**ATTACHMENT 5**

VIRGINIA ELECTRIC AND POWER COMPANY
DOMINION NUCLEAR CONNECTICUT, INC.
SURRY POWER STATION UNITS 1 AND 2 AND ISFSI
NORTH ANNA POWER STATION UNITS 1 AND 2 AND ISFSI
MILLSTONE POWER STATION UNITS 1, 2 AND 3 AND ISFSI
ASSOCIATED RADIOACTIVE MATERIAL PACKAGES
NUCLEAR FACILITY QUALITY ASSURANCE PROGRAM DESCRIPTION
TOPICAL REPORT DOM-QA-1, REVISION 0

AUGUST 24, 2004

CURRENT 10 CFR 50, APPENDIX B QUALITY ASSURANCE
PROGRAM TOPICAL REPORT FOR
NORTH ANNA AND SURRY POWER STATIONS
ASSOCIATED RADIOACTIVE MATERIAL PACKAGES
AND ISFSI

128 PAGES FOLLOW

# Chapter 17: Quality Assurance Program
## Table of Contents



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# Chapter 17
# QUALITY ASSURANCE PROGRAM

## 17.1 QUALITY ASSURANCE DURING DESIGN AND CONSTRUCTION

The descriptions of the Quality Assurance Program during the construction phase (Chapter 17.1) and the pre-operational phase (Chapter 17.2) have been deleted. These activities have been completed years ago, and the descriptions are no longer needed for the operational phase. Chapter 17.2 is replaced with the NRC-approved Operational Quality Assurance Program.

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# VIRGINIA ELECTRIC
# AND
# POWER COMPANY

# OPERATIONAL QUALITY ASSURANCE PROGRAM

# TOPICAL REPORT

# VEP-1-5A
# (UPDATED)

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Amendment Five
June, 1986
(Updated 03/98)

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**Section** **Title** **Page**



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## LIST OF FIGURES (APPENDIX A)



## LIST OF TABLES (APPENDIX B)



## NORTH ANNA POWER STATION NUCLEAR SAFETY REVIEW (APPENDIX C)



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## LIST OF AMENDMENTS

| Amendment No. | Amendment Date |
|---|---|
| Original | 07-01-75 |
| One | 12-30-75 |
| Two | 09-27-76 |
| Three | 03-01-77 |
| Four | 10-01-82 |
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| Five | 06-30-86 |
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| Five (Updated) | 06-21-89 |
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## ABSTRACT

This topical report describes Virginia Electric and Power Company's, hereafter referred to as the Company, quality assurance program for the operational phase of its nuclear power stations. The report is organized as, distributed, and used for Chapter 17, part 2 - Quality Assurance (Operations) - of the Company's Updated Final Safety Analysis Reports. The Company quality assurance program conforms to applicable regulatory requirements such as 10 CFR 50, Appendix B and to approved industry standards endorsed therein as clarified within this topical report. Included is a point-by-point comparison of the program with the 18 criteria of 10 CFR 50, Appendix B. This topical report is intended to be a comprehensive up-to-date description of the Company's Operational Quality Assurance Program for nuclear power generating stations.

The Operational Quality Assurance Program is defined as those managerial and administrative policies and controls used to assure the safe and reliable operation of the nuclear facilities. These include all those planned and systematic actions necessary to provide adequate confidence to management and regulatory agencies that structures, systems, and components will perform satisfactorily in service. The Operational Quality Assurance Program encompasses policies, directives, instructions, training, and procedures which ensure compliance with regulations, Codes, standards, licenses, and other Company commitments. As such, this topical report, in conjunction with the applicable operating license, provides the foundation for operating the nuclear facilities in a manner which ensures the safety of the public, employees, and plant equipment. The policies are further defined through the Nuclear Business Unit Standard (NBUS), the applicable Safety Analysis Report (SAR), Nuclear Design Control Manual (NDCM), and each facility's emergency plan, physical security plan, radiological protection plan, and fire protection plan. Administrative and implementing procedures govern the various aspects of day-to-day operation of the nuclear facilities.

The Company's Operational Quality Assurance Program Topical Report is referred to by several generic titles both within this document and within other administrative controls for each nuclear facility. These include Chapter 17.2 of the UFSAR, the [Company's] quality assurance program, the Operational Quality Assurance Program (upper and lower cased letters), the QA Topical Report, VEP 1-5A, Quality Assurance Program - Operational Phase, etc. These are used interchangeably to refer to this document which represents Management's philosophy and methodologies for complying with the 18 criteria of 10 CFR 50, Appendix B.

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# 17.2 QUALITY ASSURANCE DURING THE OPERATIONS PHASE

## 17.2.0 General

It is the policy of the Company to establish and maintain a formal quality assurance program for the operational phase of nuclear power generating stations. This program is described by written policies, standards, and procedures. The application of this program accomplishes two important objectives: (1) to provide orderly, uniform administrative and managerial procedures to assure safe, reliable, and economic operation of nuclear power stations and (2) to assure compliance with regulations promulgated by the U.S. Nuclear Regulatory Commission.

### 17.2.0.1 Topical Report

This topical report is written in the format of the Safety Analysis Report (SAR) Chapter 17, part 2, *Quality Assurance During the Operations Phase*, in accordance with the NRC's *Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants* (Nov. 1975) and subsequent NRC guidelines. The quality assurance program described herein is applicable to all Company nuclear power stations as referenced by Chapter 17 of the stations' UFSARs.

Subsequent changes to the Company's Operational Quality Assurance Program will be incorporated as applicable in this topical report. The topical report is intended to be a comprehensive description of the Company's Operational Quality Assurance Program for nuclear power stations.

### 17.2.0.2 Quality Assurance Standards and Guides

The Company Operational Quality Assurance Program conforms to Appendix B of 10 CFR 50 as amended and complies with the regulatory positions of the Regulatory Guides indicated in Table 17.2-0, as modified or clarified in that table.

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## Table 17.2-0
## CONFORMANCE OF THE COMPANY'S OPERATIONAL QUALITY ASSURANCE PROGRAM TO NRC REGULATORY GUIDES AND ANSI STANDARDS

The ANSI standards, and other documents (i.e., other standards, codes, regulations, or appendices) that are required to be included as a part of this quality assurance program are either identified in Table 17.2-0 or they are described herein. Although this table includes references to ANSI Standards and Regulatory Guides that are required to be a part of this quality assurance program, the table is not intended to be a complete list of all NRC Regulatory Guides (etc.) to which the Company is committed. The specific applicability or acceptability of these listed standards, codes, regulations, or appendices is either covered in this program or such documents are not considered as quality assurance program requirements; although they may be used as guidance. When sections of ANSI Standards and other documents are referenced within this program, it is understood that the Company will comply with the referenced sections as clarified in Table 17.2-0.

## GENERIC STATEMENTS WITH REGARDS TO TABLE 17.2-0 AND THE OPERATIONAL QUALITY ASSURANCE PROGRAM

For operations phase maintenance and modification activities which are comparable in nature and extent to similar activities conducted during the construction phase, the Company shall control these activities under this Operational Quality Assurance Program. Designated modifications may be controlled under a contractor's Quality Assurance Program which has been approved by the Company's Quality Assurance Program. When this Operational Quality Assurance Program or an approved contractor's Quality Assurance Program is used, the Company shall comply with the *Regulatory Position* established in the guides listed herein in that quality assurance programmatic/administrative requirements included therein (subject to the clarification in this table) shall apply to these maintenance and modification activities even though such requirements may not have been in effect originally. Maintenance or modifications which may affect the function of safety related structures, systems, or components shall be performed in a manner at least equivalent to that specified in original design bases and requirements, materials specifications, and inspection requirements. A suitable level of confidence in structures, systems, or components on which maintenance or modifications have been performed shall be attained by appropriate inspection and performance testing.

*Definitions* in the referenced standards in this table which are not included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74.

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## 17.2.1 Organization

### 17.2.1.1 General Description

#### A. Nuclear Organization

There are four groups within the Nuclear Organization which affect the safety of the Nuclear Stations and Independent Spent Fuel Storage Installations (ISFSIs). These groups are Nuclear Operations, Nuclear Engineering, Nuclear Support Services, and Nuclear Oversight (References 1, 2, & 3). The Nuclear Organization is shown in Appendix A (Figures 17.2.1-1, 17.2.1-2, & 17.2.1-3).

Certain responsibilities and organization positions are described in the facility operating licenses using titles that differ in name only from those described in this topical report. Each position has distinct functional and organizational reporting requirements that are in force despite where title differences may appear as noted below. The Nuclear Organization will maintain dual titles until such time as consistency is achieved through issuance of license amendments.

| Technical Specification Titles | Corresponding QA Topical Report Titles |
|---|---|
| Manager - Station Operations and Maintenance | Director Nuclear Station Operations and Maintenance |
| Manager - Station Safety and Licensing | Director Nuclear Station Safety and Licensing |
| Superintendent - Operations/Operations Manager | Manager Nuclear Operations |
| Superintendent - Maintenance | Manager Nuclear Maintenance |
| Superintendent Radiological Protection/Radiological Protection Manager | Manager Radiological Protection |
| Superintendent - Engineering | Manager Nuclear Site Engineering |
| Manager - Nuclear Training | Director Nuclear Training |
| Supervisor Shift Operations | Supervisor Nuclear Shift Operations |
| Shift Supervisor | Shift Manager |
| Assistant Shift Supervisor | Unit Supervisor |
| Control Room Operator - Nuclear | Control Room Operator |
| Senior Vice President - Nuclear | Senior Vice President - Nuclear Operations and Chief Nuclear Officer |
| Plant Manager | Site Vice President |
| Vice President - Nuclear Operations | Senior Vice President Nuclear Operations |

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B. **Nuclear Operations**

Nuclear Operations is responsible for operation and maintenance of the Nuclear Stations and ISFSIs.

C. **Nuclear Engineering**

Nuclear Engineering is responsible for support of the Nuclear Organization by providing engineering services, information technology, and records management. The engineering departments are the design authorities for the Nuclear Organization and provide design and operational engineering support to the nuclear stations and ISFSIs.

D. **Nuclear Support Services**

Nuclear Support Services is responsible for support of the Nuclear Organization by providing licensing and operations support, personnel training, purchasing, procurement engineering, vendor surveillance, material management, nuclear security, and emergency preparedness.

E. **Nuclear Oversight**

Nuclear Oversight is responsible for independently planning and performing activities to verify the development and effective implementation of nuclear management's quality assurance programs for engineering, procurement, construction, modification, maintenance, and operation activities associated with the Nuclear Stations and ISFSIs.

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17.2.1.2 **Nuclear Management**

A. **Senior Vice President - Nuclear Operations and Chief Nuclear Officer**

The Senior Vice President - Nuclear Operations and Chief Nuclear Officer has corporate responsibility for and directs the planning and development of the Nuclear Organization staff, organization resources, and nuclear power generation.

1. **Management Safety Review Committee (MSRC)**

The MSRC is the body which performs the offsite safety review function. It reports to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer and provides an independent review in the areas of station operations, maintenance, reactivity management, engineering, chemistry & radiochemistry, radiological safety, quality assurance practices, and emergency preparedness. The Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station further define the function, composition, alternates, consultants, meeting frequency, quorum, reviews, audits, authority and records of this committee.

One of the functions of the MSRC is to oversee the Safety and Regulatory Review Program to ensure that it is effective in identifying changes that require a license amendment pursuant to 10 CFR 50.59(c). The MSRC accomplishes this function by reviewing a sample of approved Regulatory Reviews to ensure that changes that require a license amendment are being properly identified and by conducting periodic assessments of the Safety and Regulatory Review Program (Reference 4).

The review of Regulatory Reviews uses a graded and safety significant approach to select samples for review. Regulatory Reviews are screened upon receipt and the following criteria are used to select a sample for MSRC review:

- All Regulatory Evaluations will be reviewed by the MSRC.
- Regulatory Reviews for certain types of activities will be reviewed by the MSRC. These include, for example, reviews for justifications for continued operation and special tests.
- Regulatory Reviews for changes that have a high potential for impacting nuclear safety or regulatory requirements will be reviewed by the MSRC.
- A representative sample of the remaining Regulatory Reviews will be reviewed. These Regulatory Reviews will be selected to ensure a representative sample of each type of activity has been reviewed in an amount consistent with program objectives. Provisions are in place to adjust the sample sizes based on MSRC and assessment findings.

B. **Senior Vice President Nuclear Operations**

The Senior Vice President Nuclear Operations is the Corporate individual responsible to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer for the operation of the Nuclear Stations and ISFSIs. He has overall responsibility for implementing the quality assurance program for the operational phase of the Nuclear Stations and ISFSIs.

1. **Site Vice President**

Responsible to the Senior Vice President Nuclear Operations for the overall safe and efficient operation of the station and ISFSI, and for the implementation of quality assurance requirements in the areas specified by the operational quality assurance program. The Site Vice President has supervisory control over all Virginia Electric and Power Company personnel within the station organization and administrative control over all other Company and non-Company individuals within the nuclear site's boundary. The Site Vice President is the local representative of Company management and is empowered to implement all Company policy with regard to operations of the facility, support of Company

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public relations policy, and employee relations policies. The Site Vice President is also responsible for coordinating station functions with offsite (Company and non-Company) agencies and services, and ensuring station personnel are adequately trained in accordance with the Emergency Plan. The Site Vice President fulfills the position of Plant Manager identified in the ISFSI Technical Specifications.

In the absence of the Site Vice President, these duties will be assumed by the Director Nuclear Station O&M (Operations and Maintenance) unless otherwise designated in writing.

a. **Station Nuclear Safety and Operating Committee**

Serves in an advisory capacity to the Site Vice President. The Station Nuclear Safety and Operating Committee is separate from operational quality assurance activities in that its authority and responsibilities are not established by the Operational Quality Assurance Program. However, since the prime responsibility of this committee is to provide a continuing review of the operational and safety aspects of the station, it does perform a quality assurance function. Appendix C of this topical report defines the function, composition, alternates, meeting frequency, quorum, responsibilities, authority, and records for this committee for the North Anna Power Station. Surry Power Station Technical Specifications contain the requirements for this committee at the Surry Power Station

b. **Director Nuclear Station O&M (Operations and Maintenance)**

Responsible to the Site Vice President for directing and coordinating all aspects of day-to-day station and ISFSI operations, maintenance, and site services. The Director Nuclear Station O&M is the Vice Chairman of the Station Nuclear Safety and Operating Committee (SNSOC) and is responsible for planning and coordination of unit outages. In the absence of the Director Nuclear Station O&M, the Site Vice President assumes the duties of the Director Nuclear Station O&M. In the absence of both the Site Vice President and the Director Nuclear Station O&M, these duties will be assumed by the Manager Nuclear Operations unless otherwise designated in writing.

b.1 **Manager Nuclear Operations**

The Manager Nuclear Operations reports directly to the Director Nuclear Station O&M and is responsible for directing and coordinating station and ISFSI operations and fuel handling activities in accordance with approved plans, programs, licenses, Technical Specifications, and good

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operating practices. He is responsible for identifying deviations from the Technical Specifications and Facility Operating License (FOL) and for reporting any unusual occurrences in connection with station operations to the Director Nuclear Station O&M or S&L.

The Manager Nuclear Operations is also responsible for: (1) development and implementation of uniform operating policies and procedures, (2) implementation of on-the-job training for Operations personnel, (3) ensuring that each shift is adequately staffed and sufficient back-up personnel are available, (4) ensuring that all required operating data is properly recorded and retained as appropriate, and (5) being a participating member of the SNSOC.

The Supervisor Nuclear Shift Operations, Supervisor Nuclear Operations Support and the Nuclear Operations Maintenance Advisor report to the Manager Nuclear Operations.

b.1.1 **Supervisor Nuclear Shift Operations**

The Supervisor Nuclear Shift Operations reports to the Manager Nuclear Operations and provides direct supervision to the Shift Managers, operational input to the SNSOC, and identifies any deviations from the Technical Specifications or any unusual events.

The Supervisor Nuclear Shift Operations must possess a valid Senior Reactor Operator (SRO) license, and may only be relieved by an individual who possesses a valid SRO license. This position fulfills the function of the “operations manager” as described in ANS 3.1 (12/79 Draft).

b.2 **Manager Nuclear Maintenance**

The Manager Nuclear Maintenance reports directly to the Director Nuclear Station O&M and is responsible for directing and coordinating the maintenance activities at the station and ISFSI. He is responsible for: (1) ensuring that station and ISFSI facilities and equipment are maintained in accordance with regulatory requirements and station procedures, (2) the development and implementation of uniform policies and procedures for installation, maintenance, and repair of station and ISFSI equipment and systems, (3) ensuring maintenance tasks will be performed in a timely and efficient manner, (4) participating as a member of the SNSOC. The manager is also responsible for the maintenance of plant equipment history.

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The Supervisors Nuclear Maintenance (Electrical and Mechanical), Supervisor Instrumentation & Control, as well as the Maintenance Coordinator report to the Manager Nuclear Maintenance.

b.3 **Manager Nuclear Outage & Planning**

The Manager Nuclear Outage & Planning reports directly to the Director Nuclear Station O&M. He is responsible for the overall planning and scheduling of maintenance and maintenance-related work activities such that safe and reliable plant operation is optimized. The Manager Nuclear Outage & Planning is also responsible for detailed maintenance planning to support scheduled outages being completed as needed. He is also responsible for the execution of outages and monitoring of station performance.

b.4 **Manager Nuclear Site Services**

The Manager Site Services reports directly to the Director Nuclear Station O&M and is responsible for directing all aspects of assigned projects including coordination of activities with station management, engineering, and construction.

c. **Director Nuclear Station S&L (Safety and Licensing)**

Responsible to the Site Vice President for directing and coordinating radiological protection and nuclear safety issues at the station and ISFSI. The Director Nuclear Station S&L is the Chairman of the Station Nuclear Safety and Operating Committee (SNSOC) and conducts periodic meetings to ensure compliance with station technical specifications, manage licensing activities within the station, interface with Corporate management on operating experience and licensing issues, manage station procedures, and administer the station environmental compliance program. The Director Nuclear Station S&L is independent of cost and scheduling concerns associated with operations, maintenance, and modification activities. He is responsible for maintaining information on industry operating experience, being cognizant of licensing and regulatory issues, administering the Commitment Tracking System (CTS), administering the nuclear safety assessment and Shift Technical Advisor (STA) programs, coordinating the station quality inspection program, and coordinating activities related to non-radiological environmental protection. Appendix C of this topical report defines the function, composition, responsibilities, and authority for the Station Nuclear Safety organization for the North Anna Power Station.

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c.1 **Manager Radiological Protection**

The Manager Radiological Protection reports directly to the Director Nuclear Station S&L and is responsible for administering the Radiological Protection Program at the station and ISFSI. The Manager Radiological Protection shall have direct access to the Site Vice President on matters relating to radiological protection. The Manager Radiological Protection shall have sufficient organizational freedom to ensure independence from operating pressures. Responsibilities include: (1) monitor the radiological effluent programs and personnel radiation protection programs, (2) maintain records of radiological exposures for all persons working or visiting within the station's restricted area, (3) ensure regular surveys of the station, (4) maintain records of background radiation levels, and (5) check all radioactive material releases and shipments from station and maintain appropriate records. The Radiological Protection group is responsible for determining the radiation levels of all work areas, and posting, as needed, areas where sources of radiation exist. Additionally, the Manager Radiological Protection is also responsible for managing the primary and secondary plant chemistry programs.

