Chapter 17 Table of Contents

Chapter 17 Quality Assurance

17.1 ESP Quality Assurance

Quality Assurance applied to safety-related activities performed prior to start of construction (i.e., site investigation, and design and safety analysis) is described in the Exelon Nuclear Quality Assurance Topical Report (QATR) (Reference 17.1-1) for the Exelon operating nuclear plants as supplemented by ESP project procedures. In accordance with 10 CFR 52.17(a)(1)(xi), the VCS ESP Quality Assurance Program Description (QAPD) to be applied to site-related activities for the future design, fabrication, construction and testing of the structures, systems, and components of a facility or facilities that may be constructed on the VCS site, is included in Appendix 17A. This document is a separately controlled document and therefore, does not conform to the ESP application formatting.

17.1.1 References

17.1-1 NO-AA-10, Exelon Nuclear Quality Assurance Topical Report

Appendix 17A

Victoria County Station, Quality Assurance Program Description

(49 pages)

Exelon Generation

Victoria County Station, Quality Assurance Program Description

Title: Quality Assurance Program Description

Document Number	Revision Number:	Effective Date
NO-AA-15	**0**	**Effective date and approvals on file**

Revision Summary

Initial Issue – Defines the Quality Assurance measures to be applied to the site-related activities associated with the future design, fabrication, construction, and testing of the structures, systems, and components of a facility or facilities that may be constructed on the Victoria County Station site. It does not address any operational activities. This document generally incorporates the text from NEI 06-14A, Revision 7 with Exelon Nuclear Texas Holdings, LLC and Victoria County Station specific information added where appropriate.

Approved By/Date:

_____/_____
Vice President, Nuclear Oversight or designee

Victoria County Station

POLICY STATEMENT – Quality Assurance during Construction

Exelon Nuclear Texas Holdings, LLC (Exelon) shall design, procure, and construct Victoria County Station (VCS), in a manner that will ensure the health and safety of the public and workers. These activities shall be performed in compliance with the requirements of the Code of Federal Regulations (CFR), the applicable Nuclear Regulatory Commission (NRC) Facility Construction Permits/Licenses, and applicable laws and regulations of the state and local governments.

The Exelon VCS Quality Assurance Program (QAP) is the Quality Assurance Program Description (QAPD) provided in this document and the associated implementing documents. Together they provide for control of VCS activities that affect the quality of safety-related nuclear plant structures, systems, and components and include all planned and systematic activities necessary to provide adequate confidence that such structures, systems, and components will perform satisfactorily in service. The QAPD may also be applied to certain equipment and activities that are not safety-related, but support safe plant operations, or where other NRC guidance establishes program requirements.

The QAPD is the top-level policy document that establishes the manner in which quality is to be achieved and presents an overall philosophy regarding achievement and assurance of quality. Implementing documents assign more detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the QAP. Compliance with the QAPD and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the VCS QAP.

Signed,

Christopher M. Crane
President Exelon
Chief Operating Officer Exelon Generation
[Date]

TABLE OF CONTENTS

PART I INTRODUCTION

SECTION 1 GENERAL

The Exelon Victoria County Station (VCS), Quality Assurance Program Description (QAPD) is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for Early Site Permit (ESP) activities conducted by or for VCS. The QAPD describes the methods and establishes Quality Assurance (QA) and administrative control requirements that meet 10 CFR 50, Appendix B and 10 CFR 52, and recommendations of ASME NQA-1. The QAPD is based on the requirements of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I and II, as specified in this document.

The QAPD is defined by the NRC-approved regulatory document that describes the QA elements (i.e., the QAPD), along with the associated implementing documents. Procedures and instructions that control VCS activities will be developed prior to commencement of those activities. VCS policies establish high-level responsibilities and authority for carrying out important administrative functions which are outside the scope of the QAPD. Procedures establish practices for certain activities which are common to all VCS organizations performing those activities such that the activity is controlled and carried out in a manner that meets QAPD requirements. Site or organization specific procedures establish detailed implementation requirements and methods, and may be used to implement Policies or be unique to particular functions or work activities.

1.1 Scope/Applicability

This QAPD applies to ESP and any subsequent activities related to the design and/or construction activities affecting the quality and performance of safety-related structures, systems, and components, including, but not limited to:

Designing	Handling	Startup	Storing
Constructing	Testing	Siting	Erecting
Procuring	Inspecting	Shipping	Installing
Fabricating	Modifying	Maintaining	Repairing
Cleaning	Licensing	Receiving	Training

Safety-related systems, structures, and components (SSC), under the control of the QAPD, are identified by design documents. The technical aspects of these items are considered when determining program applicability, including, as appropriate, the item's design safety function. The QAPD may be applied to certain activities where regulations other than 10 CFR 50 and 10 CFR 52 establish QA requirements for activities within their scope.

The policy of Exelon is to assure a high degree of availability and reliability of its nuclear plants while ensuring the health and safety of its workers and the public. To this end, selected elements of the QAPD are also applied to certain equipment and activities that are not safety-related, but support safe, economic, and reliable plant operations, or where other NRC guidance establishes quality assurance requirements. Implementing documents establish program element applicability.

The definitions provided in ASME NQA-1, 1994 Part I, Section 1.4 apply to select terms as used in this document.

PART II QAPD DETAILS

SECTION 1 ORGANIZATION

This Section describes the Exelon and VCS organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation. The organizational structure includes corporate support and on-site functions for the VCS including interface responsibilities for multiple organizations performing quality-related functions. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of this QAPD. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

Some positions and organizations such as those related to construction or testing will only be implemented if necessary based on the scope of the project.

VCS management is responsible to size the Quality Assurance (Nuclear Oversight) organization commensurate with the duties and responsibilities assigned.

The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting the VCS QA Program. Titles used therein are generic functional descriptions; administrative documents are maintained to relate the generic titles to the Exelon and VCS specific titles.

