the event a Safety Limit is violated.

The Safety Limit Violation Report shall be submitted to the Commission, the Chairperson of the MSRC, SVP/CNO - Dominion Nuclear Connecticut, Inc., the Senior Vice President - Nuclear Operations, and the Site Vice President - Millstone within 14 days of the violations.

RECORD RETENTION - Units 1 and 2

(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 Part 50.59 or 10CFR72.48.

k. Records of meetings of the MSRC and the SORC.

l. Records of Environmental Qualification (which are covered under the provisions of Technical Specification 6.13. for Unit 2)

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

RECORD RETENTION - Unit 3 Only

(1) In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

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

a. Records and logs of unit 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 Technical Specifications;

e. Records of changes made to the procedures required by Technical Specification 6.8.1;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

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

(3) The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit 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 radiation exposure for all individuals entering radiation control areas;

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

e. Records of transient or operational cycles for those unit components identified in Technical Specification Table 5.7-1.

f. Records of reactor tests and experiments;

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

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

i. Records of quality assurance activities required by the Quality Assurance Topical Report not listed in (2) a. through (2) h. above;

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR Parts 50.59 or 72.48.

k. Records of meetings of the MSRC and the SORC;

l. Records of the service lives of all hydraulic and mechanical snubbers required by Technical Specification 3.7.10 including the date at which the service life commences and associated installation and maintenance records;

m. Records of secondary water sampling and water quality; and

n. Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.

o. 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	Site Vice President Director - Nuclear Station Operations & Maintenance
5.1.2	Shift Manager	Unit 2 Shift Manager
Organization		
5.2.1b Offsite and onsite organizations	designated manager	Director - Nuclear Station Operations & Maintenance
5.2.1c Offsite and onsite organizations	designated officer	Site Vice President
5.2.2g	Shift Manager	Unit 2 Shift Manager
***Facility* Staff Qualifications**		
5.3.1.1	operations manager or assistant operations manager	Manager - Nuclear Operations Unit 2 Supervisor Nuclear Shift Operations
5.3.1.2	radiation protection manager	Individual that meets TS position qualifications to perform Radiation Protection Manager duties and responsibilities (as designated by Director - Nuclear Station Safety & Licensing.)
Procedures		
5.5.1h	designated manager designated officer designated senior officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President Senior Vice President - Nuclear Operations
5.5.3	designated manager designated officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President
5.5.4	designated manager designated officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President
5.5.5c	designated manager designated officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President
5.5.6; 5.5.7	Individual from the organization responsible for *the* REMP	Individual from Nuclear ***Safety*** Engineering or designee
Programs and Manuals		
5.6.1	designated officer	Site Vice President

T.S. SECTION	T.S. POSITION	STATION ORGANIZATION POSITION
High Radiation Area		
5.8.2a.1	*Shift Manager* *radiation protection manager*	*Unit 2 Shift Manager* *Individual that meets TS position qualifications to perform Radiation Protection Manager duties and responsibilities (as designated by Director – Nuclear Station Safety & Licensing*

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

MILLSTONE UNIT 2

T.S. SECTION	T.S. POSITION	STATION ORGANIZATION POSITION
Responsibility		
6.1.1	designated officer designated manager	Site Vice President Director - Nuclear Station Operations & Maintenance
Organization		
6.2.1b Offsite and onsite organizations	designated manager	Director - Nuclear Station Operations & Maintenance
6.2.1c Offsite and onsite organizations	designated officer	Site Vice President
Facility Staff Qualifications		
6.3.1a	operations manager assistant operations manager	Manager - Nuclear Operations Unit 2 Supervisor Nuclear Shift Operations
6.3.1c	radiation protection manager	Individual that meets the position qualifications to perform Radiation Protection Manager duties and responsibilities (as designated by Director - Nuclear Station Safety & Licensing.)
Procedures		
6.8.2a	designated manager designated officer designated senior officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President Senior Vice President - Nuclear Operations
6.8.2b	designated manager designated officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President
6.8.5	Individual from the organization responsible for ***the*** REMP	Individual from Nuclear ***Safety*** Engineering or designee
High Radiation Area		
6.12.2.a.1	radiation protection manager	Individual that meets TS position qualifications to perform Radiation Protection Manager duties and responsibilities (as designated by Director - Nuclear Station Safety & Licensing.)
Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM)		
6.15b	designated officer	Site Vice President

Notes:
Generic position titles are as approved by Amendment No. 235 to the Unit 2 Technical Specifications

MILLSTONE UNIT 3

T.S. SECTION	T.S. POSITION	STATION ORGANIZATION POSITION
Responsibility		
6.1.1	designated officer designated manager	Site Vice President Director - Nuclear Station Operations & Maintenance
Organization		
6.2.1b Offsite and onsite organizations	designated manager	Director - Nuclear Station Operations & Maintenance
6.2.1c Offsite and onsite organizations	designated officer	Site Vice President
Facility Staff Qualifications		
6.3.1a	operations manager assistant operations manager	Manager - Nuclear Operations Unit 3 Supervisor Nuclear Shift Operations
6.3.1b	radiation protection manager	Individual that meets TS position qualifications to perform Radiation Protection Manager duties and responsibilities (designated by Director - Nuclear Station Safety & Licensing.)
Procedures & *Programs*		
6.8.2a	designated manager designated officer designated senior officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President Senior Vice President - Nuclear Operations
6.8.2b	designated manager designated officer	Director - Nuclear Station Operations & Maintenance Director - Nuclear Station Safety & Licensing Site Vice President
6.8.5	Individual from the organization responsible for ***the*** REMP	Individual from Nuclear ***Safety*** Engineering or designee
High Radiation Area		
6.12.2a.1	radiation protection manager	Individual that meets the position qualifications to perform Radiation Protection Manager duties and responsibilities (as designated by Director - Nuclear Station Safety & Licensing.)
Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM)		
6.13b	***designated officer***	***Site Vice President***

Notes:
Generic position titles are as approved by Amendment No. 171 to the Unit 3 Technical Specifications.