The Manager Radiological Protection directs the activities of his group to minimize the exposure of station personnel to excessive doses of radiation and to prevent the spread of radioactive contamination. All activities in these areas are coordinated with other station groups to ensure full awareness of problems through implementation of the station ALARA program.

The Supervisor Health Physics Operations, Supervisor Health Physics Technical Services, and Supervisor Nuclear Chemistry, report to the Manager Radiological Protection.

The Manager Radiological Protection also participates as a member of the SNSOC.

d. **Station Supervisory Personnel**

Responsible directly to the Site Vice President through their respective managers or directors, for implementing the operational quality assurance program requirements applicable to their specific areas of responsibility.

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e. **Station Staff**

It is the responsibility of each member of the station staff to adhere to the provisions contained in the operational quality assurance program when performing their work tasks to assure quality workmanship. Personnel with unescorted access status shall receive training (Nuclear Employee Training) in the use of and adherence to the operational quality assurance program.

C. **Director Nuclear Oversight**

The Director Nuclear Oversight is responsible to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer for assuring the compliance with the Operational Quality Assurance Program for nuclear operations and associated support activities. The Director Nuclear Oversight may make recommendations to the Nuclear Organization's management. If he disagrees with any actions taken by the Nuclear Organization and is unable to obtain resolution, the Director Nuclear Oversight shall bring the matter to the attention of the Senior Vice President - Nuclear Operations and Chief Nuclear Officer who will determine the final disposition.

1. **Manager Nuclear Oversight (one at each site)**

The Manager Nuclear Oversight is responsible to the Director Nuclear Oversight for assuring compliance with the operational quality assurance program for the nuclear power stations and ISFSIs through internal audits. The Manager Nuclear Oversight may make recommendations to the station management. If he disagrees with any actions taken by the station management and is unable to obtain resolution, the Manager Nuclear Oversight shall notify the Director Nuclear Oversight and the Senior Vice President Nuclear Operations.

2. **Supervisor Nuclear Quality (Vendor Programs)**

The Supervisor Nuclear Quality (Vendor Programs) is responsible to the Director Nuclear Oversight for assuring compliance with the established vendor Quality Assurance Programs. This is accomplished by scheduling and conducting triennial external audits, annual vendor Quality Assurance Program evaluations, reviewing audits conducted by external organizations (e.g., other utilities and NUPIC), and maintenance of the Safety-Related Vendors List and the Commercial Grade Vendors List.

3. **Nuclear Specialist (Audit Coordinator)**

The Nuclear Specialist (Audit Coordinator) is responsible to the Director Nuclear Oversight for assuring compliance with the Operational Quality Assurance Program, administration of the internal audit program, and interfacing with station Nuclear Oversight personnel.

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D. **Vice President Nuclear Engineering**

Responsible to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer and has corporate responsibility for supporting long-term nuclear operations through engineering, projects, and nuclear analysis and fuel activities. As such, he has the responsibility for the system level implementation of the requirements established by the Operational Quality Assurance Program for the Nuclear Stations and ISFSIs.

1. **Director Information Technology Business Account (Generation)**

The Director Information Technology Business Account (Generation) is responsible to the Vice President Nuclear Engineering for information technology direction and support of the Nuclear Business Unit. Responsibilities include: network infrastructure maintenance and upgrade, network and application security, network operations, automation strategy, application development and support, automation training, and oversight, maintenance and repair of the Emergency Response Facility Computer System.

2. **Director Nuclear Analysis and Fuel**

Responsible to the Vice President Nuclear Engineering for the development and implementation of the operational quality assurance program in the following areas:

- Nuclear fuel procurement and related services
- Nuclear fuel management and core design
- Core and system thermal hydraulic analysis
- Fuel performance analysis
- Reload safety evaluation
- Engineering support for spent fuel disposition
- Post accident radiation dose calculation
- Reactor performance evaluation
- Special nuclear material accountability
- Inspection and surveillance of nuclear fuel and related items at the stations and vendors
- Engineering evaluation of fuel vendors
- Site reactor engineering

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3. **Director Nuclear Engineering**

Responsible to the Vice President Nuclear Engineering for implementing the operational quality assurance program in the following areas:

- Design Engineering
- Configuration Management
- Materials and Inservice Inspection Engineering
- Site Engineering

Responsibilities of these groups include implementing engineering standards for nuclear design control, engineering evaluation of generic industry issues, management of engineering resources for specific tasks, and engineering programs.

a. **Manager Design Engineering**

Responsible to the Director Nuclear Engineering for orchestrating the resources of the corporate discipline engineering groups, and Site Design Engineering to support the competing needs of projects, general site support activities and program support. He shall also ensure that appropriate discipline engineering resources are dedicated to the maintenance of the design basis infrastructure and support of assigned programs.

b. **Manager Nuclear Site Engineering**

Responsible to the Director Nuclear Engineering for managing engineering resources in Systems Engineering, Component Engineering, and Test and Inspection Engineering. Responsibilities of the System Engineers includes an overall system management to ensure optimum design basis performance while continually striving for improved system reliability. Responsibilities for Component Engineers include management of component programs to ensure optimum component performance and reliability. He also provides a day-to-day interface with Station management.

c. **Manager Nuclear Engineering**

Responsible to the Director Nuclear Engineering for managing activities related to the adequacy and availability of design and licensing basis information including:

- Development and maintenance of design basis documentation

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- Review and maintenance of the Updated Final Safety Analysis Report and ISFSI Final Safety Analysis Report
- Development of Improved Technical Specifications
- Engineering Programs
- Materials and Inservice Inspection Engineering
- Records Management Programs

4. **Director Nuclear Projects**

Director Nuclear Projects is responsible to the Vice President Nuclear Engineering for the implementation of large projects on behalf of the Nuclear Business Unit. Implementation includes development of the detailed scope, estimate, schedule, cost, design, procurement, construction, testing and closeout of each project. Nuclear Projects focuses on defined projects separate from the ongoing engineering requirements under the direction of the Director Nuclear Engineering and the Director Nuclear Analysis and Fuel.

E. **Vice President Nuclear Support Services**

Responsible to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer and has the responsibility for providing support services to the Nuclear Organization.

1. **Director Nuclear Licensing & Operations Support**

Director Nuclear Licensing & Operations Support is responsible to the Vice President Nuclear Support Services for providing regulatory compliance support, providing licensing support through NRC communications, maintaining and acquiring licenses required for continued and extended operations and providing operations, chemistry and health physics support.

2. **Director Nuclear Protection Services & Emergency Preparedness**

Director Nuclear Protection Services & Emergency Preparedness is responsible to the Vice President Nuclear Support Services for providing nuclear station security, plant and ISFSI access programs, station safety and loss prevention, and fitness for duty programs. In addition, he is responsible for the overall management of Nuclear Emergency Preparedness activities. This includes managing the overall scheduling and coordination of emergency plan testing, training and exercises with

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federal, state, and local agencies, and working with corporate and nuclear station personnel to ensure emergency plans meet all the requirements and commitments. The Managers Nuclear Protection Services at the stations report to the Director Nuclear Protection Services & Emergency Preparedness.

3. **Director Nuclear Training**

Director Nuclear Training is responsible to the Vice President Nuclear Support Services for the training of personnel who operate or support the Nuclear Stations and ISFSIs. Training responsibilities include: determining the need for training based on information provided by the Nuclear Group, developing performance-based training programs, implementing training programs to support employee and station needs, and evaluating training programs. The Manager Nuclear Training at each station reports to the Director Nuclear Training.

4. **Director Supply Chain Management (Generation)**

The Director Supply Chain Management (Generation) is responsible to the Vice President Nuclear Support Services for the material management, purchasing, procurement engineering, and vendor surveillance functions.

#### 17.2.1.3 Organization

Each Nuclear Station's Technical Specifications contain the company's organizational requirements for facility operation. Additionally, duties and responsibilities of key positions within the nuclear organization are further defined in the appropriate administrative controls.

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### 17.2.2 Quality Assurance Program

#### 17.2.2.1 General Description

The objective of the Company Quality Assurance Program for operating nuclear power stations is to comply with the criteria as expressed in 10 CFR 50, Appendix B, as amended, and with the quality assurance program requirements for nuclear power plants as referenced in the Regulatory Guides and ANSI Standards as listed in Table 17.2-0. This program, its policies and procedures are described herein: the Topical Report (VEP-1-5A) (entitled Operational Quality Assurance Program); the Nuclear Business Unit Standard (NBUS); and the corporate and station procedures. This program applies to those quality-related activities that involve the functions of safety-related structures, systems, and components associated with the operation, maintenance and modification of nuclear power stations and those non-safety-related components described in the UFSAR. Designated modifications may be performed under a contractor's Quality Assurance Program approved by the Company's Quality Assurance Program. The contractor's Quality Assurance Program when used for modifications will comply with the criteria expressed in 10 CFR 50, Appendix B, as amended, and with the Regulatory Guides and ANSI Standards as listed in Table 17.2-0.

The goal of this program is to assure the safe, reliable and efficient operation of the nuclear power station in accordance with sound engineering principles.

The program provides written policies, standards, procedures, and instructions covering engineering, design, procurement, modifications, periodic surveillance, testing, and maintenance after the systems have been installed, checked and turned over to the Company for operation. Nuclear Business Unit (NBU) policies establish commitments to the Operational Quality Assurance Program. Detailed procedures and instructions are issued by the station in accordance with and to meet the requirements of their Technical Specifications for administrative, normal operation, periodic testing, abnormal and emergency conditions. Audit and inspection programs has been implemented to assure that these procedures are being correctly applied.

Nuclear Oversight personnel, both station and corporate, report through a line of management completely separate from operational and production management and influences, and fulfill the following three-part role:

1. Audit to ensure that the overall operation of the nuclear power station is carried out in accordance with Technical Specifications, applicable codes and standards, NRC guides and regulations, company policies and commitments.
2. Serve as a management tool for station and system management personnel, illuminating problem areas, detecting trends, and providing recommendations regarding solution of problem areas when applicable.
3. Provide all levels of management with an independent source of information regarding the quality aspect of station operations, maintenance and modification activities.

Differences of opinion between Nuclear Oversight personnel and other departments are resolved by the cognizant Manager or Director and the Manager Nuclear Oversight or are forwarded through normal administrative chains of both individuals for resolution at the executive level. Final decision-making authority rests with the Senior Vice President - Nuclear Operations and Chief Nuclear Officer.

Nuclear Oversight conducts audits and inspections in accordance with the Operational Quality Assurance Program and performs other duties as directed by the Director Nuclear Oversight. Nuclear Oversight representatives have access to all areas of the station at any time deemed necessary for audits and activities related to quality. They have access to station records required for in-depth auditing of station operations, including confidential personnel records (but only to the extent necessary to verify personnel qualifications or other information related to quality).

Station personnel assigned to conduct assessments and inspections in accordance with the Operational Quality Assurance Program have access to all areas of the station necessary to accomplish those activities.

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### 17.2.2.2 **Quality Assurance Program**

The Company Operational Quality Assurance Program is displayed in a point-by-point comparison to Appendix B, 10 CFR 50 in Table 17.2-1, which follows.

### 17.2.2.3 **Identification of Structures, Systems, and Components**

Safety-related structures, systems, and components are identified in the UFSAR. The portions of these structures, systems, and components that are within the scope of the Operational Quality Assurance Program are further identified in the respective Q-List for North Anna and Surry Power Stations.

### 17.2.2.4 **Periodic Review of the Operational Quality Assurance Program**

Audits of activities required by the Operational Quality Assurance Program will be conducted at least once per 24 months. These audits are performed under the cognizance of the Management Safety Review Committee.

### 17.2.2.5 **Qualification of Nuclear Oversight Personnel**

The Director Nuclear Oversight shall have a four-year accredited engineering or science degree or equivalent with a minimum of ten years experience related to electric power generating facilities. At least five years of overall experience shall have been in a supervisory capacity, two years of which should have involved quality assurance related matters.

The Manager Nuclear Oversight shall have a four-year accredited engineering or science degree or equivalent with a minimum of eight years experience related to electric power generation facilities, two years of which involve experience in nuclear power stations. At least four years of overall experience shall have been in a supervisory capacity, two years of which should have involved quality assurance related matters.

The Supervisor Nuclear Quality (Vendor Programs) shall have a four-year accredited engineering or science degree, or equivalent with a minimum of two years overall experience or equivalent training in power plant operations is a prerequisite with at least one year of this experience involved in nuclear power station quality assurance program implementation.

The Nuclear Specialist (Audit Coordinator) shall have a four-year accredited engineering or science degree, or equivalent with a minimum of two years overall experience or equivalent training in power plant operations is a prerequisite with at least one year of this experience involved in nuclear power station quality assurance program implementation.

Personnel in the key positions listed will meet or exceed the above requirements or, as an alternative, the applicable requirements of paragraph 4.4.5 of ANSI/ANS 3.1 (Draft 12/79) as clarified in Table 17.2-0.

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17.2.2.6 **Qualification of Other Support Personnel**

The Quality Inspection Coordinator responsible for certifying maintenance and modification inspection personnel shall have a four-year accredited engineering or science degree, or equivalent with a minimum of two years overall experience or equivalent training in power plant operations. At least one year of this experience shall be involved in nuclear power station quality assurance program implementation.

The Manager Vendor Quality shall have a four-year accredited engineering or science degree, or equivalent with a minimum of two years overall experience or equivalent training in power plant operations. At least one year of this experience shall be involved in nuclear power station quality assurance program implementation.

Replacement personnel in the key positions listed will meet or exceed the applicable requirements of ANSI/ANS 3.1 (Draft 12/79) as clarified in Table 17.2-0.

17.2.2.7 **Certification of Nuclear Oversight Personnel**

The certification of Nuclear Oversight personnel is accomplished in accordance with the Quality Assurance Certification Program. This program provides for the certification and recertification of auditors and lead auditors.

The program outlines the qualification and certification requirements for personnel and requires the individual to be certified prior to performing specified audit functions. Nuclear Oversight management has the responsibility to certify audit personnel.

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17.2.2.8 **Certification of Other Support Personnel**

The certification of maintenance and modification inspection personnel [i.e., Quality Maintenance Team (QMT) and station Quality Control inspectors)], Material Verification personnel, Vendor Surveillance personnel, Fuel Accountability and Inspection personnel, and Inservice Testing [Visual Test (VT)] personnel is accomplished in accordance with the approved certification programs.

These programs outline the qualification and certification requirements of personnel and require the individual to be certified prior to performing specified functions. Nuclear Training has the responsibility to train maintenance and modification inspection personnel. The Quality Inspection Coordinator has the responsibility to qualify and certify maintenance and modification inspection personnel.

## 17.2.3 Design Control

Nuclear Standards describe the design control program. Measures are established to assure that applicable regulatory requirements and the nuclear power station design bases are correctly translated into the Company specifications, drawings, procedures, and instructions applicable to design changes and/or modifications for the operating nuclear power station.

All design changes and/or modifications to safety-related structures, equipment, systems and components described in the UFSAR are reviewed, approved, and acted upon by the Station Nuclear Safety and Operating Committee in accordance with their responsibilities and functions as referenced in the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. The responsibility for the development, identification of requirements, monitoring, and implementation of an effective design control program is delegated to the Vice President Nuclear Engineering with input as appropriate from the Site Vice President and operations personnel.

The Nuclear Design Control Program (NDCP), delineates procedures that assure design changes, including field changes, are subject to design control measures commensurate with those applied to the original design and the applicable specified design requirements. These procedures assure that design basis, regulatory requirements, codes and standards are correctly translated into specifications, drawings, procedures, or instructions for those structures, systems and components classified as safety-related in the UFSAR and Q-List. The NDCP provides for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. When a testing program is solely used to test the adequacy of a design, the test will be conducted under adverse design conditions. The provisions of this section assure that the verifying or checking process is performed by individuals other than those who performed the original design. These individuals are identified and their authority and responsibility is described. The NDCP also identifies the design documents that are required to be reviewed and the personnel responsible for their review and revisions, to assure that design characteristics can be controlled, inspected and tested, and that inspection and test criteria are identified. Design change documents and revisions thereto are distributed to responsible supervisors to determine whether revisions to controlled design and operating documents are necessary. Design documents and reviews, records and changes thereto are collected, stored and maintained in a systematic and controlled manner.

The NDCP establishes measures for the selection and review for suitability of application of materials, parts, equipment and processes that are essential to the safety-related functions of the systems, structures and components. These measures include the use of valid and applicable industry standards and specifications, materials and prototype hardware testing programs, and design reviews. In the event of a design modification to a system which is safety related, engineering studies are initiated to evaluate parts, equipment, processes, and material suitability for repair of such equipment or components; previously approved items are used without further review. Previously approved materials, parts or components used for a different application are reviewed for suitability prior to approval for their new application.

Quality measures are assured through all levels of the design control program by the design control organization, station and Corporate support organizations, and the Station Nuclear Safety and Operating Committee. Any errors or deficiencies noted in the design process are documented on the design change forms and subsequently corrected.

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Procedures for design controls, analysis, and reviews have as their basis the applicable portions of documents referenced in the Nuclear Design Control Manual, and include ANSI N45.2.11-1974 as modified in Table 17.2-0.

An Engineering Standard is used to establish the interface between the company and contractors for design activities. The standard requires that the licensee's program requirements be followed in the preparation, review and approval of design documents such as design changes, specifications and drawings. Design Changes prepared by contractors will be implemented under the licensee's Design Change Program.

Suitable design controls are applied to such disciplines as reactor physics; seismic stress, thermal, hydraulic, radiation and accident analysis, compatibility of materials; and accessibility for inservice inspection, maintenance and repair. Designs are reviewed to assure that (1) design characteristics can be controlled, inspected, and tested, and (2) inspection and test criteria are identified.

Changes to non-safety-related structures, systems, and components will be controlled in accordance with applicable procedures and to meet the requirements, where applicable, of 10 CFR 50.59.

### 17.2.4 Procurement Document Control

Administrative procedures describe the program for completing procurement documents including review, approval, document control, and change control. In addition, references to procedures that govern the actions of Nuclear Oversight and Vendor Surveillance are made which include provisions for access to the suppliers' facilities and records, for source inspection or audit, and qualification of vendors prior to the initiation of quality related actions when the need for such inspection and/or audit has been determined. This program also provides for records to be prepared, maintained, made available for review, or delivered to the Company prior to use or installation of the hardware, such as drawings, specifications, procedures, procurement documents, inspection and test records, personnel and procedure qualifications, material, chemical and physical tests results, and the identification of quality assurance requirements applicable to the items or services purchased, including sub-tier procurement requirements when required.

Administrative procedures are established to ensure that procurement documents reference all actions required by a supplier in accordance with the applicable codes, specifications, and drawings.