1.1 Corporate Organization

1.1.1 Chairman and Chief Executive Officer

The Chairman and Chief Executive Officer (CEO), Exelon Corporation, is responsible for overall corporate policy and provides executive direction and guidance for the corporation as well as promulgates corporate policy through the Company 's senior management staff.

1.1.2 President, Exelon Generation Company, Exelon Corporation

The President, Exelon Generation, is responsible for Exelon Generation policy and provides executive direction and guidance for Exelon Generation as well as promulgates corporate policy through Exelon Generation senior management staff.

1.1.3 Senior Vice President and Chief Nuclear Officer, Exelon Nuclear

The Senior Vice President and Chief Nuclear Officer (CNO) reports to the President of Exelon Generation and has overall responsibility for the safe and reliable operation of the Company's nuclear stations. This is the senior executive responsible for setting and implementing policies, objectives, expectations, and priorities to ensure activities are performed in accordance with the QAP and other requirements. The following management positions and committees report to and/or receive direction from the CNO with respect to their assigned roles and responsibilities associated with the execution of the Exelon Nuclear Quality Assurance Program:

1. The Chief Operating Officer (COO) is responsible to provide management oversight and support of the day-to-day operations of the stations for the safe and efficient operation of the nuclear fleet in compliance with the QAP. The COO is responsible for planning, organizing, and directing and controlling the operations, maintenance and improvement of the nuclear facilities. This position participates in the formulation of nuclear group strategy and policy, and provides leadership and direction to implement industry best practices. The following management positions report to the COO:

    - A management position responsible for MidWest operations provides management oversight and support of the day-to-day operations of the MidWest stations, which includes VCS . This position implements policies, goals, and objectives, in accordance with the QAP and other requirements, to assure the safe and reliable operation of the MidWest nuclear stations This position participates in the formulation of nuclear group strategy and policy, and provides leadership and direction to implement industry best practices.

    - A management position for operations support that is accountable for defining standard programs and processes, delivering effective services and support, providing technical oversight of program implementation, and supporting the deployment and sharing of best practices throughout the nuclear organization in accordance with the QAP and other requirements, as applicable. Other responsibilities include providing overall direction and management oversight for environmental issues. Reporting to this position is a staff of management, administrative, and technical personnel. Functional areas of responsibilities include:

        - Outages, training, security, chemistry, industrial safety, maintenance and work control, operations, radiation protection, radioactive waste, fuel handling, emergency planning.

        - Information technology is no longer a functional area exclusively within the nuclear organizational structure but now supports the entire Exelon Corporation. The management position responsible for operations support will supply oversight and governance for the functional area of information systems as it applies to Exelon Nuclear. The oversight and governance of this functional area is performed to ensure that organizational and functional responsibilities and the reporting relationship to the management position responsible for all nuclear activities, the CNO, is maintained within the requirements stated within the QAPD. This includes all regulatory requirements committed to by the QAPD. Specifically, the management position responsible for operations support supplies oversight and governance for management and supervision of information systems related services and activities including the software quality assurance program (DTSQA). This includes the creation, acquisition, and enhancement of computer hardware, communication, and software systems to support operational requirements.

        - Laboratory services for implementing metrology related programs including calibration and maintenance of measuring and test equipment, technical services.

2. The management position responsible for engineering and technical services provides oversight and support and is accountable for defining standard programs, processes,

policies, procedures, delivering effective services and support, providing technical oversight of program implementation, and supporting the deployment and sharing of best practices throughout the nuclear organization in accordance with the QAP, regulatory requirements, and the ASME Code. Reporting to this position is a staff of management, administrative, and technical personnel. Functional areas of responsibility include:

- Engineering that provides support to the nuclear stations, design authority under the ASME Code, configuration management programs, special processes, and generic programs for technical and regulatory issues. A support staff provides the necessary discipline and expert support for setting technical policy, developing design standards, and performing engineering discipline reviews. This staff develops and supports common approaches for technical and regulatory engineering issues, as well as develops and coaches engineers. Corporate procurement engineering provides overall coordination and guidance of the nuclear organization's procurement engineering process and technical operations. This includes parts evaluation, upgrading of stock material, equivalent item evaluation, and examination and testing in accordance with the applicable ASME Code and Federal Regulations.

- Nuclear fuels management providing BWR/PWR nuclear fuel procurement and fabrication services, technical support to monitor fuel reliability and certain in-core components, design and licensing analyses for core reloads, safety analyses, and high level waste strategy. This position is responsible for reactivity management oversight and corporate support of reactor operations to ensure safe and reliable plant operations, as the manager of nuclear materials, and for controls and reports associated with special nuclear material accountability.

- Project management.

- Decommissioning activities that include the safe storage and handling of irradiated spent nuclear fuel including operations and maintenance.

3. The management position responsible for Nuclear Oversight (NOS) activities is independent of production and assures that an appropriate QAP is established, maintained, and effectively executed throughout the nuclear organization. This position provides overall direction for the implementation of the QAP and for the effective implementation of quality assurance functions that verify activities affecting safety-related functions. A staff of supervisory, administrative, and technical personnel supports assessment and quality verification. Functional responsibilities include:

    - Employee concern program activities.

    - Establishing quality assurance practices and policies.

    - Independent assessment and quality verification activities.

    - Initiating stop work, ordering unit shutdown, or request any other actions deemed necessary to avoid unsafe plant conditions or a significant violation of the QAP.

- Initiating, trending, and recommending solutions for deficiencies identified by NOS.

- Maintaining a trained and qualified staff of personnel within the NOS organization.

- Maintenance and approval of revisions to the Quality Assurance Program Description (QAPD) and the program for employee concerns.

- Overseeing nuclear site NOS activities.

- Participation in joint membership groups.

- Periodic assessments to determine that the Quality Assurance Policy is being carried out.

- Periodic review of the independent assessment program.

- Periodically apprising the President, CNO and Nuclear Safety Review Board of the status of the quality assurance aspects at Company facilities and immediately apprising them of significant problems affecting quality.

- Settling disputes between NOS and other organizations.

- The certifying authority for NOS assessment personnel.

- The internal assessment program.

- The management assessment program.

- Verifying implementation of solutions for significant conditions adverse to quality identified by NOS.

- Reporting to the management position responsible for NOS is a management position responsible for performance assessment activities at the sites. This position is responsible to prioritize and communicate common quality issues to appropriate senior management including the resolution of these issues. A position responsible for implementation of site level NOS activities reports through this management position.

- Also reporting to the management position responsible for NOS is a management position responsible for auditing and programs. Functional areas of responsibility include:

    - Maintaining the regulatory required compliance auditing program.

    - Managing the conduct of supplier assessments, audits, or surveys (including their sub-tier suppliers) as required. Verifies that supplier quality assurance programs comply with Company requirements and has the authority and responsibility for QA activities applicable to supplier evaluation including, stop work as deemed necessary when a violation of the QAP is identified.

- Establishing, maintaining, and interpreting Company quality assurance policies and procedures.

- Providing training on quality assurance subjects.

- Establishing the requirements for assessment/auditor and inspector certification.

- Controlling and maintaining the QAPD.

- Providing an offsite point of contact for station Quality Verification personnel if assistance is necessary for quality verification activities.

- Managing implementation of the program for employee concerns.

4. A management position responsible for licensing and regulatory affairs provides organizational support and management oversight of the stations to ensure prompt and proper disposition of regulatory issues, develops regulatory positions and advises senior management on priorities and activities affecting regulatory issues at the nuclear sites. Other responsibilities include developing policies and standardized processes and procedures for the maintenance of the licensing basis, the preparation of submittals to the NRC and other regulatory organizations, the dissemination of regulatory and operational experience information, NSRB, and the administration of the Corrective Action Program, periodically conducting an independent effectiveness review of NSRB activities (not to exceed 2 years).

5. The Nuclear Safety Review Board (NSRB) is an offsite committee that reports to and advises the President and CNO of the results of their independent oversight of plant operations related to safe operation of the station and the Company's nuclear program relative to nuclear safety. The NSRB is responsible for the independent safety review function and functions in accordance with written procedures and instructions which delineates committee composition, responsibility, authority, member qualifications, meeting frequency, subjects to be reviewed, reporting requirements, and administrative controls under which the board operates. The NSRB:

   - Conducts independent reviews of station performance and operations to determine if the facility is being operated and maintained in a manner that promotes safety and provides feedback to the organization on suggested improvements.

   - Focuses primarily in the areas of Operations, Maintenance, Engineering, Plant Support, Regulatory and Nuclear Oversight, or other matters relating to safety.

   - Reviews station materials and activities and advises the CNO and management responsible for NOS on the following activities:

     - Any issue potentially affecting the safe operation of the facility.

     - Station nuclear safety performance determined by discussion and interviews with station and Exelon Nuclear individuals, plant tours, oversight of meetings, and review of documents distributed for NSRB review.

- Effectiveness of the station program for oversight including audits, assessments, and self-assessments.

- Corrective actions for degraded or non-conforming conditions involving violations of the NRC license requirements, plant transients or forced shutdowns, or the submission of a Licensee Event Report (LER).

- Oversight of activities of the on-site safety review function.

6. The management position responsible for business operations provides integrated support to senior management and the nuclear sites for all business functions. Reporting to this position is a staff of supervisory, administrative, and technical personnel. Functional areas of responsibility include:

   - Business planning and process improvement.

   - Records management.

   - Supply supports the entire Exelon Corporation. The management position responsible for business operations will supply oversight and governance for the functional area of supply as it applies to Exelon Nuclear. The oversight and governance of this functional area is performed to ensure that organizational and functional responsibilities and the reporting relationship to the management position responsible for all nuclear activities, the CNO, is maintained within the requirements stated within the QAPD. This includes all regulatory requirements committed to by the QAPD. The management position responsible for business operations supplies oversight and governance for:

     - The Exelon Nuclear supply function including the establishment of priorities and providing operational control of the purchase of non-fuel goods and services required for nuclear operations. This organization is also responsible for the areas of material procurement, services procurement, supply programs, inventory management, and investment recovery. Supply establishes policies, common administrative controls and processes to ensure compliance with applicable requirements and effective use of resources.

1.1.4 Senior Vice President New Business Development, Exelon Generation

The Senior Vice President New Business Development reports to the**,** EVP, Development, Exelon Corp., Exelon Business Services Co., LLC and is responsible for implementing the QAP requirements for activities involved with new nuclear plant engineering, design, procurement, construction, startup and operational development activities. These responsibilities include establishing appropriate interface controls with agents and contractors and the operating units.

1.2 Operational Phase Site Organization

While operations activities are not covered by this QAPD some portion of the operations organization may be implemented during the construction phase of the project thus the organizational makeup and alignment is included herein.

A management position for VCS reports through the applicable management position responsible for the MidWest operating group and is responsible for overall plant nuclear safety

and the implementation of the Company's QAP. This position is also responsible for the station compliance with its NRC operating license, governmental regulations, and ASME Code requirements. Day to-day direction and management oversight of activities associated with the safe and reliable operation of a nuclear station is provided. While some of these positions may be filled during the construction phase many will not be staffed until the plant nears the operations phase. The following site management positions report to this position:

- The management position responsible for plant operations.
- The management position for engineering and design.
- The management position responsible for regulatory assurance.
- The management position responsible for training.
- The management position(s) responsible for project management.
- The management position responsible for business operations and planning.
    - Responsible for document control and quality assurance records management.
- The management position responsible for security.