Procurement documents incorporate the design basis technical and quality requirements including the applicable regulatory requirements, component and material identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special instructions for special procedures such as welding, heating treating, non-destructive testing and cleaning as applicable.

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Procurement documents for spare or replacement parts of safety-related structures, systems and components are subject to technical and quality controls at least equivalent to those used on the original equipment.

Procurement documents are prepared, reviewed, and approved as delineated in administrative controls. Copies of procurement documents, or equivalent documents such as Receiving Reports or Requisitioner's Purchase Orders, are retained and are available for review.

### 17.2.5 Instructions, Procedures, and Drawings

As required by the individual unit's Technical Specifications, detailed written procedures are established, approved, implemented, and maintained.

Other activities affecting quality of structures, systems, and components within the scope of 10 CFR 50 Appendix B are prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances. These activities are accomplished in accordance with these instructions, procedures, or drawings. Applicable instructions, procedures, or drawings include for reference appropriate qualitative and/or quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Administrative procedures describe the requirements for developing, reviewing, approving, and controlling procedures used for testing as well as corrective maintenance, operating, design change implementation, administrative, and other activities performed at the power station. These requirements include references, prerequisites, precautions, limitations, manufacturer's specifications, check-off lists, and acceptance criteria (as appropriate). When applicable the acceptance limits and requirements contained in the design and procurement documents constitute a portion of the acceptance criteria referenced and contained in written testing procedures.

Changes to procedures require an Activity Screening to be performed before a change can be implemented. The Activity Screening includes criteria the preparer must consider to determine if further Regulatory Review is required for a proposed change. Procedure changes that require a Regulatory Evaluation are reviewed by the Station Nuclear Safety and Operating Committee (SNSOC) which serves as the onsite review group.

Procedure changes that do not require a Regulatory Evaluation as determined by screening may not be required to be reviewed by SNSOC, but still require independent review and approval by a Senior Reactor Operator and cognizant management prior to implementation. The above requirements are applicable to both intent and non-intent procedure changes. At its discretion, SNSOC may review procedure changes that do not require a Regulatory Evaluation in lieu of a Senior Reactor Operator.

New procedures and procedure revisions are also reviewed using an Activity Screening to determine if a Regulatory Evaluation is required. If the procedure is new or if a revision requires a

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Regulatory Evaluation, the procedure is reviewed by SNSOC. Revisions that do not require a Regulatory Evaluation are reviewed by cognizant management prior to implementation. Due to the numerous programmatic reviews that are entailed in the preparation of new and revised procedures changes, a Senior Reactor Operator review is not mandatory. At its discretion, SNSOC may review any procedure revisions that do not require a Regulatory Evaluation (Reference SPS TS 6.1 and Appendix C to this Topical Report).

### 17.2.6 Document Control

Measures are established and documented within the operating nuclear power stations and at Innsbrook Technical Center describing the control of documents, such as procedures, instructions, and drawings, to provide for their review, approval, and issue, and changes thereto, prior to release and to assure they are adequate and the quality requirements are stated. Provisions call for, among other things, (1) the review and approval of all new station procedures and design changes prior to release, the review and approval of all changes/revisions to station procedures and all proposed changes or modifications to plant systems or equipment that affect nuclear safety by the Station Nuclear Safety and Operating Committee, (2) policy and procedures for issuance of and changes to station drawings and approval of changes, and (3) the maintenance and distribution of these procedures. Normally changes to documents are reviewed and approved by the same organizations that performed the original review and approval; however, this responsibility may be delegated to other qualified responsible organizations. Approved changes are incorporated into procedures and drawings and other appropriate documents associated with the change. Procedures and drawings and changes thereto are processed, distributed and controlled. The station maintains a record of all holders of procedures and drawings and an index of all procedures and drawings, listing the current revision date. Instructions require that a copy of the appropriate procedure be available at the activity location prior to the commencement of that activity. These measures are addressed in the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station as well as in Administrative Procedures for each station.

Administrative procedures list certain documents that require strict administrative control for distribution, revision, and routing. These documents are categorized as “Controlled Documents.” Examples of controlled documents are: Station Procedures, Station Drawings, and the Precautions, Limitations, and Setpoint Document. Also set forth are the distribution and controlling procedures for design and procurement documents. Maintenance and modification inspection activities ensure that current procedures are used to accomplish work.

### 17.2.7 Control of Purchased Material, Equipment, and Services

An evaluation of suppliers is performed prior to contract award, except in emergency situations where an item or service is needed to preclude development or deterioration of an unsafe condition at the plant, by one or more of the following: (1) A review of the supplier’s capability to comply with the elements of 10 CFR 50, Appendix B that are applicable to the type

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of material, equipment, or service being procured, (2) A review or previous records and performances of suppliers who have provided similar articles of the type being procured, (3) A survey of the supplier's facilities and quality assurance program to determine his capability to supply a product or service which meets the design, manufacturing, and quality requirements, or (4) A review of qualification information supplied by another utility or outside organization. Surveillance of suppliers during fabrication, inspection, testing, and shipment of materials, equipment, and components is planned and performed in accordance with written procedures to assure conformance to the purchase order requirements as applicable. These procedures provide for:

a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and those responsible for implementing these instructions. Surveillance shall be performed on those items where verification of procurement requirements cannot be determined on receipt.

b. Audits and/or inspections which assure that the supplier complies with all quality requirements.

Administrative procedures describe the requirements for controlling purchased material, equipment, and services including commercial grade items for use on safety-related structures, systems, equipment, and components. The requirements applied to spare and replacement parts are at least equivalent to those applied to the original parts.

Inspections and surveillance of suppliers of nuclear safety-related items (except nuclear fuel) are performed under the direction of the Vice President Nuclear Support Services. The results of these actions are documented and filed. The periodic inspections assure that applicable material and equipment received at the station meet the requirements of the specifications, purchase orders, code, drawings, or other purchasing documents. This assurance includes the review of documentation received, physical inspection, cleanliness, packaging, marking or functional testing, as required. Purchased items are normally under the control of the Supply Chain Management (Generation) organization. This organization is authorized to contact system organizations and NSSS, A/E contractors and subcontractors through the auspices of system representatives for assistance as required. Verification of these activities is accomplished under the direction of the Director Nuclear Oversight.

Periodic evaluations of procurement history of the suppliers are performed by Nuclear Oversight to verify continued supplier capability.

Documentation concerning the quality of material, components, and equipment received is reviewed by the Vice President Nuclear Support Services representative for conformance with the Purchase Requisition and Purchase Order.

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The procurement of nuclear fuel and its inspection and surveillances are controlled in accordance with procedures that have been developed by the Nuclear Analysis and Fuel Organization to address the requisite quality attributes of this function. Verification of this activity is performed under the supervision of the Director Nuclear Oversight.

### 17.2.8 Identification and Control of Materials, Parts, and Components

Installed components at the nuclear power station are adequately identified and substantiated with documented records by the Architect-Engineer and the NSSS Vendor during the construction phase of the station. These identifications and records are maintained in the station files.

Replacement materials, parts, and components including partially fabricated subassemblies are adequately and properly identified to allow control and traceability to pertinent quality assurance records such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports. The identification system is consistent, as practical, with that used during the construction of the station, with similar identification used during design change activities. The location and method of identification do not affect the function or quality of the item being identified. Verification of correct identification of safety-related materials, parts, and components is required and documented prior to the release for fabrication, assembling, shipping, or installation.

Maintenance and modification inspection activities ensure, on a random basis, that materials, parts, and components utilized at the nuclear station are appropriately identified and controlled.

### 17.2.9 Control of Special Processes

The control of special processes is maintained and implemented through the use of procedures, technique sheets, travelers and inspection verification reports, and personnel qualified in accordance with the applicable codes, specifications, and standards for the specific work. In instances where the Company assigns such work to contractors, the contractor must submit their procedures and personnel qualifications to the Company for approval prior to the start of work.

Special processes include, for example, those involving welding, heat treating, non-destructive testing, cadwelding, removal of undesirable substances during shop and site cleaning, degreasing and flushing, and verification of wall thickness of valves and other cast components important to nuclear safety.

The Company conducts inspections of work involving special processes to assure that procedures and personnel are properly qualified and their workmanship is in compliance with applicable specifications, codes, and standards.

Records of procedures, equipment, and personnel qualification are maintained and kept current in accordance with the provisions of Section 17.2.17 herein.

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### 17.2.10 Inspection

Inspection procedures for those activities affecting quality have been established. These procedures govern the inspection and documentation of activities relating to repairs, modifications, and changes made to safety-related systems, structures, and components. Written maintenance procedures are provided which include inspection hold points.

Examinations, measurements, or tests of materials or components associated with safety-related equipment and systems are performed for each work operation, where necessary, to assure quality. If inspection is impossible or inappropriate, indirect control by monitoring methods, equipment, and personnel is provided. Both methods are provided when control is inadequate without both.

The station maintenance procedures are reviewed under the cognizance of the Director Nuclear Station S&L or designee to determine the need for an independent inspection and the degree and method if such an inspection is required. Modification procedures are reviewed by the design authority to determine the need for an independent inspection consistent with administrative procedures and engineering specification requirements. Examinations, measurements, or tests that require witnessing are identified as “inspection hold” points in procedures. The inspection performed at a hold point is specific in nature; quality characteristics and acceptance/rejection criteria are included or qualitative criteria such as operability checks, compliance with procedural steps, or cleanliness instructions are specified. The inspection is documented by signature or initials on the written procedure form.

Maintenance and modification inspection personnel perform physical inspections at random intervals to ensure quality requirements are met. These checks are performed as the conditions of the maintenance warrant. These personnel and other inspectors are qualified in accordance with codes and standards as applicable to the function they are performing.

The inspection program requires that inspectors be assigned as appropriate for the activity being inspected. An inspector may be a member of the organization performing the activity. However, they must be qualified and shall not be the person performing the activity or the supervisor directly responsible for the activity. Maintenance and modification inspection personnel are under the administrative direction of the Quality Inspection Coordinator when performing Quality Control inspections. Personnel so assigned shall become familiar with the procedure being used and other pertinent documents such as technical manuals and drawings prior to performing the inspection.

Personnel responsible solely for performing non-destructive examination are trained and qualified in accordance with a program that meets the requirements that are specified by the applicable ASME Code or structural codes governing the activity. In addition, personnel who conduct inservice or preservice examinations meet the additional and/or alternative qualification requirements specified by IWA-2300 for the applicable examination method and qualification level. Maintenance and modification inspection personnel, Material Verification personnel, Fuel

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Accountability and Inspection personnel, and Vendor Surveillance personnel meet the qualification requirements of ANSI N45.2.6-1978, as clarified in Table 17.2-0 under NRC Regulatory Guide 1.58. The inspectors' qualifications are periodically reviewed for recertification.

Generally, all physical inspections are under the control of the on-site organization. However, the Site Vice President is authorized to request assistance as required from Corporate support organizations.

The inspection of nuclear fuel and related items is controlled in accordance with procedures that have been developed by Nuclear Analysis and Fuel to address the requisite quality attributes of this function.

Additionally, inspection activities pertaining to Design Control (Section 17.2.3); Procurement Document Control (Section 17.2.4); Test Control (Section 17.2.11); Nonconforming Materials, Parts, or Components (Section 17.2.15); and Corrective Action (Section 17.2.16) shall be controlled in accordance with provisions established for this function in the referenced sections contained herein.

**17.2.11 Test Control**

The test program described in the Technical Specifications assures that safety-related structures, systems, and components will perform satisfactorily when required. Written "Periodic Test" procedures for this program are reviewed and approved as specified in the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. These test procedures include or reference:

1. The requirements and acceptance limits contained in applicable design and procurement documents.
2. Test prerequisites such as the availability of adequate and appropriate equipment and calibrated instrumentation; trained, qualified, and licensed or certified personnel; the completeness of the item to be tested; suitable and controlled environmental conditions; provisions for data collection and storage.
3. Instructions for performing the test.
4. Inspection points as appropriate.
5. Acceptance and rejection criteria.
6. Methods of documenting or recording test data and results.

The Periodic Test Program provides for testing of instrumentation and electrical equipment in the categories of (1) instruments installed as listed in the Technical Specifications, (2) installed instrumentation used to verify Technical Specification parameters, and (3) installed safety-related instruments and electrical equipment that provide an active function during operation, shutdown,

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or abnormal conditions (i.e., vice being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary). This instrumentation shall be in a calibration program. This program provides, by the use of equipment history data, status, records, and performance schedules, for the date that calibration is due and indicates the status of calibration. The identity of person(s) performing calibration is provided on the calibration documents.

Testing of modifications is done in accordance with procedures developed within the Design Change Program described in Section 17.2.3 of this report.

Testing upon completion of maintenance is done in accordance with Maintenance Procedures developed as described in Section 17.2.5 of this report.

### 17.2.12 Control of Measuring and Test Equipment

A program has been established and documented in administrative procedures that describes the calibration technique and frequency, maintenance, and control of all "Measuring and Test Equipment" (portable instruments, tools, gauges, fixtures, reference and transfer standards, and non-destructive test equipment) which are used in the measurement, inspection, maintenance, and monitoring of safety-related components, systems, and structures. Measuring and test equipment does not include: measuring equipment used for preliminary checks or utility troubleshooting where accuracy is not required. There is also no intention to imply a need for special calibration and control measures of rulers, tape measures, levels, and other basic tools if normal commercial practices provide adequate accuracy. Controls for measuring and test equipment include the transportation, storage, and protection of the equipment; the handling of associated documents giving the status of all items under the calibration system such as maintenance history, calibration test data, and individual log sheets assigned to each device; and the permanent marking of each device by a unique number.

The maintenance, calibration technique, and frequency of calibration of measuring and test equipment utilized in activities affecting quality at the power station are normally performed as specified in the manufacturer's instruction manual or in approved written procedures. In some cases the calibration interval may be assigned or changed based on accumulated experience by trained technicians. The recall system may include provisions for the temporary extension of the calibration due date under certain conditions specified in approved procedures.

If standards are not available or there is some special reason that procedures cannot be followed, the modified procedures and/or interval are documented, including justification. In other cases, rather than require calibration at specified intervals, procedures may specify the device be calibrated prior to use, as in the case of torque wrenches or micrometers. Where permitted by commercially available state of the art equipment, reference standards are no more than 1/4 the error allowed in the measuring and test equipment calibrated by that standard. Measuring and test equipment used on safety-related systems or equipment are calibrated utilizing reference standards whose calibration has a known valid relationship to nationally recognized standards, such as the National Institute of Standards and Technology (NIST), or

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accepted values of natural physical constants. If no national standard exists, the basis for calibration is documented. Whether the device is calibrated at the power station or at an NIST traceable outside laboratory, one or more stickers are affixed on a conspicuous surface identifying, but not limited to, date of calibration and next calibration due date.

When measuring and test equipment utilized in activities affecting quality are found to be out of calibration an evaluation will be performed and documented concerning the validity of previous tests and the acceptability of devices previously tested. All previous tests and measurements performed during the current or proceeding calibration cycle shall be redone if the evaluation so indicates.

Implementation of the measuring and test equipment programs is assured through Nuclear Oversight audits and through inspections by the appropriate line organizations during performance of work.

### 17.2.13 Handling, Storage, and Shipping

Measures have been established in administrative procedures to provide adequate methods by qualified personnel for the classification, packaging, cleaning, preservation, shipping, storage, and handling of material and equipment received at the station.

These measures, prepared in accordance with design and specification requirements, define responsibility, levels of essentiality, degree of receipt inspection, tagging, categories of inspection and their definition, and storage levels for categorized items.

The procedures also control cleaning, handling, storage, packaging, shipping, and preservation of materials, components, and systems to preclude damage, loss, or deterioration by environmental conditions such as temperature or humidity. Implementation of these measures is verified through inspections by Materials Verification and Vendor Surveillance inspectors.

### 17.2.14 Inspection, Test, and Operating Status

Measures for the identification and documentation of the inspection and test status for items to prevent inadvertent bypassing of specified inspections and tests are established in administrative procedures and in station operating procedures. These measures define the three general categories of inspection and test status for items: Accept, Reject, or Hold. They provide for status identification through the use of stickers, tags, record cards, test records, check-off lists, or logs. The operating status of items and/or equipment is identified through records, checklists, or operational tagging systems that are maintained to indicate the status and authority to operate the item and/or equipment. Operating status is additionally controlled through the normal station operating procedures. The application and removal of the various status tags, stickers, and other indicators is controlled by Station Procedures.

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### 17.2.15 Non-conforming Materials, Parts, and Components

A documented system for controlling non-conformances observed during receipt inspection, storage, fabrication and erection, installation, initial and/or acceptance testing, or initial operation is established and provides for the preparation, issuing, and distribution of Deviation Reports and Discrepant Shipment Reports in accordance with prescribed procedures. These procedures apply to new or reworked materials, parts, or components which possess manufacturer/supplier caused non-conformances.

The identification, documentation, segregation, review, disposition, and notification to affected organizations of non-conforming material, parts, or components are described or referenced in Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station, as well as in Administrative procedures, and/or station operating procedures. Non-conformance of purchased services are controlled under Section 17.2.7 Control of Purchased Material, Equipment, and Services; Section 17.2.10 Inspection; and administrative procedures.

Specifically, instructions require that the individual discovering a non-conformance identifies, describes, and documents the non-conformance on a Deviation Report or a Discrepant Shipment Report in accordance with administrative procedures.

When a non-conforming item is identified, it is placed in the hold area established in the storeroom or other segregated location, if practical, and identified with a hold tag to prevent its inadvertent use. If material is dispositioned as “reject” the hold tag shall remain attached to the material/component until loaded for departure from site and shall only be removed in accordance with approved procedures by authorized personnel at that time.

Hold items may be released on a risk basis following the documented approval of such risk release by the Site Vice President on a Release on a Risk Basis Form. Each risk release is handled on a case basis and depends on the nature of the hold status. The basis and conditions of the release are described on the form, including the criteria for clearing the original hold status. Rejected material is not risk released.

A Deviation Report or a Discrepant Shipment Report for a non-conforming material, part, or component dispositioned “accept as is” requires an engineering analysis and approval. The results of this review and approval are documented and become a part of station records.

Should the disposition of a non-conformance require the rework or repair of materials, parts, components, systems, or structures, such rework or repair is reinspected or retested by a method which is at least equal to the original inspection or test method. The inspection requirements and the inspection, rework, or repair procedures are documented and become a part of station records.

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The disposition and approval of non-conformances are the responsibility of the on-site organization. However, the Site Vice President has the authority to request assistance as appropriate from Corporate support organizations or from Nuclear Oversight.

The Station Deviation Reports trends are periodically reviewed for conditions adverse to quality by station management.

In service failures of materials, parts, and components are dispositioned by the use of Deviation Reports and/or Work Orders as described in Section 17.2.16 of this report.

Implementation and verification of the procedures for the control of non-conformances are assured through audits and inspections.

Non-conformances found at a vendor's facility during surveillances are controlled by procedures administered by Nuclear Engineering.

The non-conformances observed during the inspection of nuclear fuel and related items and the disposition of those non-conformances is controlled in accordance with procedures that have been developed by Nuclear Analysis and Fuel to address the requisite quality attributes of this function.