1.2.1 The management position responsible for plant operations assures the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements, operating license, and the QAP. Supervisory direction is provided for the Technical Review Program, including approval of individuals as technical reviewers, and the Independent Review Committee (IRC). During periods that exceed three months, when unavailable, responsibility is designated in writing to an established alternate who satisfies the experience requirements of this position. Functional areas of responsibility include:

- Management position(s) for maintenance are responsible for the performance of corrective, predictive and preventive maintenance, cleanliness controls and modification installation of mechanical and electrical equipment and instrumentation in accordance with the QAP and other requirements. A staff of supervisory, technical, administrative, and contract personnel supports day-to-day maintenance of equipment within their functional area.
- Management position(s) responsible for control of work coordinate, administer, execute, and monitor daily and outage work schedules. This position is also responsible for material management and site supply, which coordinates parts requirements, specifies and evaluates parts, procures all materials for the site, ships and receives material, and controls the onsite inventory. The site supply chain provides and coordinates scope and priority for station procurement engineering efforts.
- Chemistry activities, laboratory and system processes, related procedures and programs, including:
    - Environmental services.

- Radioactive waste.
- Radiological environmental monitoring.

- Health physics/radiological protection.
- Operations and support including:
  - A management position responsible for safe, reliable, and efficient plant operations within the constraints of the operating license and regulatory requirements. This position is also responsible for the development and implementation of appropriate controls in accordance with the QAP and other requirements.
  - Management position(s) responsible for operations shift crews and administration, direction and supervision of operating staff. This position is also responsible for routine plant operations activities and evolutions that are performed within the constraints of the operating license, the QAP, and other requirements. Typically this position is the senior individual on site who holds a Senior Reactor Operator license.
  - Management position(s) responsible for the day-to-day operation of the nuclear unit(s) including reactor engineering and overall command and control of shift activities including operations of the radioactive waste system.
  - Management position(s) responsible for supervision for control of work and of the plant and field supervision that coordinates and/or assists in the control of shift operations. This position directs control room personnel, field operations, has the primary responsibility for authorizing removal and restoration of systems to support maintenance activities and holds a Senior Reactor Operator License.
  - A management position responsible for advisory technical support to shift management in the areas of thermal hydraulics, reactor engineering and plant analysis with regards to the safe operations of the facility. In addition, this position shall meet the qualifications as specified by the NRC.

1.2.2 The management position for engineering and design has the responsibility and authority for day-to-day engineering support activities, develops and maintains engineering programs, policies, procedures, and provides engineering services in accordance with the QAP. A staff of supervisory, technical, and administrative personnel supports maintenance activities. Functional areas of responsibility include:

- Design engineering.
- Engineering administration.
- Modifications and their implementation.
- Plant configuration control.

- System engineering.
- System testing.
- Technical support.

1.2.3 The management position responsible for regulatory assurance maintains an interface and liaison between the station and federal and state regulators and is also responsible for the overall administration of the station's corrective action program and associated activities. Functional responsibilities include:

- Emergency preparedness.

1.2.4 The management position responsible for training provides direction, control, and overall supervision of personnel as required by regulations and training for all site personnel as required. Functional areas of responsibility include:

- Learning services.
- Maintenance technical training.
- Operations training.

1.2.5 The Independent Review Committee (IRC) is a multi-disciplined committee responsible for review of activities that affect nuclear safety and, reports to, and advises the management position responsible for plant operation on matters related to nuclear safety. The IRC shall ensure that plant activities are conducted safely and do not require NRC review and approval prior to implementation or changes to the Technical Specifications. The IRC functions in accordance with written instructions which delineate committee composition, responsibility, authority, member qualifications, meeting frequency, subjects to be reviewed, reporting requirements, and administrative controls under which the group operates.

In discharging its independent review responsibilities, IRC shall keep safety considerations paramount when opposed to cost or schedule considerations. Should a voting member have direct responsibility for preparation or technical review of the item requiring IRC independent review, where conflict of such considerations is likely, that member shall be replaced (to fill the quorum) by another voting member not having such potential conflict.

1.2.6 The management position responsible for site NOS activities reports to the management position responsible for NOS through the NOS management position responsible for performance assessment. This position has the organizational freedom and authority to identify problems, has a reporting relationship with the senior management position responsible for overall plant nuclear safety, and ensures compliance with QAP and nuclear safety requirements. Significant safety or quality issues requiring escalated action will be directed through the management position responsible for NOS to the President and CNO. Functional responsibilities include:

- Authority and responsibility to escalate matters.

- Approving the agenda, checklist, findings, and report of each assessment.
- Conducting independent assessments of line and support activities and safety reviews.
- Identify changes to the quality assurance program.
- Initiate, trend and recommend solutions for deficiencies identified by NOS.
- Maintain a suitably trained and qualified staff.
- Monitoring day-to-day station activities.
- Provide NOS management periodic reports on the status and adequacy of the QAP.
- Quality verification inspections.
- Promptly communicate significant issues to NOS and appropriate site management.
- Stop work or request any other actions to avoid unsafe plant conditions.

1.2.7 The Company uses a three-tiered approach to accomplish the oversight of safety which is:

- A collection of program elements for implementing and/or reviewing areas of quality of plant operations and nuclear safety. These elements include system performance monitoring, review of operating experience information, operability evaluations, and reviews of changes to technical specifications and final safety analysis reports that affect design bases. Specific guidance is contained in applicable procedures and programs.
- A NOS staff that assesses and performs quality verification inspection aspects of Company activities within the scope of the QAPD relating to safety. This provides for an overview of activities affecting or potentially affecting safety.
- A NSRB which is an off-site committee that reports to and advises the President and Chief Nuclear Officer, Exelon Nuclear, of the results of independent oversight of plant operation relative to nuclear safety.

1.3 Construction/Pre-operational Testing Phase Site Organization

The Vice President Project Build for VCS reports through the Exelon Chief Operating Officer and is responsible for overall plant construction, pre-operational testing, nuclear safety and the implementation of the Company's QAP. This position is also responsible for the station compliance with its NRC Combined license through unit fuel load. Day- to-day direction and management oversight of activities associated with the safe and reliable construction and pre-operational testing of a nuclear station is provided. Upon transition to the operations phase (not addressed in this QAPD) this position is

eliminated, and the responsibilities of the Vice President Project Build will be performed by the Chief Nuclear Officer (CNO).

The following management positions report to the Vice President Project Build:

- The management position responsible for plant operation readiness and transition manager.
- The management position responsible for engineering and design.
- The management position responsible for licensing.
- The management position responsible for project startup management.
- The management position responsible for construction.
- The management position responsible for project scheduling and cost control.
- The management position responsible for nuclear oversight (direct report to Vice President, Nuclear Oversight).

1.3.1 Plant Operation Readiness and Transition Manager

The Plant Operation Readiness and Transition Manager reports to the Vice President Project Build and is responsible for activities related to the preparation for operation and maintenance of VCS. To improve operational experience, operations and technical staff are used as support in conducting the test program and in reviewing test results. The Plant Operation Readiness and Transition Manager's responsibilities include:

- Developing and implementing Staff Recruiting and Training Programs,
- Performing preoperational and startup testing and reviewing test results,
- Providing plant-specific training instruction on the administrative controls of the test program,
- Interfacing with the Project Startup Manager to conduct testing of plant equipment, and
- Receiving plant equipment from the Project Construction Manager and maintaining that equipment thereafter.

1.3.2 Project Engineering Manager

The Project Engineering Manager reports to the Vice President Project Build and is responsible for activities involved with the engineering, and design of VCS. This position is also responsible for the oversight of design changes, configuration management and site specific design of support systems outside the reactor and turbine islands. The Project Engineering Manager’s responsibilities include:

- Ensuring appropriate design requirements are included in procurement documentation,
- Preparing, issuing, and reviewing applicable technical specifications, instructions, procedures, and drawings,
- Interfacing with the contractor design engineers and the Owners Engineer (OE) for site specific design activities,
- Ensuring suppliers develop, control, and distribute fabrication drawings in accordance with applicable codes and regulatory requirements,
- Ensuring inspection and test activities performed by suppliers are consistent with technical and regulatory requirements, and
- Maintaining Configuration Management and reviewing design documentation.

- Document Control and issuance.

1.3.3 Project Licensing Manager

The Project Licensing Manager reports to the Vice President Project Build and is responsible for implementing quality program requirements applicable to activities associated with licensing, independent oversight, and for interfacing with the Nuclear Regulatory Commission. The Project Licensing Manager's responsibilities include:

- Providing licensing support for issuance of the ESP,
- Ensuring the Independent Review Committee are performed,
- Maintaining and updating the FSAR and ER,
- Managing Commitments and License Conditions,
- Providing oversight of security program,
- Implementing and environmental protection program,
- Implementing the corrective action program, and
- Stopping work pending problem resolution.

1.3.4 Project Startup Manager

The Project Startup Manager reports directly to the Vice President Project Build and is responsible for the activities required to transition the unit from the construction phase to the operational phase. This position is also responsible for ensuring smooth interface between construction organization and the testing organization(s). The Project Startup Manager's responsibilities include:

- Turning over systems from construction for testing,
- Over-viewing preoperational testing,
- Managing the start-up schedule,
- Turning over systems to plant staff for operation.

1.3.5 Project Construction Manager

The Project Construction Manager reports directly to the Vice President Project Build and is responsible for interfacing with the Engineering, Procurement and Construction (EPC) contractor for constructing, fabricating, erecting, installing, and modifying structures, systems and components. This position is also responsible for receipt, storage, and retrieval of documents and Quality Assurance Records. The Project Construction Manager's responsibilities include:

- Constructing site specific buildings and systems,
- Providing oversight of the EPC Contractor, including turbine and reactor island construction,
- Closure of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC),
- Receiving and controlling Quality Records.

1.3.6 Project Scheduling and Cost Control Manager

The Project Scheduling and Cost Control Manager reports directly to the Vice President Project Build and is responsible for procurement, cost reporting and invoice processing. The Project Scheduling and Cost Control Manager's responsibilities include:

- Procuring materials, services and equipment,
- Processing payment requests for invoices,
- Performing cost integration and reporting.

1.3.7 Quality Assurance Manager

The Quality Assurance Manager reports directly to the Vice President Nuclear Oversight and indirectly to the Vice President Project Build. In addition the Quality Assurance Manager has unfettered access to the President and COO Exelon Generation, and is responsible for ensuring the QAP is appropriately implemented and maintained. This position also has the authority and organizational freedom to conduct quality activities without undue pressure of cost or schedule. The Quality Assurance Manager's responsibilities include:

- Developing, maintaining, and independently verifying implementation of the QAP; making periodic reports on its effectiveness; reviewing selected documents which control activities within its scope,
- Reviewing the QAPD and revisions thereto,
- Verifying completion of corrective actions to quality problems.
- Monitoring activities and verifying the effectiveness of the QAP by means of an audit program, and reporting audit results,
- Implementing the Employee Concerns Program,
- Providing oversight of suppliers' quality assurance program to ensure all appropriate controls are in place,
- Monitoring suppliers for compliance with material and service requirements,
- Reviewing and approving applicable construction documents and changes thereto,
- Approving and maintaining the list of approved suppliers, and
- Stopping work pending problem resolution.

1.4 Agents and Contractors

The specific plant design of VCS for the ESP application has not been decided. For the construction phase of VCS an EPC contract will be established that identifies the design of choice as well as the Engineer and Constructor for the units. This contract shall extend the quality program requirements described in this document to all applicable suppliers, contractors and subcontractors. The executive for new plant construction is responsible for implementation of the QAP requirements of this document assigned to the EPC contractor and subcontractors.

1.5 Authority to Stop Work

Quality assurance and inspection personnel 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 SSC integrity may be jeopardized. This extends to off-site work performed by suppliers furnishing safety-related materials and services to VCS.

1.6 Quality Assurance Organizational Independence

For the ESP activities and construction, independence shall be maintained between the organization or organizations performing the checking (quality assurance and control)

functions and the organizations performing the functions. This provision is not applicable to design review/verification.

1.7 NQA-1-1994 Commitment

In establishing its organizational structure, VCS commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1.