**17.2.16 Corrective Action**

Corrective action measures are established as an integral part of the processing and resolving of non-conformances and failures in service. Through these measures, assurance is confirmed that significant adverse quality conditions are identified, documented, their cause determined, and the corrective actions have been taken that preclude repetition of the adverse quality conditions. Verification of the proper implementation of corrective action measures and close-out of corrective action documentation is assured through the monitoring effort of the station staff and the audits conducted by Nuclear Oversight. Adverse conditions significant to quality, the cause of the conditions, and the initiation of corrective action are reported to appropriate levels of both offsite and onsite management by use of Deviation Reports and audit findings. If further corrective action is required the appropriate management program for performing, tracking and closing the issue will be used.

Nuclear Engineering maintains a program to evaluate complex design concerns that may lead to adverse quality conditions at the nuclear stations. The Potential Problem Reporting (PPR) system allows for detailed, multidiscipline reviews of complex design concerns that may yield station deviation reports. Many design concerns cannot be determined to be adverse to quality until a detailed design review is performed. The PPR process controls this activity as part of the Nuclear Design Control Program.

The procedures for processing a Deviation Report require that each adverse condition significant to quality be categorized as either requiring a Licensee Event Report, Special Report or NRC Notification or as a non-reportable deviation. Non-reportable deviation refers to deviations

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not reportable to the Nuclear Regulatory Commission. The reporting requirements differ for each of the categories of deviation but require the appropriate levels of management be notified in each case.

Procedures require that corrective maintenance of nuclear safety-related material, parts, or components be documented on a Work Order. Maintenance and modification inspection personnel are notified prior to the commencement of safety-related maintenance. Maintenance and modification inspection personnel may then initiate a surveillance program as necessary. Examples of areas subject to surveillance are (1) the use of approved maintenance procedures, (2) the existence of Radiation Work Permits and proper tagout, if applicable, (3) the existence of required plant conditions, and (4) documentation of Technical Specification requirements. If the maintenance and modification inspection personnel elect to inspect the work, the surveillance does not have to be performed prior to commencement of work. Also, Nuclear Oversight audits completed Work Orders to assure maintenance performed was properly documented, maintenance procedures were properly signed off and check lists were completed if applicable, Technical Specification limits were met if applicable, materials used were documented, and Work Orders were being adequately reviewed by appropriate supervisory personnel.

Rework or repair of nuclear safety-related materials, parts, components, systems, and structures shall be accomplished in accordance with approved written procedures. The procedures for rework or repair of safety-related equipment are approved by the Station Nuclear Safety and Operating Committee to ensure provisions for an adequate inspection of the completed rework or repair. The cognizant supervisor reviews the completed procedures to insure the acceptance criteria have been satisfied and for the completeness of the post-maintenance check-out.

The Quality Inspection Coordinator determines the scope of the required inspection effort on the basis of the extent of modifications or repair to safety-related equipment, systems, or components. For some repairs and modification activities, pre-job briefings held by station personnel in accordance with applicable administrative procedures may be attended by maintenance and modification inspection personnel at the discretion of the Quality Inspection Coordinator. For *major evolutions*, such as refueling, steam generator modifications, etc., inspection activities will be planned and coordinated as directed by the Quality Inspection Coordinator.

### 17.2.16.1 **Authority to Stop Work**

Nuclear Oversight and the Quality Inspection Coordinator have the authority, and the responsibility, to stop work in progress which is not being done in accordance with approved procedures or where safety or equipment integrity may be jeopardized. This extends to off-site work performed by vendors furnishing safety-related materials and services to the Company.

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17.2.16.2 **Imposition of "Stop Work"**

A. **Nuclear Oversight and the Quality Inspection Coordinator -** The Nuclear Oversight representative or maintenance or modification inspector advises the cognizant supervisor or supervisory personnel to stop work in progress whenever he determines that it is not being conducted in accordance with applicable procedures, instructions, guides, or standards or may jeopardize the safe operation of the station. Nuclear Oversight representatives inform the Manager Nuclear Oversight of the stop work order. The maintenance or modification inspector informs the Quality Inspection Coordinator and the Manager Nuclear Oversight of the decision to stop work. The Manager Nuclear Oversight or the Quality Inspection Coordinator then notifies the Site Vice President of the decision to stop work because of adverse quality conditions. He shall also notify the Director Nuclear Oversight.

B. **Site Vice President -** The Site Vice President evaluates the determination to stop work.

1. If he concurs with the decision to stop work, he initiates the necessary corrective action. Only after the discrepancy has been corrected and the corrective action approved by the initiating organization does work resume.

2. In the event the Site Vice President does not concur with the decision to stop work, he may order work to resume by notifying the Manager Nuclear Oversight (who shall notify the Director Nuclear Oversight) and the appropriate station supervisory personnel in his organization of his decision. He shall also refer the issue to the Senior Vice President Nuclear Operations for review and approval.

C. **Senior Vice President Nuclear Operations -** The Senior Vice President Nuclear Operations is responsible for approving or disapproving the Site Vice President's decision in those cases where the Site Vice President does not concur with the stop work and orders work to resume.

D. **Director Nuclear Oversight -** The Director Nuclear Oversight may refer any concerns he may have concerning the handling of "stop work" to the Senior Vice President Nuclear Operations. He may direct imposition of "stop work" whenever he deems such action to be appropriate.

Imposition of offsite "stop work" performed by vendors shall be controlled by appropriate administrative procedures.

**17.2.17 Quality Assurance Records**

The requirements and responsibilities for quality assurance records transmittal, retention, and maintenance subsequent to completion of work at the power station have been established and are documented in administrative procedures.

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Quality Assurance records relating to the operating status of the station and documentary evidence of the quality of items and activities affecting quality include plant history; operating logs; principal maintenance and modification activities; Licensee Event Reports; results of reviews, inspections, inservice inspections, tests, audits, and material analyses; monitoring of work performance, qualification of personnel, procedures, and equipment; and other documentation such as drawings, specifications, procurement documents, calibration procedures and reports, deviation reports, and corrective action requests. These records are maintained in accordance with the NRC regulations, commitments to ANSI N45.2.9-1974 (refer to Table 17.2-0, section for 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.

Identification and retrievability of Quality Assurance records is facilitated through proper indices and an established basic filing system. Record storage facilities are constructed, located, and secured to prevent the destruction of records by fire, flooding, theft, and deterioration through environmental conditions such as temperature and humidity.

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### 17.2.18 Audits

The system of audits devised to verify compliance with quality-related aspects of the power station is described in the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. Internal audits of selected aspects of operational phase activities are performed with a frequency commensurate with safety significance and in a manner which assures that biennial (2 years) audits of safety-related activities are completed. The audits are regularly scheduled on a formal preplanned audit schedule. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities. Additional audits may be performed as deemed necessary by management. The scope of the audit is determined by the quality status and safety importance of the activities being performed. These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with preplanned and approved audit plans or checklists.

Nuclear Oversight is delegated the responsibility for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of the station's programs and procedures, that they are meaningful, and comply with the overall Quality Assurance Program. External audits determine the adequacy of vendor and contractor 10 CFR 50, Appendix B QA Programs. An audit includes an objective evaluation of quality-related practices, procedures, and instructions; the effectiveness of implementation; and the conformance with policy and directives. An audit also includes the evaluation of work area, activities, processes, and items and the review of documents and records. Provisions are established requiring that audits be performed in those areas where the requirements of Appendix B to 10 CFR 50 are being implemented. These areas include as a minimum, but are not limited to, those activities associated with operation, maintenance, modification, and repair controls; the preparation, review, approval, and control of design changes, procurement documents, instructions, procedures, and drawings; receiving and plant inspections; indoctrination and training programs; the implementation of the operating and test procedures; and the remaining criteria in Appendix B to 10 CFR 50.

The results of each audit are reported in writing to the distribution delineated in accordance with Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

Management responds to all audits and initiates corrective action where indicated. Where corrective action measures are indicated, documented follow-up of applicable areas through inspections, review, re-audits, or other appropriate means is conducted to verify implementation of assigned corrective action.

If the Director Nuclear Oversight determines the response to an internal audit finding is unacceptable or if a finding response is not received in the time allotted or if corrective action for a finding is not accomplished as indicated on the response, the matter is brought to the attention of the Site Vice President or appropriate Corporate Director for resolution. If the Director Nuclear

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Oversight does not agree with the resolution proposed, he notifies appropriate levels of management in accordance with established escalation procedures. The escalation of external audit issues identified by Nuclear Oversight is controlled by administrative procedures.

The responsibility for analyzing audit reports for trends and effectiveness lies with the Director Nuclear Oversight. As trends are discovered or if the effectiveness of the program is in question, the analysis of the Director Nuclear Oversight is forwarded to the management level consistent with the seriousness of the problem.

## 17.2 REFERENCES

1. North Anna Technical Specification, Administrative Controls, Sections 5.2.1 and 5.2.2.
2. Surry Technical Specification, Administrative Controls, Section 6.1.A.1.
3. Generic Letter 88-06, Removal of Organization Charts From Technical Specification Administrative Controls Requirements, dated March 22, 1988.
4. Surry Technical Specification, Administrative Controls, Section 6.1.C.2.g.1.
5. Surry Technical Specification, Administrative Controls, Section 6.4.C.

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# APPENDIX A

# FIGURES

## NUCLEAR ORGANIZATION

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Figure 17.2.1-1
OFFSITE NUCLEAR ORGANIZATION

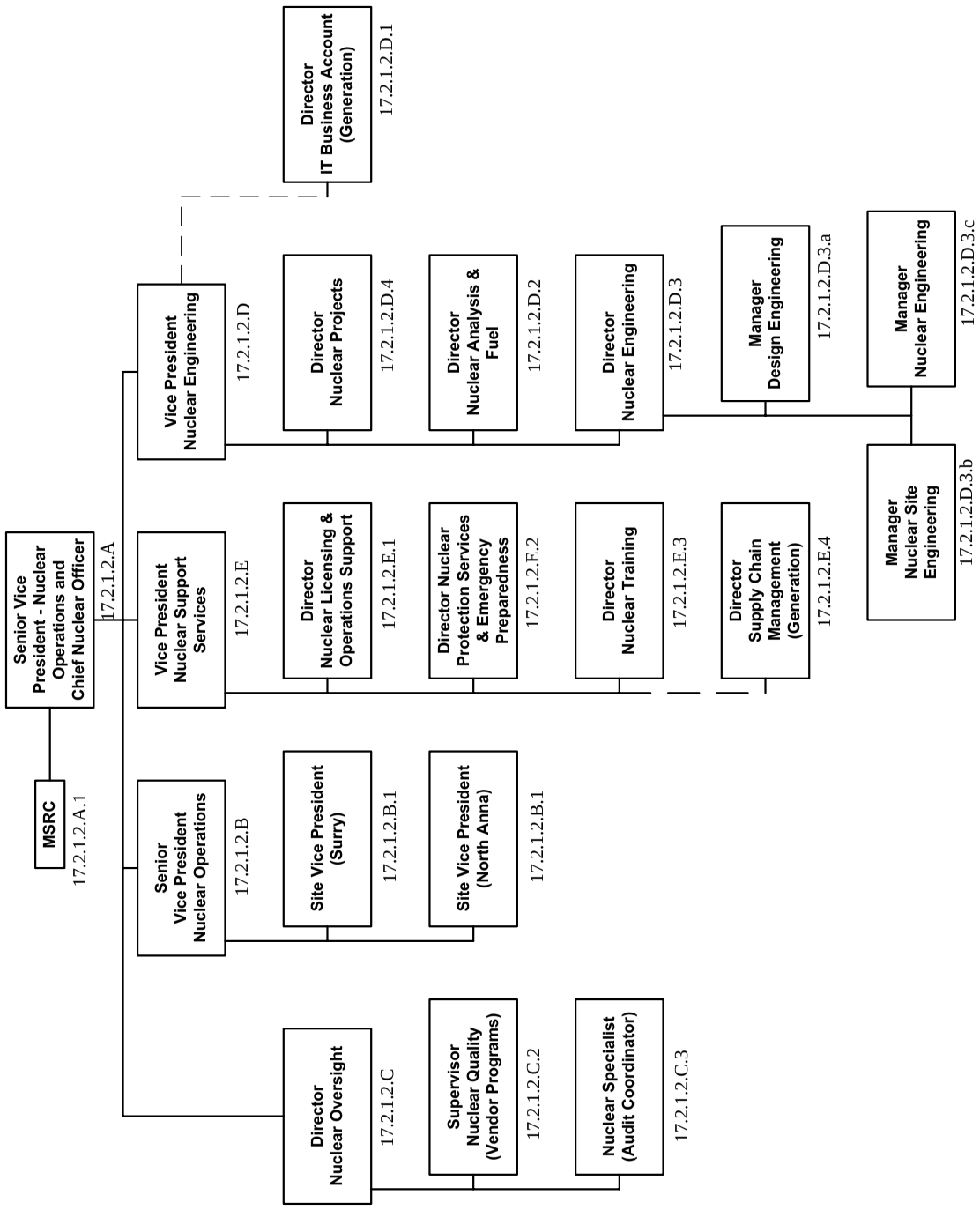


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Figure 17.2.1-2
ONSITE NUCLEAR ORGANIZATION

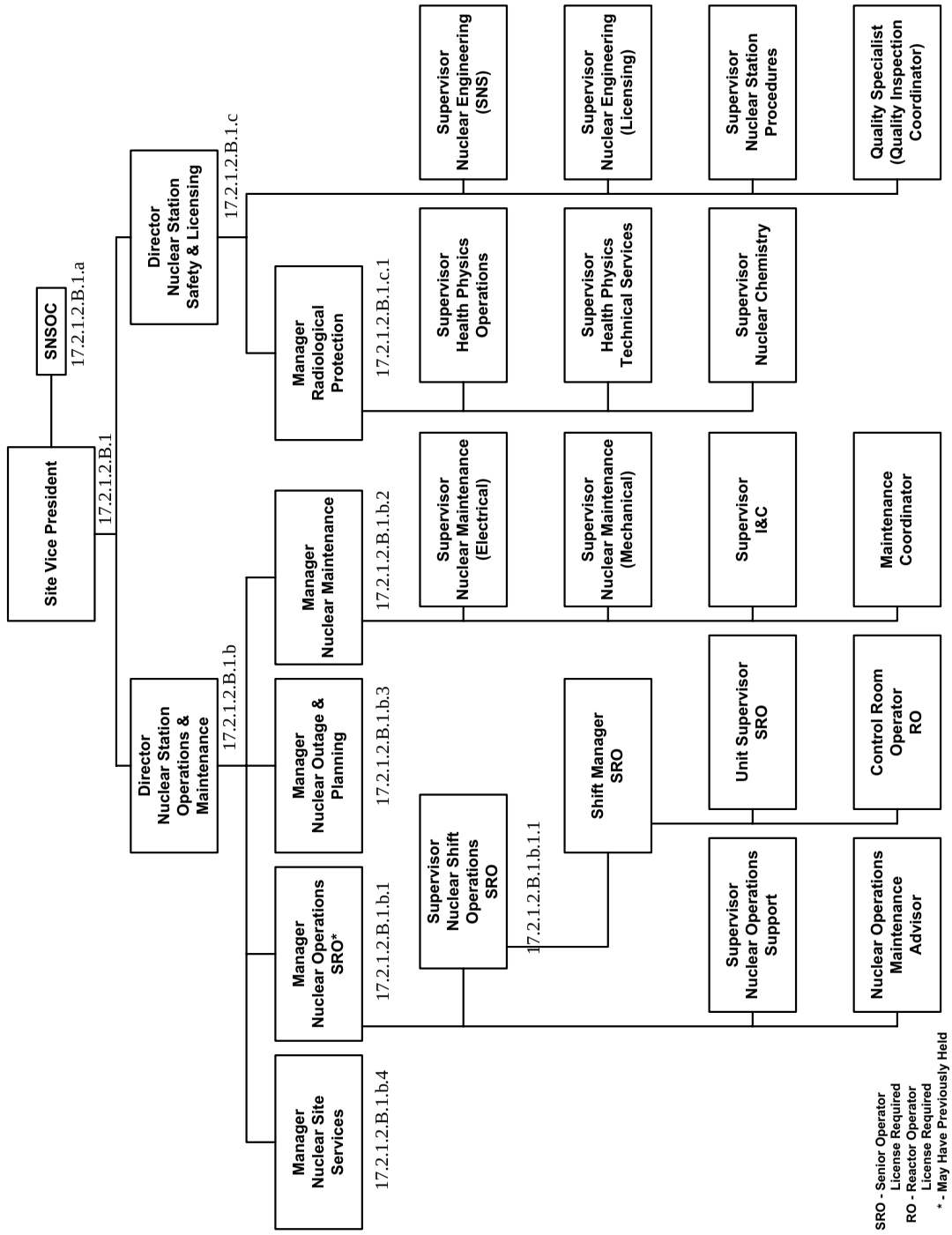


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Figure 17.2.1-3
ONSITE REPORTING TO OFFSITE NUCLEAR ORGANIZATION

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# APPENDIX B TABLES

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Table 17.2-0
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.8** — *Personnel Qualification and Training* (Second Proposed Revision 2, 9/80) Endorses ANSI/ANS 3.1 (Draft 12/79)

The applicability of this guide/standard to other personnel in the Company organization is addressed in other sections of the UFSAR and the Technical Specifications of the individual nuclear facility.

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide and standard, with one (1) exception, one (1) clarification and four (4) alternatives. They are:<br>(1) **Exception**: With regard to Section 4.2.2 of ANS 3.1 (Draft 12/79), titled *Operations Manager, Paragraph C, Training*: The Operations Manager will have or have held a senior operator license. | Clarification and Alternative meet or exceed applicable guides and standards. | (1) For Exception: NRC License Amendment Nos. 142 and 125 dated December 4, 1990 for North Anna and NRC License Amendment Nos. 151 and 148 dated December 31, 1990 for Surry approved revisions to the Technical Specifications granting relief from Section 4.2.2 of ANS 3.1 (Draft 12/79). The exception allows the Manager Nuclear Operations to hold or have previously held a Senior Reactor Operator License for the facility or a similar designed Pressurized Water Reactor plant. The Supervisor Nuclear Shift Operations will fulfill the Operations Manager requirements of ANS 3.1 (Draft 12/79). This change allows the Manager Nuclear Operations to perform management functions and examine training programs. |

Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.8** (continued) — *Personnel Qualification and Training* (Second Proposed Revision 2, 9/80) Endorses ANSI/ANS 3.1 (Draft 12/79)

The applicability of this guide/standard to other personnel in the Company organization is addressed in other sections of the UFSAR and the Technical Specifications of the individual nuclear facility.