SECTION 2 QUALITY ASSURANCE PROGRAM

The VCS has established the necessary measures and governing procedures to implement the QA Program (QAP) as described in the QAPD. VCS is committed to implementing the QAP in all aspects of work that are important to the safety of the nuclear units as described and to the extent delineated in this QAPD. Further, VCS ensures through the systematic process described herein that its suppliers of safety-related equipment or services meet the applicable requirements of 10 CFR 50, Appendix B. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the QAP through the audit functions described in the Audit Section of this QAPD.

The objective of the QAPD is to assure that Victoria County Station nuclear generating units are designed and constructed in accordance with governing regulations and license requirements. The program is based on the requirements of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," as further described in this document. The QAP applies to those quality-related activities that involve the functions of safety-related structures, systems, and components (SSCs) associated with the design, fabrication, testing, licensing, and construction of new nuclear power units. Examples of ESP program safety-related activities include, but are not limited to, site specific engineering related to safety-related SSCs, site geotechnical investigations, certain site engineering analysis, seismic analysis, and meteorological analysis. A list or system identifying SSCs and activities to which this program applies will be maintained at the appropriate facility. The applicable Design Certification Documents will be used as the basis for this list. Cost and scheduling functions do not prevent proper implementation of the QAPD.

Delegated responsibilities may be performed under a supplier's or principal contractor's QAPD, provided that the supplier or principle contractor has been approved as a supplier in accordance with the QAPD. Periodic audits and assessments of supplier QA programs are performed to assure compliance with the supplier's or principle contractor's QAPD and implementing procedures. In addition, routine interfaces with the supplier’s personnel provide added assurance that quality expectations are met.

New nuclear plant preconstruction will be the responsibility of the VCS organization. Detailed engineering specifications and construction procedures will be developed to implement the QAPD and supplier QA programs prior to commencement of construction related activities.

In general, the program requirements specified herein are detailed in implementing procedures that are either Exelon implementing procedures, or supplier implementing procedures governed by a supplier quality program.

A grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90 day general period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early. Audits schedules are based on the month in which the audit starts.

2.1 Responsibilities

Personnel who work directly or indirectly for VCS are responsible for the achievement of acceptable quality in the work covered by this QAPD. This includes those activities delineated in Part I, Section 1.1 of this QAPD. Exelon personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the QAPD are performed as directed by documented instructions, procedures and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The VCS Quality Assurance Manager is responsible to verify that processes and procedures comply with QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

2.2 Delegation of Work

VCS retains and exercises the responsibility for the scope and implementation of an effective QAP. Positions identified in the Organization Section of this QAPD may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate for its nature and effect, and with any necessary technical advice or review.

2.3 ESP Identification of Site Specific Safety-Related Design Basis Activities

The development of the Exelon Victoria County Station ESP application involves site testing, data collection and calculations that may create or bound safety-related design basis data. Site testing and data collection of information pertaining to the physical characteristics of the site that have the potential to affect safety-related design will be considered safety-related. In addition, calculations and other engineering data that bounds or characterizes the site are classified as safety-related. The Exelon Victoria County Station ESP application was developed by procedurally and/or contractually imposing appropriate quality requirements on those sections of the ESP where the content derives and/or supports safety-related design basis activities.

2.4 Periodic Review of the Quality Assurance Program

Management of those organizations implementing the QA program or portions thereof assess the adequacy of that part of the program for which they are responsible to assure its effective implementation at least once each year or at least once during the life of the activity, which ever is shorter.

2.5 Issuance and Revision to Quality Assurance Program

Administrative control of the QAPD will be in accordance with 10 CFR 50.54(a). Changes to the QAPD are evaluated by the VCS Quality Assurance Manager to ensure that such changes do not degrade previously approved quality assurance controls specified in the QAPD. This document shall be revised as appropriate to incorporate additional QA commitments that may be established during the ESP application development process. New revisions to the document will be reviewed and approved, at a minimum, by the VCS Quality Assurance Manager.

2.6 Personnel Qualifications

Personnel assigned to implement elements of the QAPD shall be capable of performing their assigned tasks. To this end VCS establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the QAPD to assure that suitable proficiency is achieved and maintained. Sufficient managerial depth is provided to cover absences of incumbents. When required by code, regulation, or standard, specific qualification and selection of personnel is conducted in accordance with those requirements as established in the applicable VCS procedures. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards, and the QAPD elements to be employed. Records of personnel training and qualification are maintained.

The minimum qualifications of the VCS Quality Assurance Manager is an engineering or related science degree and a minimum of four years of related experience including two years of nuclear power plant experience, one year of supervisory or management experience, and one year of experience performing quality verification activities. Special requirements shall include management and supervisory skills and experience or training in leadership, interpersonal communication, management responsibilities, motivation of personnel, problem analysis and decision making, and administrative policies and procedures. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

The minimum qualifications of the individuals responsible for planning, implementing and maintaining the programs for the QAPD are that each has a high school diploma or equivalent and has a minimum of one year of related experience. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

2.7 NQA-1-1994 Commitment / Exceptions

In establishing qualification and training programs, VCS commits to compliance with NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3 and 2S-4, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 2S-1

    - Supplement 2S-1 will include use of the guidance provided in Appendix 2A-1 the same as if it were part of the Supplement. The following two alternatives may be applied to the implementation of this Supplement and Appendix:

- In lieu of being certified as Level I, II, or III in accordance with NQA-1-1994, personnel performing independent quality verification inspections, examinations, measurements, or tests of material, products, or activities will be required to possess qualifications equal to or better than those required for performing the task being verified; and the verification is within the skills of these personnel and/or is addressed by procedures. These individuals will not be responsible for the planning of quality verification inspections and tests (i.e., establishing hold points and acceptance criteria in procedures, and determining who will be responsible for performing the inspections), evaluating inspection training programs, nor certifying inspection personnel.

- A qualified engineer may be used to plan inspections, evaluate the capabilities of an inspector, or evaluate the training program for inspectors. For the purpose of these functions, a qualified engineer is one who has a baccalaureate in engineering in a discipline related to the inspection activity (such as electrical, mechanical, civil) and has a minimum of five years engineering work experience with at least two years of this experience related to nuclear facilities.

- NQA-1-1994, Supplement 2S-2

  - In lieu of Supplement 2S-2, for qualification of nondestructive examination personnel, VCS will follow the applicable standard cited in the version(s) of Section III and Section XI of the ASME Boiler and Pressure Vessel Code approved by the NRC for use at Victoria County Station.

- NQA-1-1994, Supplement 2S-3

  - The requirement that prospective Lead Auditors have participated in a minimum of five (5) audits in the previous three (3) years is replaced by the following, "The prospective lead auditor shall demonstrate his/her ability to properly implement the audit process, as implemented by VCS, to effectively lead an audit team, and to effectively organize and report results, including participation in at least one nuclear audit within the year preceding the date of qualification."

SECTION 3 DESIGN CONTROL

VCS has established and implements a process to control the design, design changes and temporary modifications (e.g., temporary bypass lines, electrical jumpers and lifted wires, and temporary setpoints) of items that are subject to the provisions of this QAPD. The design process includes provisions to control design inputs, outputs, changes, interfaces, records and organizational interfaces within VCS and with suppliers. These provisions assure that design inputs (such as design bases and the performance, regulatory, quality, and quality verification requirements) are correctly translated into design outputs (such as analyses, specifications, drawings, procedures, and instructions) so that the final design output can be related to the design input in sufficient detail to permit verification. Design change processes and the division of responsibilities for design-related activities are detailed in VCS and supplier procedures.

The design control program includes interface controls necessary to control the development, verification, approval, release, status, distribution and revision of design inputs and outputs. Design changes and disposition of nonconforming items as "use as is" or "repair" are reviewed and approved by the VCS design organization or by other organizations so authorized by VCS.

Design documents are reviewed by individuals knowledgeable in QA to ensure the documents contain the necessary QA requirements.

3.1 Design Verification

VCS design processes provide for design verification to ensure that items and activities subject to the provisions of this QAPD are suitable for their intended application, consistent with their effect on safety. Design changes are subjected to these controls, which include verification measures commensurate with those applied to original plant design.

Design verifications are performed by competent individuals or groups other than those who performed the original design but who may be from the same organization. The verifier shall not have taken part in the selection of design inputs, the selection of design considerations, or the selection of a singular design approach, as applicable. This verification may be performed by the originator's supervisor provided the supervisor did not specify a singular design approach, rule out certain design considerations, and did not establish the design inputs used in the design, or if the supervisor is the only individual in the organization competent to perform the verification. If the verification is performed by the originator's supervisor, the justification of the need is documented and approved in advance by management.

The extent of the design verification required is a function of the importance to safety of the item under consideration, the complexity of the design, the degree of standardization, the state-of-the-art, and the similarity with previously proven designs. This includes design inputs, design outputs and design changes. Design verification procedures are established and implemented to assure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria are identified, and the verification is satisfactorily accomplished and documented. Verification methods may include, but are not limited to, design reviews, alternative calculations and qualification testing. Testing used to verify the acceptability of a specific design feature demonstrates acceptable performance under conditions that simulate the most adverse design conditions expected for item's intended use.

VCS normally completes design verification activities before the design outputs are used by other organizations for design work, and before they are used to support other activities such as procurement, manufacture or construction. When such timing cannot be achieved, the design

verification is completed before relying on the item to perform its intended design or safety function.

3.2 Design Records

VCS maintains records sufficient to provide evidence that the design was properly accomplished. These records include the final design output and any revisions thereto, as well as record of the important design steps (e.g., calculations, analyses and computer programs) and the sources of input that support the final output.

Plant design drawings reflect the properly reviewed and approved configuration of the plant.

3.3 Computer Application and Digital Equipment Software

The QAPD shall govern the development, procurement, testing, maintenance, and use of computer application and digital equipment software when used in safety-related applications and designated non-safety-related applications. VCS and suppliers shall be responsible for developing, approving, and issuing procedures, as necessary, to control the use of such computer application and digital equipment software. The procedures shall require that the application software be assigned a proper quality classification and that the associated quality requirements be consistent with this classification. Each application software and revision thereto shall be documented and approved by the management position for engineering and design as delineated in the software control procedures. This QAPD shall also be applicable to the administrative functions associated with the maintenance and security of computer hardware where such functions are considered essential in order to comply with other QAPD requirements such as QA records.

3.4 NQA-1-1994 Commitment

In establishing its program for design control and verification, VCS commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, the subsurface investigations requirements contained in Subpart 2.20 and the standards for computer software contained in Subpart 2.7.

SECTION 4 PROCUREMENT DOCUMENT CONTROL

VCS has established the necessary measures and governing procedures to assure that purchased items and services are subject to appropriate quality and technical requirements. Procurement document changes shall be subject to the same degree of control as utilized in the preparation of the original documents. These controls include provisions such that:

- Where original technical or quality assurance requirements cannot be determined, an engineering evaluation is conducted and documented by qualified staff to establish appropriate requirements and controls to assure that interfaces, interchangeability, safety, fit and function, as applicable, are not adversely affected or contrary to applicable regulatory requirements.

- Applicable technical, regulatory, administrative, quality and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR 21) are invoked for procurement of items and services. 10 CFR 21 requirements for posting, evaluating and reporting will be followed and imposed on suppliers when applicable. Applicable design bases and other requirements necessary to assure adequate quality shall be included or referenced in documents for procurement of items and services. To the extent necessary, procurement documents shall require suppliers to have a documented QA program that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of procurements (or the supplier may work under the VCS approved QA program).

Reviews of procurement documents shall be performed by personnel who have access to pertinent information and who have an adequate understanding of the requirements and intent of the procurement documents.