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (2) **Clarification**: With regard to the term "Bachelor's Degree" as used in the draft, either of the following qualifications may be considered equivalent to a Bachelor's Degree:<br>A. 6 years of applied engineering experience at a nuclear facility in the area for which qualification is sought. In addition, experience and training requirements shall be met as delineated, or<br>B. 6 years of operational or technical experience/training related to engineering in nuclear power. In addition, experience and training requirements shall be met as delineated. | | (2) For Clarification: ANSI/ANS 3.1 (Draft 12/79) does not provide a clear alternative to formal educational requirements, but does provide guidance. This guidance was utilized to develop clarification to qualify non-degree holding personnel. |
| (3) **Alternative**: With regard to Section 4.4.5 of ANS 3.1 (Draft 12/79), titled *Quality Assurance*.<br>The Company's Nuclear Oversight organization will comply with Paragraph 4.4.5 as originally stated in ANSI/ANS 3.1-1978. | | (3) For Alternative: ANSI/ANS 3.1 1978. Paragraph 4.4.5 is considered to be consistent with the Company experience requirements which are delineated in other areas of this report. Further, the 1978 requirement is considered more conservative than the Draft 12/79 ANS Requirement. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.8** (continued) — *Personnel Qualification and Training* (Second Proposed Revision 2, 9/80) Endorses ANSI/ANS 3.1 (Draft 12/79)

The applicability of this guide/standard to other personnel in the Company organization is addressed in other sections of the UFSAR and the Technical Specifications of the individual nuclear facility.

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (4) **Alternative**: With regard to Section 4.3.2, *Supervisors Not Requiring NRC License*, Paragraph b; Experience: At the time of appointment to the position; the supervisor shall have 4 years experience in the craft or discipline he supervises or an equivalent number of years nuclear plant experience in a supervisory position with a Senior Reactor Operator's License. | | (4) For alternative: ANSI Section 4.3.2; Individuals having the specified alternate experience possess a working knowledge of plant activities (e.g., operations, maintenance, I & C, health physics, etc.) sufficient to perform a broad range of supervisory functions. The individual's day-to-day interaction with the various plant activities has provided him with an understanding of how each activity is integrated into safe and effective plant operations. His combination of SRO training and plant experience is adequate to assure that actions performed by individuals under his supervision are both technically correct and consistent with approved programs and procedures. |
| (5) **Alternative**: With regard to Section 5.3.3 of ANSI/ANS 3.1 (Draft 12/79), titled *Training for Shift Technical Advisor with Bachelor Degree without an NRC Senior Operator License*, Section 3). The Shift Technical Advisors will observe control manipulations on the simulator as appropriate. | | (5) For alternative: ANSI Section 5.3.3 (Draft 12/79): The performing of control manipulations is not considered a Shift Technical Advisor task. The primary objective of Shift Technical Advisor simulator instruction is to demonstrate plant and operator response to given conditions or events, not to develop expertise in control manipulations. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.8** (continued) — *Personnel Qualification and Training* (Second Proposed Revision 2, 9/80) Endorses ANSI/ANS 3.1 (Draft 12/79)

The applicability of this guide/standard to other personnel in the Company organization is addressed in other sections of the UFSAR and the Technical Specifications of the individual nuclear facility.

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (6) **Alternative**: Requalification training requirements for Shift Manager, Unit Supervisor, Control Room Operator - Nuclear, and Shift Technical Advisor are addressed in the Technical Specifications of the individual nuclear facility. | | (6) For alternative: These requalification training requirements have been reviewed and approved by the NRC. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br><br>The Company does not use the specific A, B, C, and D level classification system set forth in this guide. However, the Company followed the requirements of this guide in developing the list of structures, systems, and components for which the program is applicable. The specific listing of items to which the Operational Quality Assurance Program applies is described in detail in the Q-List for Surry and North Anna Power Stations.<br><br>The Company also followed the requirements of this guide in developing the ASME Section XI Class 1, 2 and 3 boundaries for the inservice inspection and testing program. These classes and boundaries are updated for each 10 year inspection interval. | Clarification meets or exceeds applicable guides and standards. | The Nuclear Design Control Program standards provides the methodology and procedures for determining the quality classification of components. A specific listing of these components is maintained in a document called the Q-List. |

Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.29** — *Seismic Design Classification* (Rev. 3, 9/78)

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br><br>See Generic Statement which prefaces this table with regard to construction related guides, standards and instructions. | Clarification meets or exceeds applicable guides and standards. | Regulatory Guide 1.29 is primarily concerned with the design and construction phase of nuclear power plants. The Company's clarification has been formulated to provide a means of translating design and construction criteria into guidance applicable to operating nuclear power facilities. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.30** — *Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment* (8/72). Endorses ANSI N45.2.4-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:<br>(1) See Generic Statement which prefaces this table with regard to construction related guides, standards, and instructions.<br>(2) Section 2.1 — **Planning** requirements, as determined by station management, will be incorporated into maintenance and modification procedures.<br>(3) Section 3 — **Preconstruction Verification**: (a) verification is required only for the modification(s) (b) will be implemented with the clarification that "approved instruction manuals" shall be interpreted to mean the manuals provided by the supplier as required by the procurement order. These manuals will not be reviewed and approved, per se, by the Company; (c) no special checks will be made by the person withdrawing a replacement part from the warehouse-equivalent controls are assured by compliance with ANSI N45.2.2 as set forth in this table; and (d) will be complied with, as determined by station management as part of the maintenance/modification program.<br>Section 4 — **Installation**: instructions will be implemented by inclusion, as determined by station management, in the appropriate maintenance or modification procedure for safety-related items. Standard Company maintenance practices require that care be exercised in the six areas listed whether a procedure is required or not. | Clarifications and alternatives meet or exceed applicable guides and standards. | These clarifications to ANSI N45.2.4-1972 are required to ensure that QA program continuity is maintained. In actuality these clarifications have been extracted from other standards and guides and are considered more conservative. These clarifications also insure that only one standard or guide is committed to for its applicable circumstance. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.30** (continued) — *Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment* (8/72). Endorses ANSI N45.2.4-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |

Section 5.1 — **Inspections**: including subsections 5.1.1, 5.1.2, and the first sentence in 5.1.3, will be implemented as set forth in Section 17.2.10 of the Operational QA Program. The inspection program will incorporate, as determined by station management, those items listed in these subsections. The remaining sentence in 5.1.3 is covered in equivalent detail in the Company's commitment to ANSI N18.7, section 5.2.6; the requirements as set forth in that commitment will be implemented in addition to the requirements stated here.

Section 5.2 — **Tests**: including subsections 5.2.1 through 5.2.3, will be implemented as set forth in Sections 17.2.3 and .11 of the Operational QA Program. The test program will consider the elements outlined in this Section, as determined by station management, when developing test requirements for inclusion in maintenance and modification procedures. In some cases, testing requirements may be met by post-installation surveillance testing in lieu of a special post-installation test. Where elements of Section 5.2 are not being met they shall be documented and justified.

(4) Section 6 — **Post Construction Verification**: is not generally considered applicable at operating facilities because of the scope of work and the relatively short interval between installation and operation. Where considered necessary by station management, the elements described in this section will be used in the development and implementation of inspection and testing programs as described in Sections 17.2.3, .10, and .11 of the Operational QA Program.

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.30** (continued) — *Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment* (8/72). Endorses ANSI N45.2.4-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (5) Section 6.2.1 — **Equipment Tests**: The last paragraph of this section deals with tagging and labeling. The Company will comply with an alternate last paragraph which reads: "Each safety-related item of process instrumentation is identified with a unique number. This number is utilized in instrument maintenance records so that current calibration status, including data such as the date of the calibration and identity of the person that performed the calibration, can be readily determined. Such information may also be contained on tags or labels which may be attached to installed instrumentation." | | |
| (6) Section 7 — **Data Analysis and Evaluation**: will be implemented as stated herein after adding the clarifying phrase "when determined by station management" at the beginning of that paragraph. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:<br>(1) Paragraph C.3 (*Subjects Requiring Independent Review*) of Regulatory Guide 1.33 (and Section 4.3.4 of ANSI N18.7-1976 which it references) will be implemented as required by the applicable nuclear facility Technical Specifications, Emergency Plan, Security Plan, and Fitness for Duty Program which designate the areas subject to independent reviews.<br>(2) Paragraph C.4 (*Audit Program*) of Regulatory Guide 1.33 (and Section 4.5 of ANSI N18.7-1976 which it references) will be implemented as required by the applicable nuclear facility Technical Specifications, Emergency Plan, Security Plan, Fitness for Duty Program, and administrative controls which designate the minimum areas to be audited. The audit program is further defined and will be implemented as required by the commitment to ANSI N45.2.12 as stated in Table 17.2-0 of the Operational Quality Assurance Program.<br>Paragraph C.4.c of Regulatory Guide 1.33 (and ANSI N18.7 to which it references) will be implemented as clarified in Section 17.2.18 of the Operational Quality Assurance Program Topical Report. Specifically, the frequency for conducting audits of the performance, training, and qualifications of the facility staff may vary based on performance and the safety significance of the audited activity but will not be less frequent than biennial (2 years). | Clarifications and alternatives meet or exceed applicable guides and standards. | These clarifications are required to ensure that QA program continuity is maintained; i.e., that only one standard or guide is committed to for a particular topic. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (3) Paragraph C.5a of Regulatory Guide 1.33 (and Section 4.4 of ANSI N18.7 which it references) will be implemented with the clarification that the Station Nuclear Safety and Operating Committee may perform this activity. | | |
| (4) Paragraph C.5.d of Regulatory Guide 1.33 (and Section 5.2.7.1 of ANSI N18.7 which it references) will be implemented by adding the clarifying phrase "When determined by station management in front of the fourth sentence of the fifth paragraph. For modifications where these requirements are not considered practicable, a review in accordance with the provisions of 10 CFR 50.59 shall be conducted and documented. | | |
| (5) Paragraph C.5.e of Regulatory Guide 1.33 (and Section 5.2.13.4 of ANSI N18.7 which it references) will be implemented subject to the same clarifications made for ANSI N45.2.2 elsewhere in Table 17.2-0 of the Operational QA Program. | | |
| (6) Paragraph C.5.f of Regulatory Guide 1.33 (and Section 5.2.19.(2) of ANSI N18.7 which it references) will be implemented when determined by station management. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (7) Paragraph C.5.g of Regulatory Guide 1.33 (and Section 5.2.19.1 of ANSI N18.7 which it references) will be implemented with the addition of the modifier "normally" after each of the verbs (should) which the Regulatory Guide converts to "shall." It is the Company's intent to fully comply with the requirements of this paragraph, and any conditions which do not fully comply will be documented and approved by station management personnel. In these areas, the reason for the exception shall also be documented. The documentation shall be retained for the same period of time as the affected preoperational test. | | |
| (8) With regard to Section 4.2 of ANSI N18.7-1976, titled **Program Description**: Two aspects are addressed in this Section: audits and independent reviews. The independent review program is implemented as required by the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. The Company audit program will be described in accordance with and to meet the requirements of ANSI N45.2.12 as endorsed in Table 17.2-0 of the Operational QA Program, the requirements of the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station, and Sections 17.2.16 and 17.2.18 of the Operational QA Program. | | |
| (9) With regard to Section 4.3 of ANSI N18.7-1976, titled **Independent Review Process**: The requirements of this Section, including all of its subparts, shall be met by compliance with the Technical Specification requirements for Surry Power Station and Appendix C of this topical report for North Anna Power Station. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (10) With regard to Section 5.2.2 of ANSI 18.7-1976, titled **Procedure Adherence**: The third and fourth sentences of the first paragraph of the Section address approval requirements for temporary changes to procedures which do not change the intent of the approved procedure. Adequate reviews will be provided by two members of the plant supervisory staff knowledgeable in the areas affected, one of which will hold a senior reactor operator license on the unit affected. Adequate reviews will be performed in accordance with Section 17.2.5 above, the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. | | |
| (11) With regard to Section 5.2.7 of ANSI N18.7-1976, titled **Maintenance and Modification**: Since some emergency situations could arise which might preclude preplanning of all activities, the Company will comply with an alternate to the first sentence in the second paragraph which reads: "Except in emergency or abnormal operating conditions where immediate actions are required to protect the health and safety of the public, to protect equipment or personnel or to prevent the deterioration of plant conditions to a possibly unsafe or unstable level, maintenance or modification of equipment shall be preplanned and performed in accordance with written procedures. Where written procedures would be required and are not used, the activities that were accomplished shall be documented after-the-fact and receive the same degree of review as if they had been preplanned." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (12) With regard to Section 5.2.7.1 of ANSI N18.7-1976, titled **Maintenance Programs**: The Company will comply with the requirements of the first sentence of the fifth paragraph, when determined by station management. This clarification is needed since it is not always possible to promptly determine the cause of the malfunction. In all cases, the Company will initiate proceedings to determine the cause, and will make such determinations promptly, when determined by station management. | | |
| (13) With regard to Section 5.2.8 of ANSI N18.7-1976, titled **Surveillance Testing and Inspection Schedule**: In lieu of a "master surveillance schedule," the following requirement shall be complied with: "A surveillance testing schedule(s) shall be established reflecting the status of all in-plant surveillance tests and inspections." | | |
| (14) With regard to Section 5.2.13.1 of ANSI N18.7-1976, titled **Procurement Document Control**: The words "the same degree of control" in the last sentence are replaced with "Engineering review." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (15) With regard to Section 5.2.15 of ANSI N18.7-1976, titled **Review, Approval and Control of Procedures**: The third sentence in paragraph three is interpreted to mean: Applicable procedures, as determined by Station Management, shall be reviewed following an accident, an unexpected transient, significant operator error or equipment malfunction.<br>The first sentence of the fourth paragraph is considered to be met via procedure reviews as described by administrative procedures.<br>Additional procedure review, approval, and control requirements/exceptions are discussed in Section 17.2.5. above. | | The **biennial** review requirement is deleted. The procedures upgrade program provides a systematic and effective process for developing and revising procedures which encompasses the intent of the biennial review. |
| (16) With regard to Section 5.2.17 of ANSI N18.7-1976, titled **Inspections**: Not all inspections will require generation of a separate inspection report. Inspection requirements may be integrated into appropriate procedures or other documents with the procedure or document serving as the record. However, records of inspections will be identifiable and retrievable. | | |
| (17) With regard to Section 5.3.9 of ANSI N18.7-1976, titled **Emergency Procedure**: As directed by the NRC, the Company follows a format for emergency procedures which is "symptom" based as opposed to "event" based as stipulated in Section 5.3.9.1. Since the Company has these "symptom" based procedures; "event" based procedures are not normally provided. | | |
| (18) With regard to Section 5.3.9.2 of ANSI N18.7-1976, titled **Events of Potential Emergency**: The Company will interpret item (11) to mean the natural occurrences which have been evaluated in the UFSAR for the individual nuclear facility. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.33** (continued) — *Quality Assurance Requirements (Operation)* (Rev. 2, 2/78) - Endorses ANSI N18.7-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (19) With regard to Section 5.3.9.3 of ANSI N18.7-1976, titled **Procedures for Implementing Emergency Plan**: The Company's NRC accepted Emergency Plan for each nuclear facility will be implemented in lieu of the requirements in this Section. | | |

Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications:<br>(1) The guide and standard are applicable to those areas of the Quality Assurance Program addressing on-site cleaning of materials and components, cleanness control, and preoperation cleaning and layup of fluid systems.<br>(2) With regard to Paragraph C.3 of Regulatory Guide 1.37: The water quality for final flushing of fluid systems and associated components shall be at least equivalent to the quality of the operating system water except for the oxygen and nitrogen content; but this does not infer that chromates or other additives, normally in the system water, will be added to the flush water.<br>(3) With regard to Paragraph C.4 of Regulatory Guide 1.37: Expendable materials such as inks and related products, temperature indicating stick, tapes, gummed labels, wrapping materials (other than polyethylene), water soluble dam materials, lubricants, NDE penetrant materials and couplants, desiccants, and like materials which contact stainless steel or nickel alloy surfaces; shall not contain lead, zinc, copper, mercury, cadmium and other low melting point metals, their alloys or compounds as basic and essential chemical constituents. No more than 0.1 percent (1000 ppm) halogens will be allowed where such elements are leachable or where they could be released by breakdown of the compounds under expected environmental conditions. | Clarifications meet or exceed applicable guides and standards. | The four clarifications listed were generated to translate general guidance into exact commitments, and to provide alternate means to perform routine tasks. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.37** (continued) — *Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants* (3/73) - Endorses ANSI N45.2.1-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (4) With regard to Section 5 of ANSI N45.2.1-1973, titled **Installation Cleaning**: The recommendation that local rusting on corrosion resistant alloys be removed by mechanical methods is interpreted to mean that local rusting may be removed mechanically, but the use of other removal means is not precluded as determined by Engineering. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:<br>(1) With regard to Section 2.1 of ANSI N45.2.2-1972, titled **Planning**: (First sentence.) The specific items to be governed by the Standard shall be identified in Administrative Procedures.<br>(2) With regard to Section 2.3 of ANSI N45.2.2-1972, titled **Results**: The specific methods for performing and documenting tests and inspections are given in Sections 17.2.10 and 17.2.11 of the Operational QA Program. The requirements in these Sections will be implemented in lieu of the general requirements here.<br>(3) With regard to Section 2.7 of ANSI N45.2.2-1972, titled **Clarification of Items**: The Company may choose not to explicitly use the four level classification system. However, the specific requirements of the Standard that are appropriate to each class are applied to the items suggested in each classification and to similar items as determined by station management. | Clarifications and alternatives meet or exceed applicable guides and standards. | The clarifications in this section are proposed only to translate general guidance into specific requirements.<br>The proposed alternatives are provided to reflect current Company practices which are distilled from over ten years of experience gained at operational nuclear facilities. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (4) With regard to Section 3.2.1 of ANSI N45.2.2-1972, titled **Level A Items**: As an alternate to the requirements for packaging and containerizing items in storage to control contaminants (Items (4) and (5)), the Company may choose a storage atmosphere which is free of harmful contaminants in concentrations that could produce damage to stored items as determined by station management. Similarly (for Item (7)) the Company may obviate the need for caps and plugs, as determined by station management, with an appropriate storage atmosphere, and may choose to protect weld-end preparations and threads by controlling the manner in which the items are stored. These clarifications apply whenever items (4), (5) or (7) are subsequently referenced and to Section 3.5.1, titled **Caps and Plugs,** and Section 3.4, titled **Methods of Preservation**. | | |
| (5) With regard to Section 3.2.3 of ANSI N45.2.2 1972, titled **Level C Items**: (Subpart 2) states "Items shall be packaged with a waterproof enclosure…," as an alternative, the company may choose appropriate packaging when the storage environment prevents harmful contaminants in concentrations that could produce damage to stored items as determined by Station mgmt. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (6) With regard to Section 3.3 of ANSI N45.2.2-1972, titled **Cleaning**: (Third sentence) the Company interprets "documented cleaning methods" to allow generic cleaning procedures to be written which are implemented, as necessary, by trained personnel. Each particular cleaning operation shall have an individual cleaning procedure or reference a generic procedure. The generic procedures will specify methods of cleaning or which type(s) of solvent may be used in a particular application. | | |
| (7) With regard to Section 3.4 of ANSI N45.2.2-1972, titled **Methods of Preservation**: (First sentence) the Company will comply with these requirements subject to the clarifications of Section 3.2.1, (4) and (5) above, and the definition of the phrase "deleterious corrosion" to mean that corrosion which cannot be subsequently removed and which adversely affects form, fit or function. | | |
| (8) With regard to Section 3.6 of ANSI N45.2.2-1972, titled **Barrier and Wrap Material and Desiccants**: This section requires the use of non-halogenated materials in contact with austenitic stainless steel. Refer to Regulatory Guide 1.37 above for the Company position. | | |
| (9) With regard to Section 3.7.1 of ANSI N45.2.2-1972, titled **Containers**: Cleated, sheathed boxes may be used up to 1000 lb rather than 500 lb as specified in 3.7.1(1). This type of box is safe for, and has been tested for, loads up to 1000 lb. Other national standards allow this (see Federal Specification PPP-B-601). Special qualifications testing shall be required for loads above 1000 lb. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (10) With regard to Section 3.7.2 of ANSI N45.2.2-1972, titled **Crates and Skids**: Skids or runners will normally be used on containers with a gross weight of 100 lb or more. Skids or runner will normally be fabricated from 4 x 4 inch nominal lumber size, minimum, and laid flat except where this is impractical because of the small dimensions of the container. If forklift handling is required, minimum floor clearance for forklift tines will be provided. | | |
| (11) With regard to Sections 4.3, 4.4 and 4.5 of ANSI N45.2.2-1972, titled, respectively, **Precautions During Loading and Transit, Identification and Marking,** and **Shipment from Countries Outside the United States**: The Company will comply with the requirements of these Sections subject to the clarifications taken to other Sections which are referenced herein. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (12) With regard to Section 5.2.1 of ANSI N45.2.2-1972, titled **Shipping Damage Inspection**: Warehouse personnel will normally visually scrutinize incoming shipments for damage of the types listed in this Section; this activity is not necessarily performed prior to unloading. Since all required items receive the Item Inspection of Section 5.2.2, separate documentation of the Shipping Damage Inspection is not necessary. Release of the transport agent after unloading and signing for receipt of the shipment may be all of the action taken to document completion of the Shipping Damage Inspection. Any non-conformance noted will be documented and dispositioned as required by Section 17.2.15 of the Operational QA Program.<br><br>The person performing the visual scrutiny during unloading is not considered to be performing an inspection function as defined under Regulatory Guide 1.74; therefore, while he will be trained to perform this function he may not necessarily be certified (N45.2.6) as an Inspector. | | |
| (13) With regard to Section 5.2.2 of ANSI N45.2.2-1972, titled **Item Inspection**: The second division of this subsection requires six additional inspection activities if an item was not inspected or examined at the source. Procurement Engineering shall determine and document the extent of receipt inspection based on consideration of Paragraph 5.2.2. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (14) With regard to Section 5.4 of ANSI N45.2.2-1972, titled **Status Indicating System**: The Section states in part "Tags shall be securely affixed to the items and displayed in an area that is readily accessible." As an alternative, the company may choose to use Labels or Tags to identify items. | | |
| (15) With regard to Section 6.1.2 of ANSI N45.2.2-1972, titled **Levels of Storage**: Subpart (2) is replaced with the following:<br>(2) Level B items shall be stored within a fire resistant, weather-tight, and well ventilated building or equivalent enclosure in which measures have been taken against vandalism. This building shall be situated and constructed so that it will not normally be subject to flooding; the floor shall be paved or equal, and well drained. If any outside waters should come in contact with stored equipment, such equipment will be labeled or tagged non-conforming, and then the non-conformance document will be processed and evaluated in accordance with Section 17.2.15. Items shall be placed on pallets, shoring or shelves to permit air circulation. The building shall be provided with uniform heating and temperature control or its equivalent to prevent condensation and corrosion. Minimum temperature shall be 40°F and maximum temperature shall be 140°F or less if so stipulated by a manufacturer. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (16) With regard to Section 6.2.1 of ANSI N45.2.2-1972, titled **Access to Storage Areas**: Items which fall within the Level D classification of the standard will be stored in an area which may be posted to limit access, but other positive controls such as fencing or guards will not normally be provided. | | |
| (17) With regard to Section 6.2.4 of ANSI N45.2.2-1972, titled **Storage of Food and Associated Items**: The sentence is replaced with the following: "The use or storage of food, and drinks in any storage area shall be controlled and shall be limited to designated areas where such use or storage is not deleterious to stored items where station management deems appropriate. | | |
| (18) With regard to Section 6.2.5 of ANSI N45.2.2-1972, titled **Measures to Prevent Entrance of Animals**: The sentence is replaced with the following: "Exterminators or other appropriate measures shall be used to control animals to minimize possible contamination and mechanical damage to stored material." | | |
| (19) With regard to Section 6.3.4 of ANSI N45.2.2-titled **Identification**: The section states "All items and their containers shall be plainly marked so that they are easily identified without excessive handling or unnecessary opening of crates and boxes." The company shall substitute "All items (or, if in containers, their containers) shall be plainly marked so that they are easily identified without excessive handling or unnecessary opening of crates and boxes." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (20) With regard to Section 6.4.2 of ANSI N45.2.2-1972, titled **Care of Items**: The following alternatives are provided for the indicated subpart:<br>(5) "Space heaters in electrical equipment shall be energized unless a documented engineering evaluation determines that such space heaters are not required."<br>(6) "Large (greater than or equal to 50HP) rotating electrical equipment shall be given insulation resistance tests on a scheduled basis unless a documented engineering evaluation determines that such tests are not required."<br>(7) Within thirty days of having been placed in storage, rotating equipment weighing over approximately 50 pounds shall be evaluated by engineering personnel to determine if shaft rotation in storage is required: The results of the evaluation shall be documented. If rotation is required, it shall be performed at specific intervals, be documented, and be conducted so that parts receive a coating of lubrication where applicable and so that the shaft does not come to rest in the same position occupied prior to rotation. For long shafts or heavy equipment subject to undesirable bowing, shaft orientation after rotation shall be specified and obtained. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (21) With regard to Section 6.5 of ANSI N45.2.2-1972, titled **Removal of Items from Storage**: The Company does not consider the last sentence of this Section to be applicable to the operations phase due to the relatively short period of time between installation and use. The first sentence of the Section is replaced with: "the Company will develop, issue, and implement a procedure(s) which cover(s) the removal of items from storage. The procedure(s) will assure that the inspection status of all material issued is known, controlled and appropriately dispositioned." | | |
| (22) With regard to Section 6.6 of ANSI N45.2.2-1972, titled **Storage Records**: The Company will comply with the requirements of this Section with the clarification that, for record purposes, only the access of personnel not specifically authorized such by station management into indoor storage areas shall be recorded. Unloading or pick-up of material shall not be considered "access," nor shall inspection by maintenance and modification inspection personnel or audit by Nuclear Oversight personnel, authorized contractors, NRC or other regulatory agents, nor shall tours by non-employees. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.38** (continued) — *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants* (Rev. 2, 5/77) - Endorses ANSI N45.2.2-1972 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (23) With regard to Section 7.3 of ANSI N45.2.2-1972, titled **Hoisting Equipment**: Rerating of hoisting equipment will be considered only when absolutely necessary. Prior to performing any lift above the load rating, the equipment manufacturer must be contacted for his approval and direction. The manufacturer must be requested to supply a document granting approval for a limited number of lifts at the new rating and any restrictions involved, such as modifications to be made to the equipment, the number lifts to be made at the new rating, and the test lift load. At all times, the codes governing rerating of hoisting equipment must be observed.<br>If rerating hoisting equipment is necessary and the Company cannot or does not contact the equipment manufacturer as described above, the test weight used in temporarily rerating hoisting equipment for special lifts will be at least equal to 110% of the lift weight. A dynamic load test over the full range of the lift using a weight at least equal to the lift weight shall be performed. | | |
| (24) With regard to Section A3.9 of ANSI N45.2.2-1972, titled **Marking**: As an alternative to the requirements in Subpart 4, the Company may choose to mark containers with waterproof ink or paint with legible characters. Additionally, the requirements of Subpart 6 shall only apply to shipment of items. Items in storage shall be affixed with labels or tags with sufficient information to preserve the item's identity. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.39** — *Housekeeping Requirements for Water-Cooled Power Plants* (Rev. 2, 9/77) - Endorses ANSI N45.2.3-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The Operational Quality Assurance program complies with this guide with the following clarifications:<br>See Generic Statement which prefaces this table.<br>(1) Additional clarifications for ANSI N45.2.3-1973 are indicated below for specific Sections.<br>Section 2.1 — **Planning**: The Company may choose not to utilize the five-level zone designation system, but will utilize standard janitorial and work practices to maintain a level of cleanliness as delineated in the Company's Nuclear Operations Industrial Safety & Health Accident Prevention Manual which is equivalent to the requirements contained in the referenced section.<br>Cleanliness will be maintained, consistent with the work being performed, so as to prevent the entry of foreign material into safety-related systems. This will include, as a minimum, documented cleanliness inspections which will be performed prior to system closure.<br>As determined by station management, (e.g., the size of the opening would permit entry of the tools being used) control of personnel, tools, equipment, and supplies will be established when the reactor system is opened for inspection, maintenance or repair.<br>Additional housekeeping requirements will be implemented as required for control of radioactive contamination.<br>Section 2.2 — **Procedures and Instructions**: Appropriate procedures will be written and implemented. | Clarifications meet or exceed applicable guides and standards. | These clarifications are proposed to perform a twofold function:<br>(A) To translate construction criteria to operating plant oriented requirements.<br>(B) To reflect experience gained at operational nuclear facilities.<br>It should be noted that where the Company does not specifically implement requirements as delineated herein, the proposed alternatives are reflected in written procedures and policy and contain all necessary elements to assure quality is maintained. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.39** (continued) — *Housekeeping Requirements for Water-Cooled Power Plants* (Rev. 2, 9/77) - Endorses ANSI | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| Section 3.2 — **Control of Facilities**: The Company may choose not to utilize the five-level zone designation system, but will utilize the Company's Nuclear Operations Industrial Safety & Health Accident Prevention Manual to maintain a level of cleanliness commensurate with the requirements of this section.<br><br>Cleanliness will be maintained, consistent with the work being performed, so as to prevent the entry of foreign material into safety-related systems. This will include, as a minimum, documented cleanliness inspections which will be performed prior to system closure. As necessary, (e.g., the size of the opening would permit entry of the tools being used) control of personnel, tools, equipment, and supplies will be established when major portions of the reactor system are opened for inspection, maintenance or repair.<br><br>Additional housekeeping requirements will be implemented as required for control of radioactive contamination.<br><br>Section 3.3 — **Materials and Equipment**: See Generic Statement which prefaces this table.<br><br>Section 3.4 — **Construction Tools, Supplies and Equipment**: See Generic Statement which prefaces this table.<br><br>Section 3.5 — **Surveillance, Inspections and Examination**: Subparagraph (1) See Generic Statement which prefaces this table. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational QA Program complies with this guide with the following clarifications:<br>(1) With regard to Section 1.2 of ANSI N45.2.6-1978, titled **Applicability**: The third paragraph requires that the Standard be used in conjunction with ANSI N45.2; the Company no longer specifically commits to ANSI N45.2 in the Operational QA Program. The fourth paragraph requires that the Standard be imposed on personnel other than Company employees; the applicability of the Standard to suppliers will be documented and applied, as appropriate, in the procurement documents for such suppliers.<br>(2) With regard to Section 1.4 of ANSI N45.2.6-1978, titled **Definitions**: Definitions in this Reg. Guide 1.58 which are not included in ANSI N45.2.10 will be used: all definitions which are included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74.<br>(3) With regard to Section 2.5 of ANSI N45.2.6-1978, titled **Physical**: The Company will implement the requirements of this Section with the stipulation that, where no special physical characteristics are required, none will be specified. The converse is also true: If no special physical requirements are stipulated by the Company, none are considered necessary. | Clarifications meet or exceed applicable guides and standards. | The proposed clarifications reflect Company practices and are provided here to assure that QA program continuity with other delineated standards and guides is maintained. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.58** (continued) — *Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel* - (Rev. 1, 9/80) - Endorses ANSI N45.2.6-1978 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (4) With regard to Section 3.1 of ANSI N45.2.6-1978, titled **General**: The Company will implement the requirements of this Section with the stipulation that, Level III inspectors are not a specific requirement of the Company's inspection program. | | |

Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br>See Generic Statement which prefaces this table.<br>(1) With regard to Paragraph C.2(1) of Regulatory Guide 1.64: If in an exceptional circumstance the designer's immediate Supervisor is the only technically qualified individual available, this review may be conducted by the Supervisor, providing that: (a) the other provisions of the Regulatory Guide are satisfied, and (b) the justification is individually documented and approved in advance by the Supervisor's management, and (c) Nuclear Oversight audits cover frequency and effectiveness of use of Supervisors as design verifiers to guard against abuse. | Clarification meets or exceeds applicable guides and standards. | Clarification is considered an acceptable alternative to that proposed in the referenced standard in that all quality elements have been maintained. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.74** — *Quality Assurance Terms and Definitions* - (2/74) - Endorses ANSI N45.2.10-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br>(1) The Company reserves the right to define additional words or phrases which are not included in this Standard. Such additional definitions will be documented in appropriate procedures and/or in attachments/appendices to Nuclear Oversight procedures manual or in sections of the Operational QA Program.<br>(2) The Company intends for inspections and tests to be performed in accordance with the Operational QA Program by personnel certified as required by that program and for activities defined by "Inspection" and "Testing" in ANSI N45.2.10. Appropriate references to the organization which will perform the activity or quality procedures to be used for performing the activity will be made. If such references are not made, inspections or tests are to be considered under the following definition:<br>"Inspection" (when used to refer to activities that are not performed by certified personnel) — Examining, viewing closely, scrutinizing, looking over or otherwise checking activities. Personnel performing these functions are not necessarily certified to ANSI N45.2.6. However, station management through prior procedure review shall determine the appropriate personnel qualifications and reporting relationships. | Clarification meets or exceeds applicable guides and standards. | The clarifications illuminate actual Company QA program practices and are considered to enhance the Company's commitment to quality practices. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.74** (continued) — *Quality Assurance Terms and Definitions* - (2/74) - Endorses ANSI N45.2.10-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| "Testing" (when used to refer to activities that are not performed by certified personnel) — completion of predetermined procedure steps which determine or verify the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions. Personnel performing these steps may **not** necessarily be certified to ANSI N45.2.6. If the completion of the procedural steps utilizes skills and knowledge which they have already obtained from applicable training and experience based programs or formal education programs. Station management through prior procedure review shall determine the appropriate personnel qualifications and reporting relationships. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.74** (continued) — *Quality Assurance Terms and Definitions* - (2/74) - Endorses ANSI N45.2.10-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (3) The definition of "procurement documents," will be that provided in ANSI N45.2.13, as augmented by Regulatory Guide 1.74 and the definition given in 10 CFR 21.3(k). Specifically, the Company will utilize the compound definition: "Documents that identify and define the requirements which facilities or basic components must meet in order to be considered acceptable by the purchaser. Procurement documents may include purchase requisitions, purchase orders (i.e., Receiving Reports), drawings, contracts, letters of intent, work orders, proposals and their acceptances, electronic procurement system documents, and specifications or instructions which are used to define requirements for purchase. Supplier-generated documents and records which were required to be submitted to the Company or to be retained by the supplier are also examples of procurement documents." | | This revised definition of "Procurement Documents" acknowledges the definition provided in 10 CFR 21.3(k). Additionally, the term "contractually binding" is removed to reflect that procurement records retained in accordance with the Company's commitment to ANSI N45.2.9 may not necessarily be the original or a copy of the contractually binding document if the pertinent information is available through one or more of the documents listed in the revised definition. |
| (4) "Program Deficiencies" (Not defined in ANSI N45.2.10, but used and defined differently in ANSI N45.2.12) — Failure to develop, document or implement effectively any applicable element of the Operational QA Program. | | |
| (5) "Quality Assurance Program Requirements" (Not defined in ANSI N45.2.10 but used and defined differently in ANSI N45.2.13) — Those individual requirements of the Operational QA Program which, when invoked in total or in part, establish the requirements of the quality assurance program for the activity being controlled. Although not specially used in the Operational QA Program, ANSI N45.2 may be imposed upon the Company's suppliers. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.74** (continued) — *Quality Assurance Terms and Definitions* - (2/74) - Endorses ANSI N45.2.10-1973 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (6) With the exception of the time intervals defined by the station Technical Specifications, the following definitions shall be applied when defining time intervals for other activities:<br>**Weekly**: at least once per 7 days<br>**Monthly**: at least once per 31 days<br>**Quarterly or every 3 months**: at least once per 92 days<br>**Semiannually or every 6 months**: at least once per 184 days<br>**Every 9 months**: at least once per 276 days<br>**Yearly or annually**: at least once per 366 days<br>**Biennial (2 years)**: at least once per 732 days<br>**Triennial (3 years)**: at least once per 1098 days<br>The above time intervals may be extended by up to 25%. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:<br>(1) With regard to Section 3.2.2 of ANSI N45.2.9-1974, titled **Index**: The phrase "an index" is clarified to mean a collection of documents or indices which, when taken together, supply the information attributed to "an index" in the standard.<br>The specific location of a record "within a storage area" may not be delineated (e.g., The specific location within a computer record file may not be constant. Further, the Company may utilize a computer assisted random access filing system where such location could not be readily "documented", nor would such a location be "relevant"). The storage location will be delineated, but where file locations change within time, the specific location of a record within that file may not always be documented.<br>(2) With regard to Section 4.2 of ANSI N45.2.9-1974, titled **Timeliness**: The Company's contractual agreement with its contractors and suppliers will constitute fulfillment of the requirements of this Section.<br>(3) With regard to Section 5.4 of ANSI N45.2.9-1974, titled **Preservation**: The following clarification is substituted for the current subsection 5.4.2: "Records shall be stored in enclosed containers, cabinets or other comparable document storage hardware." | Clarifications and alternatives meet or exceed applicable guides and standards. | These proposals are the results of experience gained at operating nuclear facilities for over a decade. As with all guides and standards, additional clarity is sometimes required. Further the alternative (6) presented herein reflects the "as-built" condition of the Company's records storage facilities. These facilities were constructed prior to any regulatory position being defined, and, at the time of construction, were considered more than adequate to assure permanent records retention. The discrepancies which might exist between current guides and standards and "as-built" conditions are more than compensated for by other more stringent measures such as:<br>a) constant surveillance of the facility both by monitoring devices, security patrols, and fire inspections, and<br>b) Permanently installed dedicated fire suppression apparatus. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.88** (continued) — *Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records* - (Rev. 2, 10/76) - Endorses ANSI N45.2.9-1974 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The following clarification is substituted for the current subsection 5.4.3 "Provisions shall be made for special processed records (such as radiographs, photographs, negatives, microfilm and magnetic media) to prevent damage as appropriate to the record type and will address the manufacturer's recommendations."<br><br>(4) With regard to Section 5.5 of ANSI N45.2.9-1974, titled **Safekeeping**: Routine general office and nuclear site security systems and access controls are provided.<br><br>(5) With regard to Section 5.6 of ANSI N45.2.9-1974, titled **Facility**: Records shall be forwarded to the appropriate records storage facility promptly after completion when required processing and reviews have been completed.<br><br>Paragraph 4, subsection 3 is clarified to require a two-hour minimum fire rating to be consistent with the 1979 version of the Standard and *NRC Criteria for Record Storage Facilities* (Guidance - ANSI N45.2.9, Section 5.6) issued 7/15/79.<br><br>Paragraph 4, subsection 9 is clarified to read: "No pipes or penetrations except those providing fire protection, lighting, temperature/humidity control, or communications are to be located within the facility and they shall comply with a minimum two-hour fire protection rating. | | |

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (6) The Surry Power Station facility conforms to ANSI N45.2.9-1974 as clarified in this Table except that it is rated at approximately 2 hours; doors, frames, and hardware are three-hour rated. This facility is considered to meet the intent of ANSI N45.2.9 and provides adequate protection for records. | | |
| (7) The North Anna Power Station Records Vault meets the intent of Chapter 3 of NFPA No. 232-1975, subject to the following provisions:<br>(a) The file room is constructed with a minimum fire rating of two (2) hours.<br>(b) Heating, cooling and ventilation for the file room is by means of a forced air system, with all fans, filters, and heating and cooling elements located in an equipment room which is external to the file room. Ducts for this system are located on the ceiling of the file room and are provided with the standard door dampers with a minimum rating of two (2) hours where they penetrate the file room barrier to other areas of the building.<br>(c) The file room is provided with an early warning fire detection system and automatic fire suppression system. A protective signaling system is provided, with a remote alarm located at a constantly attended station.<br>(d) Telephone service is provided to the file room, with the wire penetration constructed and sealed in accordance with NFPA No. 232-1975. | | |

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (e) All records stored in the file room are stored in metal cabinets or rolling file shelves, which are arranged to provide adequate access and aisleways. Work not directly related to the storage, retrieval or auditing of records is not allowed in the file room. Smoking, eating, and drinking is prohibited in the file room.<br>(f) A wall divides the file room into two sections, with one section used as a file room and the other section used for microfilming of records and/or supply storage. The dividing wall has a minimum fire rating of two (2) hours, including the fire door dampers in the duct penetrating the wall.<br>(8) The North Anna Power Station Training Center Vault meets the intent of Chapter 3 of NFPA No. 232-1975, subject to the following provisions:<br>(a) The file room is constructed with a minimum fire rating of two (2) hours.<br>(b) Heating, cooling and ventilation for the file room is by means of a forced air system, with all fans, filters, and heating and cooling elements located in an equipment room which is external to the file room. Ducts for this system are located above the ceiling of the file room and are provided with accordion dampers with a minimum rating of two (2) hours where they penetrate the file room barrier to other areas of the building. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (c) The file room is provided with an early warning fire detection system and automatic fire suppression system. A protective signaling system is provided, with a remote alarm located at a constantly attended station.<br>(d) Telephone service is provided to the file room, with the wire penetration constructed and sealed in accordance with NFPA No. 232-1975.<br>(e) All records stored in the file room are stored in metal cabinets, which are arranged to provide adequate access and aisleways. Work not directly related to the storage, retrieval or auditing of records is not allowed in the file room. Smoking, eating, and drinking is prohibited in the file room.<br>(9) The Innsbrook Technical Center's Vital Records Vaults for nuclear records conform to the requirements of Section 5.6 of ANSI N45.2.9-1974 as clarified in (5) above without exceptions.<br>(10) The Surry Training Center training records vault (Main Building) conforms to the requirements of section 5.6 ANSI N45.2.9-1974 without exceptions.<br>(11) Quality Assurance records may be stored in an approved offsite facility. The offsite facility must meet or exceed requirements of an onsite facility. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (12) With regard to Section A.6 of Appendix A to ANSI N45.2.9-1974 entitled, *Operation Phase Activity Records*, Section A.6.1, "Operation, Maintenance & Testing," is replaced by the information in Table 17.2-2. | | |
| (13) For the collection, storage and maintenance of electronically stored QA records, see Section 17.2.17 of the QA Topical Report. | | |
| (14) With regard to Section 1.4 of ANSI N45.2.9-1974 entitled, *Definitions.* The definition of "Quality Assurance Records" is revised to the following: "Those records which furnish documentary evidence of the quality of items and activities affecting quality or compliance with the NRC regulations. Documents are considered to be quality records when the document has been completed, including all required signatures, reviews, and approvals. At the expiration of a QA record period, the document is declassified and may be disposed of, if appropriate, as determined by Company management." | | |
| (15) Consistent with ANSI N45.2.9, Section 2.2, the definition of lifetime for record retention is footnoted as follows:<br>a. Lifetime is (1) until the termination of the Facility Operating License; (2) until termination of employment (training and qualification records); (3) transfer of ownership (i.e., fuel); or (4) service life of the facility, system, or component, as applicable. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**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 Plants* - (Rev. 1, 4/76) - Endorses ANSI N45.2.5-1974

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br>See Generic Statement which prefaces this table.<br>(1) With regard to Section 2.5.1 of ANSI N45.2.5-1974, titled **Selection**: The Company complies with the requirement set forth in the first paragraph of this Section for selection of measuring and test equipment on the basis of sufficient accuracy to determine conformance to the standard's requirements: This is accomplished without the use of calibrated balances or volumetric buckets. | Clarification meets or exceeds applicable guides and standards. | The proposed clarification is used to translate construction oriented documents to operational regulations. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (2) Qualification Changes<br>a. ANSI N45.2.5 Section 4.91 commitment states:<br>**4.9.1 Qualification of Operators.** Prior to the production splicing of reinforcing bars, each member of the splicing crew (or each crew if the members work as a crew) shall prepare two qualification splices for each of the splice positions (e.g., horizontal, vertical, diagonal) to be used. The qualification splices shall be made using the same materials (e.g., bar, sleeve, powder) as those to be used in the structure. To qualify, the completed splices must meet the specified visual inspection acceptance requirements and meet the tensile test requirements of Section 4.9.3. Each member of the splicing crew (or each crew if members work as a crew) is subject to requalification (1) if the specific splice position (e.g., horizontal, vertical, diagonal) has not been used by member or crew for a period of three months or more, or (2) if there is another reason to question their ability, such as the completed splices not passing visual inspection or tensile testing. The requalification procedure should be identical to the qualification procedure. | Modified position is a reduction in commitments. | Modified position is Quality Assurance alternative approved by a NRC Safety Evaluation that is applicable to the facility. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.94** (continued) — *Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants* - (Rev. 1, 4/76) - Endorses ANSI N45.2.5-1974 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| b. Modified commitment to ASME Code, 1995 edition, subparagraph 4333.4, states:<br>**CC-4333.4 Initial Qualification Tests.** [A95] Each splicer shall prepare two qualification splices on the largest bar size to be used. In additional, for ferrous filler metal splices, cementitious grouted splices, and swaged splices only, each of the splice positions to be used (e.g., horizontal, vertical, diagonal) shall be qualified. The qualification splices shall be made using reinforcing bar identical to that to be used in the structure. The completed qualifications splices shall be tensile tested using the loading rates set forth in SA-370 and the tensile results shall meet those specified in Tables CC-4334-1. [A95] | | |
| (3) Clarification Change<br>a. ANSI N45.2.5 Section 4.9.3 commitment states:<br>**4.9.3 Tensile Testing.** Splice samples may be production splices (i.e., those cut directly from in-place reinforcing) or sister splices (i.e., those removable splices made in place next to production splices and under the same conditions). | Modified position is a reduction in commitments. | Modified position is a Quality Assurance alternative approved by a NRC Safety Evaluation that is applicable to the facility. |
| b. Modified commitment to ASME Code, 1995 edition, subparagraph 4333.5.2, states:<br>**CC-4333.5.2 Splice Samples.** Splice samples may be production splices (cut directly from in-place reinforcement) or straight sister splices (removable splices made in place next to production splices and under the same conditions), in accordance with the schedule established in CC-4333.5.3. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (4) Splice Sample Test Frequency<br>a. ANSI N45.2.5 Section 4.9.4 commitment states:<br>**4.9.4 Tensile Test Frequency.** Separate test cycles shall be established for mechanical splices in horizontal, vertical, and diagonal bars, for each bar size and for each splicing crew as follows:<br>2. Test Frequency for Combinations of Production and Sister Splices. If production and sister splices are tested, the sample frequency shall be:<br>(a) One production splice of the first 10 production splices.<br>(b) One production splice and three sister splices for the next 90 production splices.<br>(c) Three splices, either production or sister splices for the next and subsequent units of 100 splices. At least 1/4 of the total number of splices tested shall be production splices. | Modified position is a reduction in commitment. | Modified position is a Quality Assurance alternative approved by a NRC Safety Evaluation that is applicable to the facility. |



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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.94** (continued) — *Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants* - (Rev. 1, 4/76) - Endorses ANSI N45.2.5-1974 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| b. Modified commitment to ASME Code, 1995 edition, subparagraph 4333.5.3, states:<br>**CC-4333.5.3 Testing Frequency.** [A95] Splice samples shall be tensile tested in accordance with the following schedule for the appropriate splice system.<br>(a) Separate test cycle shall be established for sleeve with ferrous filler metal splices, sleeve with cementitious grout splices, and swaged splices in the horizontal, vertical, and diagonal bars. Straight sister splices may be substituted for production test samples on radius bent bars and for splicing sleeves arc welded to structural steel elements or the liner.<br>1) For sleeve with ferrous filler metal splices, one splice shall be tested for each unit of 100 production splices. | | |
| (5) Testing of Sister Splice Samples Only<br>a. ANSI N45.2.5 Section 4.9.4 commitment requires testing of both production and sister splices, as stated in paragraph (4a) above.<br>b. Modified commitment to ASME Code, 1995 edition, subparagraph 4333.5.2, requires testing of either production or sister splices, as stated in paragraph (4b). | Modified position is a reduction in commitments. | Modified position is a Quality Assurance alternative approved by a NRC Safety Evaluation that is applicable to the facility. |





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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.116** — *Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems* - (Rev. 0-R, 6/76) - Endorses ANSI N45.2.8-1975 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| The Operational Quality Assurance Program complies with this guide with the following clarification:<br>See Generic Statement which prefaces this table. | Clarification meets or exceeds applicable guides and standards. | The proposed clarification is proposed as a construction to operations device. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications:<br>(1) With regard to Section 1.3 of ANSI N45.2.13-1976, titled **Definitions**: With two exceptions (Procurement Document and Quality Assurance Program Requirements) definitions in this Standard which are not included in ANSI N45.2.10 will be used; all definitions which are included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74. The two exceptions are defined in Table 17.2-0 under Regulatory Guide 1.74.<br>(2) With regard to Section 1.2.2 of ANSI N45.2.13-1976, titled **Purchaser's Responsibilities**: Item c is modified as follows: "Evaluation of the supplier's QA program shall be conducted as determined by Nuclear Oversight based on the complexity and use of the procurement."<br>(3) With regard to Section 3.1 of ANSI N45.2.13-1976, titled **Procurement Document Preparation, Review and Change Control**: The phrase "the same degree of control" is stipulated to mean "equivalent level of review and approval." The changed document may not always be rereviewed by the originator; however, at least an equivalent level supervisor shall review and approve any changes. | Clarifications meet or exceed applicable guides and standards. | Clarifications contained herein reflect actual Company QA Program practices. Further, these proposals assure continuity with the QA Program and other regulations or guides, and are considered to enhance the aforementioned program. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.123** (continued) — *Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants* - (Rev. 1, 7/77) - Endorses ANSI N45.2.13-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (4) With regard to Section 3.4 of ANSI N45.2.13-1976, titled **Procurement Document Control**: The Company will meet the requirements of Sections 17.2.4 and 17.2.7 of the Operational QA Program in lieu of the requirements specified in this Section. | | |
| (5) With regard to Section 5.3 of ANSI N45.2.13-1976, titled **Preaward Evaluation**: The Company will comply with an alternate paragraph which reads: "Except in unusual circumstances as determined and documented by station management (e.g., replacement parts are needed to preclude the development of some unsafe or undesirable condition at a nuclear facility), and except in those cases where dedication techniques that do not rely on the supplier's QA program are necessary (e.g. the sole use of special tests and inspections to verify the quality of certain commercial grade items where the supplier has no formal QA program), a preaward evaluation of the Supplier shall be performed as required by the Operational QA Program." | | |
| (6) With regard to Section 6.4 of ANSI N45.2.13-1976, titled **Control of Changes in Items of Service**: The phrase "the Operational QA Program" will be inserted in lieu of "ANSI N45.2, Section 7." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.123** (continued) — *Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants* - (Rev. 1, 7/77) - Endorses ANSI N45.2.13-1976 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (7) With regard to Section 8.2 of ANSI N45.2.13-1976, titled **Disposition**: The third sentence of item b is revised to read:<br>Non-conformances to the contractual procurement requirements or Purchaser approved documents and which consist of one or more of the following shall be submitted to the Purchaser for approval of the recommended disposition prior to shipment when the non-conformance could adversely affect the end use of a module or shippable component relative to safety, interchangeability, operability, reliability, integrity, or maintainability:<br>(1) Technical or material requirement is violated;<br>(2) Requirement in Supplier documents, which have been approved by the Purchaser, is violated;<br>(3) Non-conformance cannot be corrected by continuation of the original manufacturing process or by rework; and/or<br>(4) The item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired. | | |
| * A module is an assembled device, instrument, or piece of equipment identified by serial number or other identification code, having been evaluated by inspection and/or test for conformance to procurement requirements regarding end use. A shippable component is a part of a subassembly of a device, instrument, or a piece of equipment which is shipped as an individual item and which has been evaluated by inspection and/or test for conformance to procurement requirements regarding end use. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications:<br>(1) With regard to Section 1.4 of ANSI N45.2.12-1977, titled **Definitions**: With one exception (Program Deficiencies) the definitions in this Standard which are not included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74. The one excepted definition and clarified definition relevant to this standard are defined in Table 17.2-0 under Regulatory Guide 1.74.<br>(2) With regard to Section 2.2 of ANSI N45.2.12-1977, titled **Personnel Qualifications**: The qualification of Company audit personnel will be accomplished as described to meet the requirements of ANSI N45.2.23-1978 as endorsed in Table 17.2-0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program.<br>(3) With regard to Section 2.3 (and subsections 2.3.1 through 2.3.3) of ANSI N45.2.12-1977, titled **Training**: The training of Company audit personnel will be accomplished as described to meet the requirements of ANSI N45.2.23-1978 as endorsed in Table 17.2-0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program.<br>(4) With regard to Section 2.4 of ANSI N45.2.12-1977, titled **Maintenance of Proficiency**: The maintenance of proficiency of the Company audit personnel will be accomplished as described to meet the requirement of ANSI N45.2.23-1978 as endorsed in Table 17.2-0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program. | Clarifications meet or exceed applicable guides and standards. | These clarifications have been proposed to maintain program continuity with other referenced standards and guides committed to in Table 17.2-0.<br>Further, where alternatives have been proposed they reflect Company QA Program practices and are considered to enhance the referenced program<br>Not all standards, guides and regulations can be considered programmatically error-free, therefore, operational experience utilizing these documents and the proposed alternatives must be taken into consideration. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (5) With regard to Section 3.3 of ANSI N45.2.12-1977, titled **Essential Elements of the Audit System**: The Company will comply with subsection 3.6.5 as it was originally written (subsection 3.2.5) in ANSI N45.2.12, Draft 3, Revision 4: "Provisions for reporting on the effectiveness of the Quality Assurance Program to the responsible management." For the auditing organization (The Company), effectiveness is reported as required by the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station. Other than audit reports, the Company may not directly report on the effectiveness of the quality assurance programs to the audited organization when such organizations are outside of the Company.<br><br>Subsection 3.3.6 requirements are considered to be fulfilled by compliance with the organization and reporting measures outlined in the Operational QA Program, the Technical Specifications for Surry Power Station and Appendix C of this topical report for North Anna Power Station.<br><br>Subsection 3.3.7 requires verification of effective corrective action on a "timely basis." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| Timely basis is interpreted to mean within the framework or period of time for completion of corrective action that is accepted by Nuclear Oversight. Each finding requires a response and a corrective action completion date; these dates are subject to revision (with the approval of Nuclear Oversight) and must be escalated to higher authority when there is disagreement between the audited and the auditing organization on what constitutes "timely corrective action." | | |
| (6) With regard to Section 3.5 of ANSI N45.2.12-1977, titled **Scheduling**: Subsection 3.5.3.1 is interpreted to mean that the Company may procedurally review qualification of a contractor's or supplier's quality assurance program prior to awarding a contract or purchase order by means other than audit. | | |
| (7) With regard to Section 4.3.1 of ANSI N45.2.12-1977, titled **Pre-Audit Conference**: The Company will comply with requirements of this Section by inserting the word "Normally" at the beginning of the first sentence. This clarification is required because in the case of certain unannounced audits or audits of a particular operation or work activity, a pre-audit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a pre-audit conference may not always be available. Such lack of availability should not be an impediment to beginning an audit. Even in the above examples, which are not intended to be all inclusive, the material set forth in Section 4.3.1 will normally be covered during the course of the audit. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (8) With regard to Section 4.3.2 of ANSI N45.2.12-1977, titled **Audit Process**:<br>(a) Subsection 4.3.2.2 could be interpreted to limit auditors to the review of only objective evidence; sometimes and for some program elements, no objective evidence may be available or subjective evidence may be more appropriate. The Company will comply with an alternate sentence which reads: "When available, objective evidence shall be examined for compliance with Quality Assurance Program requirements. When subjective evidence is used (e.g., personnel interviews, direct observations by the auditor), then the audit report must indicate how the evidence was obtained."<br>(b) Subsection 4.3.2.4 is modified as follows to take into account the fact that some non-conformances are virtually "obvious" with respect to the needed corrective action:<br>"When a non-conformance or quality assurance program deficiency is identified as a result of an audit, unless the apparent cause, extent and corrective action are readily evident, further investigation shall be conducted by the audited organization in an effort to identify the cause and effect and to determine the extent of the corrective action required." | | |

Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.144** (continued) — Auditing of *Quality Assurance Programs for Nuclear Power Plants* - (Rev. 1, 9/80) - Endorses ANSI N45.2.12-1977 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (c) Subsection 4.3.2.5 contains a recommendation which is clarified with the definition of "acknowledged by a member of the audited organization" to mean that a "member of the audited organization has been informed of the findings." Agreement or disagreement with a finding may be expressed in the response from the audited organization. | | |
| (9) With regard to Section 4.3.3 of ANSI 45.2.12-1977, titled **Post-Audit Conference**: The Company will substitute and comply with the following paragraph: "For all external audits, a post-audit conference shall be held with management of the audited organization to present audit findings and clarify misunderstandings; where no adverse findings exist, this conference may be waived by management of the audited organization: such waiver shall be documented in the audit report.<br><br>Unless unusual operating or maintenance conditions preclude attendance by appropriate managers/supervisors, a post-audit conference shall be held with managers/supervisors for all internal audits for the same reasons as above. Again, if there are no adverse findings, management of the internal audited organization may waive the post-audit conference: such waiver shall be documented in the audit report." | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| (10) With regard to Section 4.4 of ANSI N45.2.12-1977, titled **Reporting**:<br>(a) This Section requires that the audit report shall be signed by the audit team leader; this is not always the most expeditious route to take to assure that the audit report is issued as soon as practical.<br>The Company will comply with Section 4.4 as clarified in the following opening statement: "An audit report, which shall be signed by the audit team leader, the Nuclear Specialist (Audit Coordinator) or his supervisor in his absence, shall provide": In cases where the audit report is not signed by the Audit Team Leader due to his absence, one record copy of the report must be signed by the Audit Team Leader upon his return. The report shall not require the Audit Team Leader's review, concurrence, or signature if the Audit Team Leader is no longer employed by the auditing organization at the time the audit report is issued.<br>(b) The Company will comply with subsection 4.4.3 clarified to read: "Supervisory level personnel with whom significant discussions were held during the course of pre-audit (where conducted), audit, and post-audit (where conducted) activities. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.144** (continued) — Auditing of *Quality Assurance Programs for Nuclear Power Plants* - (Rev. 1, 9/80) - Endorses ANSI N45.2.12-1977 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (c) Subsection 4.4.6 requires audit reports to include recommendations for corrective actions; the Company may choose not to comply with this requirement. Instead, Audit Team Leaders are required to document all adverse findings on audit finding forms.<br><br>The procedure for processing audit findings allows the Audit Team Leader to document actions which are considered necessary to correct the finding; the Audit Team Leader may also document actions which are considered unacceptable for correcting the finding: the audit finding with these "Recommendations" is then transmitted to the audited organization. In addition, the Audit Team Leader is required to review the response to the audit finding and determine if it is acceptable. Any disagreements must be escalated to higher management for resolution. | | |
| (11) With regard to Section 4.5.1 of ANSI N45.2.12-1977, titled **By Audited Organization**: The Company will comply with the following clarification of this Section: "Management of the audited organization or activity shall review and investigate all adverse findings, as necessary, (e.g., where the cause is not already known, another organization has not already investigated and found the cause, etc.) to determine and schedule appropriate corrective action including action to prevent recurrence. They shall respond, in writing, within thirty days after the date of issuance of the audit report. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

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

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The response shall clearly state the corrective action taken or planned to prevent recurrence and the results of the investigation if conducted. In the event that corrective action is not completed by the time the response is submitted, the audited organization's response shall include a scheduled date for completion of planned corrective action.<br><br>The audited organization shall take the appropriate action to assure that corrective action is accomplished as scheduled. | | |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

**Regulatory Guide 1.146** — *Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants* (Rev. 0, 8/80) - Endorses ANSI N45.2.23-1978

| The Company's Position | Conformance Status | Justification |
|---|---|---|
| The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:<br>(1) With respect to Section 1.4 of ANSI N45.2.23-1978, titled **Definitions**: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; "AUDIT" which is included in ANSI N45.2.10 will be used as addressed in the Company's commitment to Regulatory Guide 1.74.<br>(2) With respect to Section 2.2 of ANSI N45.2.23-1978, titled **Qualification of Auditors**: Subsection 2.2.1 references ANSI N45.2 therefore, the Company will comply with an alternate subsection 2.2.1 which reads:<br>Orientation to provide a working knowledge and understanding of the Operational QA Program, including the ANSI standards and Regulatory Guides included in Table 17.2-0 of the Program, and the Company's procedures for implementing audits and reporting results.<br>(3) With respect to Section 2.3 of ANSI N45.2.23-1978, titled **Qualification of Lead Auditors**: Subsection 2.3.3.1 references ANSI N45.2; therefore, the Company will comply with an alternate subsection 2.3.3.1 that reads:<br>Knowledge and understanding of the Operational QA Program, including the ANSI Standards and Regulatory Guides included in Table 17.2-0 of the Program, particularly ANSI N45.2.12 and other nuclear-related codes and regulations, as applicable. | Clarifications and alternatives meet or exceed applicable guides and standards. | The clarifications and alternatives reflect experience gained at operational nuclear facilities and are intended to enhance and provide additional guidance in the areas of auditing as delineated herein. |

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Table 17.2-0 (continued)
STANDARD, REQUIREMENT OR GUIDE

| **Regulatory Guide 1.146** (continued) — *Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants* (Rev. 0, 8/80) - Endorses ANSI N45.2.23-1978 | | |
|---|---|---|
| The Company's Position | Conformance Status | Justification |
| (4) With respect to Section 3.2 of ANSI N45.2.23-1978, titled **Maintenance of Proficiency**: The Company will comply with the requirements of this Section by defining "annual assessment" as one which takes place every 12 months or less and which uses the initial date of certification (not the calendar year) as the starting date for determining when such annual assessment is due. | | |
| (5) With respect to Section 4.1 of ANSI N45.2.23-1978, titled **Organizational Responsibility**: The Company will comply with this Section with the substitution of the following sentence in place of the last sentence in the Section.<br>The Director Nuclear Oversight, Manager Nuclear Oversight, Supervisor Nuclear Quality (Vendor Programs), Nuclear Specialist (Audit Coordinator), or Audit Team Leader shall, prior to commencing the audit, assign personnel who collectively have experience or training commensurate with the scope, complexity, or special nature of activities to be audited. | | |
| (6) With respect to Section 5.3 of ANSI N45.2.23-1978, titled **Updating of Lead Auditor's Records**: The Company will substitute the following sentence for this Section:<br>Records for each Lead Auditor shall be maintained and updated during the period of the annual management assessment as defined in Section 3.2 (as clarified). | | |

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Table 17.2-1
RELATIONSHIP OF THE COMPANY'S OPERATIONAL QUALITY ASSURANCE PROGRAM TO APPENDIX B, 10 CFR 50

| Appendix B 10 CFR 50 Criterion | Topical Report Section | Title | Abstract |
|---|---|---|---|
| I | 17.2.1 | Organization | Defines the relationship of departments to the quality assurance effort associated with the operation of the nuclear power station. |
| II | 17.2.2 | Quality Assurance Program | Defines the Operational Quality Assurance Program, its overall responsibility and provisions. |
| III | 17.2.3 | Design Control | Defines the policy, responsibility and procedures for exercising design control. |
| IV | 17.2.4 | Procurement Document Control | Establishes policy applicable to plant operation and maintenance. |
| V | 17.2.5 | Instructions, Procedures and Drawings | Establishes guidelines for preparing instructions, procedures and drawings. |
| VI | 17.2.6 | Document Control | Establishes policy for the control of procedures and instructions. |
| VII | 17.2.7 | Control of Purchased Material, Equipment and Services | Establishes methods for assuring that purchased items conform to the specified quality requirements. |
| VIII | 17.2.8 | Identification and Control of Material, Parts and Components | Establishes procedures for the identification and control of material, parts and components. |
| IX | 17.2.9 | Control of Special Processes | Establishes procedures which assure that special processes are controlled and accomplished by qualified personnel. |
| X | 17.2.10 | Inspection | Establishes a program for inspection of activities affecting quality. |
| XI | 17.2.11 | Test Control | Establishes policy for power stations test programs. |

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Table 17.2-1 (continued)
RELATIONSHIP OF THE COMPANY'S OPERATIONAL QUALITY ASSURANCE PROGRAM TO APPENDIX B, 10 CFR 50

| Appendix B 10 CFR 50 Criterion | Topical Report Section | Title | Abstract |
|---|---|---|---|
| XII | 17.2.12 | Control of Measuring and Test Equipment | Establishes policy for control and calibration of test and measuring equipment. |
| XIII | 17.2.13 | Handling, Storage and Shipping | Establishes policy for this function as related to material and equipment. |
| XIV | 17.2.14 | Inspection, Test, and Operating Status | Makes reference to appropriate administrative procedures which govern this function. |
| XV | 17.2.15 | Non-Conforming Material, Parts, or Components | Establishes policy for reporting and controlling non-conforming materials, parts, or components. |
| XVI | 17.2.16 | Corrective Action | Establishes policy for identifying, documenting, notifying, determining causes and preventing defects from recurring. |
| XVII | 17.2.17 | Quality Assurance Records | Assures maintenance, identification and retrievability of records. |
| XVIII | 17.2.18 | Audits | Defines policy and procedures for audit programs. |

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Table 17.2-2
RECORDS RETENTION REQUIREMENTS

| Description of Records (Operational Phase Activities) | Retention Period |
|---|---|
| Records and drawing changes reflecting plant design modifications made to systems and equipment described in the final safety analysis report | Lifetime [a (1)] |
| Records of new and spent fuel inventory, transfers of fuel, and assemblies histories | Lifetime [a (1)] plus 3 years |
| Records of plant radiation and contamination surveys | Lifetime [a (1)] |
| Records of off-site environmental monitoring surveys | Lifetime [a (1)] |
| Records of radiation exposure of all plant personnel, and others who enter radiation control areas | Lifetime [a (1)] |
| Records of radioactive levels of liquid and gaseous waste released to the environment | Lifetime [a (1)] |
| Records of transient or operational cycles for those plant components that have been designated to operate safely for a limited number of transients or operational cycles | Lifetime [a (4)] |
| Records of inservice inspections | Lifetime [a (4)] |
| Records of meetings of the Station Nuclear Safety and Operating Committee and the Management Safety Review Committee | Lifetime [a (1)] |
| Records of the service lives of all hydraulic and mechanical snubbers on safety-related systems, including the date at which the service life commences and associated installation and maintenance records | Lifetime [a (4)] |
| Records of secondary water sampling and water quality | Lifetime [a (1)] |
| Records of Environmental Qualification in accordance with 10 CFR 50.49 | Lifetime [a (1)] |
| Records of reviews performed for changes made to the offsite dose calculation manual and the process control program | Lifetime [a (1)] |
| Records of normal plant operation, including power levels and periods of operation at each power level | 5 years |
| Records of principal maintenance activities, including inspection, repair, substitution or replacement of principal items of equipment related to nuclear safety | 5 years |
| Reportable events reports | 5 years |
| Records of periodic checks, inspections, and calibrations performed to verify that surveillance requirements are being met | 5 years |
| Records of special reactor tests or experiments | 5 years |

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Table 17.2-2 (continued)
RECORDS RETENTION REQUIREMENTS

| Description of Records (Operational Phase Activities) | Retention Period |
|---|---|
| Records of changes made in procedures pursuant to 10 CFR 50.59 | 5 years |
| Records of Audits Performed to 10 CFR 50, Appendix B, Quality Assurance Program | 5 years |
| Records of radioactive material shipments | 3 years |
| Records of sealed source leak test results and physical inventories of sealed sources material | 5 years |
| Records of current individual plant staff members qualifications, experience, training and retraining | Lifetime or as noted below |
| • Radiological protection training records (e.g., Nuclear Employee Training, Advanced Radiation Worker, Radiation Protection Technician, etc.) | Lifetime [a (1)] |
| • Initial training and qualification records | Lifetime [a (2)] |
| • Requalification records (excepted licensed individuals) | 3 cycles |
| • Requalification records for licensed individuals | 6 years after license renewal |
| • Training materials - Revision 0 records | Lifetime [a (1)] |
| -- Plant Staff training materials - Superceded Revisions | 3 cycles |
| -- Licensed Operators training materials - Superceded Revisions | 6 years |
| -- Radiation Protection training materials - Superceded Revisions | Lifetime [a (1)] |
| • Retraining, specialized training, continuing training records (except licensed individual and Radiological Protection technicians) | 3 cycles |
| • Contractor training (except Nuclear Employee Training, Advanced Radiation Worker, Radiation Protection Technician training and retraining etc.) | 3 cycles |
| • INPO Accreditation records | Initial accreditations - Lifetime [a (1)] and superceded material - 4 years |

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Table 17.2-2 (continued)
RECORDS RETENTION REQUIREMENTS

| Description of Records (Operational Phase Activities) | Retention Period |
|---|---|
| • Simulator facility records (e.g., certification and basis documents, NRC Form-474, performance test, fidelity reports, maintenance and modifications, and basis documents, etc.) | Initial accreditation records - Lifetime [a (1)] and superceded material - 4 years after submittal of NRC Form-474 |

a. Lifetime - is (1) until the termination of the Facility Operating License, (2) until termination of employment (training and qualification records); (3) transfer of ownership (i.e., fuel); or (4) service life of the facility, system, or component, as applicable.

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# APPENDIX C

# NORTH ANNA POWER STATION

# NUCLEAR SAFETY REVIEW

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A. **Management Safety Review Committee (MSRC) Structure and Responsibilities**

1. **Function**

The MSRC shall function to provide independent review of designated activities in the areas of:

a. Station Operations

b. Maintenance

c. Reactivity Management

d. Engineering

e. Chemistry and Radiochemistry

f. Radiological Safety

g. Quality Assurance Practices

h. Emergency Preparedness

2. Composition

The MSRC shall be composed of the MSRC Chairman and a minimum of four MSRC members. The Chairman and all members of the MSRC shall have qualifications that meet the requirements of Section 4.7 of ANSI/ANS 3.1-1979 Rev. 1 (Draft).

3. **Alternates**

All alternate members shall be appointed in writing by the MSRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in MSRC activities at any one time.

4. **Consultants**

Consultants should be utilized as determined by the MSRC Chairman to provide expert advice to the MSRC.

5. **Meeting Frequency**

The MSRC shall meet at least once per calendar quarter.

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6. **Quorum**

The minimum quorum of the MSRC necessary for the performance of the MSRC review and audit functions shall consist of the Chairman or his designated alternate and at least 50% of the MSRC members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the unit.

7. **Review**

The MSRC shall be responsible for the review of:

a. Safety and Regulatory Review as described in 17.2.1.2.A.1.

b. Proposed changes to procedures, equipment or systems that require a license amendment pursuant to 10 CFR 50.59(c).

c. Proposed tests or experiments that require a license amendment pursuant to 10 CFR 50.59(c).

d. Proposed changes to the Technical Specifications or the Operating License.

e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.

g. Events requiring written notification to the Commission.

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.

i. A representative sample of reports and meeting minutes of the Station Nuclear Safety and Operating Committee (SNSOC).

8. **Audits**

Audits of facility activities shall be performed under the cognizance of the MSRC. These audits shall encompass:

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

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

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c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of 10 CFR 50, Appendix B.

e. Any other area of facility operation considered appropriate by the MSRC or the Senior Vice President Nuclear Operations.

f. The Fire Protection Program and implementing procedures.

g. An independent fire protection and loss prevention inspection and audit shall be performed utilizing an outside qualified fire consultant.

h. The Offsite Dose Calculation Manual and implementing procedures.

i. The Radioactive Waste Process Control Program and implementing procedures.

9. **Authority**

The MSRC shall report to and advise the Senior Vice President - Nuclear Operations and Chief Nuclear Officer on those areas of responsibility specified in Sections A.7 and A.8.

10. **Records**

Records of MSRC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each MSRC meeting shall be prepared, approved and forwarded to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer within 14 days of each meeting.

b. Reports of reviews with safety significant findings encompassed by Section A.7 above, shall be prepared, approved and forwarded to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer within 14 days following completion of the review.

c. Audit reports encompassed by Section A.8 above, shall be prepared, approved and forwarded to the Senior Vice President - Nuclear Operations and Chief Nuclear Officer and to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.

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B. **Station Nuclear Safety and Operating Committee (SNSOC) Structure and Responsibilities**

1. **Function**

The SNSOC shall function to advise the Site Vice President on all matters related to nuclear safety.

2. **Composition**

The SNSOC shall be composed of the:

| | |
|---|---|
| Chairman: | Director Nuclear Station Safety and Licensing |
| Vice Chairman and Member: | Director Nuclear Station Operations and Maintenance |
| Member: | Manager Nuclear Operations |
| Member: | Manager Nuclear Maintenance |
| Member: | Manager Radiological Protection |
| Member: | Manager Nuclear Site Engineering |

3. **Alternates**

All alternate members shall be appointed in writing by the SNSOC Chairman to serve on a temporary basis; however, no more than one alternate shall participate as a voting member in SNSOC activities at any one time.

4. **Meeting Frequency**

The SNSOC shall meet at least once per calendar month and as convened by the SNSOC Chairman or his designated alternate.

5. **Quorum**

A quorum of the SNSOC shall consist of the Chairman or Vice Chairman and two members including alternates.

6. **Responsibilities**

The SNSOC shall be responsible for:

a. Review and approval of (1) all new procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, (2) all procedure changes that require a regulatory evaluation, (3) the Primary Coolant Sources Outside Containment Program and changes thereto, (4) the In-Plant Radiation Monitoring Program and changes thereto, (5) the Secondary Water Chemistry Program and changes thereto, (6) the Radioactive Effluent Controls Program

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and changes thereto, (7) the Radiological Environmental Monitoring Program and changes thereto, (8) the Configuration Risk Management Program and changes thereto, and (9) any other procedures and changes thereto affecting nuclear safety as determined by the Site Vice President.

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

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

d. Review of proposed changes to Facility Operating License Appendix A, Technical Specifications, and Appendix B, Environmental Protection Plan. Recommended changes shall be submitted to the Site Vice President.

e. Investigation of all violations of the Technical Specifications, including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Senior Vice President Nuclear Operations and to the MSRC.

f. Review all Reportable Events and Special Reports.

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

h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Chairman of the SNSOC or Site Vice President.

i. Review of every unplanned onsite release of radioactive material to the environs including the preparation of reports covering evaluation, recommendations and disposition of the corrective action to prevent recurrence and the forwarding of these reports to the Senior Vice President Nuclear Operations and to the MSRC.

j. Review of changes to the Offsite Dose Calculation Manual.

k. Review of the Fire Protection Program and implementing procedures and shall submit recommend changes to the Site Vice President.

7. **Authority**

The SNSOC shall:

a. Provide written approval or disapproval of items considered under Section 6.a through 6.c above. SNSOC approval shall be certified in writing by the Director Nuclear Station Safety and Licensing or the Director Nuclear Station Operations and Maintenance.

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b. Render determinations in writing with regard to whether or not each item considered under Section 6.a through 6.e above constitutes a need to request a License Amendment.

c. Provide written notification within 24 hours to the Senior Vice President Nuclear Operations and to the MSRC of disagreement between the SNSOC and the Site Vice President; however, the Site Vice President shall have responsibility for resolution of such disagreement.

8. **Records**

The SNSOC shall maintain written minutes of each meeting and copies shall be provided to the Site Vice President, Senior Vice President Nuclear Operations, and the MSRC.

C. **Station Nuclear Safety (SNS) Structure and Responsibilities**

a. **Function**

SNS shall function to examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources which may indicate areas for improving plant safety.

b. **Composition**

SNS shall be composed of at least five dedicated, full-time engineers located onsite.

c. **Responsibilities**

SNS shall be responsible for maintaining surveillance of plant activities to provide independent verification, not including responsibility for sign off functions, that these activities are performed correctly and that human errors are reduced as much as practical.

SNS shall disseminate relevant operational experience.

d. **Authority**

SNS shall make detailed recommendations for revised procedures, equipment modifications, or other means of improving plant safety to the Director Nuclear Station Safety and Licensing.

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