4.1 NQA-1-1994 Commitment / Exceptions

In establishing controls for procurement, VCS commits to compliance with NQA-1-1994, Basic Requirement 4 and Supplement 4S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 4S-1

  - Section 2.3 of this Supplement 4S-1 includes a requirement that procurement documents require suppliers to have a documented QAP that implements NQA-1-1994, Part 1. In lieu of this requirement, VCS may require suppliers to have a documented supplier QAP that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of the procurement.

  - With regard to service performed by a supplier, VCS procurement documents may allow the supplier to work under the VCS QAP, including implementing procedures, in lieu of the supplier having its own QAP.

  - Section 3 of this supplement 4S-1 requires procurement documents to be reviewed prior to bid or award of contract. The quality assurance review of procurement documents is satisfied through review of the applicable procurement specification, including the technical and quality procurement requirements, prior to bid or award of contract. Procurement document changes (e.g., scope, technical or quality requirements) will also receive the quality assurance review.

- Procurement documents for Commercial Grade Items that will be procured by VCS for use as safety-related items shall contain technical and quality requirements such that the procured item can be appropriately dedicated.

SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

VCS has established the necessary measures and governing procedures to ensure that activities affecting quality are prescribed by and performed in accordance with instructions, procedures or drawings of a type appropriate to the circumstances and which, where applicable, include quantitative or qualitative acceptance criteria to implement the QAP as described in the QAPD. Such documents are prepared and controlled according to Part II, Section 6 of this QAPD. In addition, means are provided for dissemination to the staff of instructions of both general and continuing applicability, as well as those of short-term applicability. Provisions are included for reviewing, updating, and canceling such procedures.

5.1 Procedure Adherence

VCS policy is that procedures are followed, and the requirements for use of procedures have been established in administrative procedures. Where procedures cannot be followed as written, provisions are established for making changes in accordance with Part II, Section 6 of this QAPD. Requirements are established to identify the manner in which procedures are to be implemented, including identification of those tasks that require (1) the written procedure to be present and followed step-by-step while the task is being performed, (2) the user to have committed the procedure steps to memory, (3) verification of completion of significant steps, by initials or signatures or use of check-off lists. Procedures that are required to be present and referred to directly are those developed for extensive or complex jobs where reliance on memory cannot be trusted, tasks that are infrequently performed, and tasks where steps must be performed in a specified sequence.

In cases of emergency, personnel are authorized to depart from approved procedures when necessary to prevent injury to personnel or damage to the plant. Such departures are recorded describing the prevailing conditions and reasons for the action taken.

5.2 Procedure Content

The established measures address the applicable content of procedures as described in the introduction to Part II of NQA-1-1994. In addition, procedures governing tests, inspections, operational activities and maintenance will include as applicable, initial conditions and prerequisites for the performance of the activity.

5.3 NQA-1-1994 Commitment

In establishing procedural controls, VCS commits to compliance with NQA-1-1994, Basic Requirement 5.

SECTION 6 DOCUMENT CONTROL

VCS has established the necessary measures and governing procedures to control the preparation of, issuance of, and changes to documents that specify quality requirements or prescribe how activities affecting quality, including organizational interfaces, are controlled to assure that correct documents are being employed. The control system (including electronic systems used to make documents available) shall be documented and shall provide for:

- Identification of documents to be controlled and their specified distribution;
- A method to identify the correct document (including revision) to be used and control of superseded documents;
- Identification of assignment of responsibility for preparing, reviewing, approving, and issuing documents;
- Review of documents for adequacy, completeness, and correctness prior to approval and issuance;
- A method for providing feedback from users to continually improve procedures and work instructions; and
- Coordinating and controlling interface documents and procedures.

The types of documents to be controlled include:

- Drawings such as design, construction, installation, and as-built drawings;
- Engineering calculations;
- Design specifications;
- Purchase orders and related documents;
- Vendor-supplied documents;
- Audit, surveillance, and quality verification/inspection procedures;
- Inspection and test reports;
- Instructions and procedures for activities covered by this QAPD including design, construction, installation, operating (including normal and emergency operations), maintenance, calibration, and routine testing;
- Technical specifications; and
- Nonconformance reports and corrective action reports.

6.1 Review and Approval of Documents

Documents shall be reviewed for adequacy by qualified persons other than the preparer. During the ESP and construction phase, procedures for design, construction, and installation shall also be reviewed by Quality Assurance organization to ensure quality assurance measures have been appropriately applied. The documented review signifies concurrence.

Prior to issuance or use, documents including revisions thereto, shall be approved by the designated authority. A listing of all controlled documents identifying the current approved revision, or date, is maintained so personnel can readily determine the appropriate document for use.

6.2 Changes to Documents

Changes to documents, other than those defined in implementing procedures as minor changes, shall be reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organization shall have access to pertinent background data or information upon which to base their approval. Minor changes to documents, such as inconsequential editorial corrections, do not require that the revised documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, the type of minor changes that do not require such a review and approval and the persons who can authorize such a classification shall be clearly delineated in implementing procedures.

6.3 NQA-1-1994 Commitment

In establishing provisions for document control, VCS commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

VCS has established the necessary measures and governing procedures to control the procurement of items and services to assure conformance with specified requirements. Such control shall provide for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services.

7.1 Acceptance of Item or Service

VCS establishes and implements measures to assess the quality of purchased items and services, whether purchased directly or through contractors, at intervals and to a depth consistent with the item's or service's importance to safety, complexity, quantity and the frequency of procurement. Verification actions include testing, as appropriate, during design, fabrication and construction activities. Verifications occur at the appropriate phases of the procurement process, including, as necessary, verification of activities of suppliers below the first tier.

Measures to assure the quality of purchased items and services include the following, as applicable:

- Items are inspected, identified, and stored to protect against damage, deterioration, or misuse.

- Prospective suppliers of safety-related items and services are evaluated to assure that only qualified suppliers are used. Qualified suppliers are audited on a triennial basis. In addition, if a subsequent contract or a contract modification significantly enlarges the scope of or changes the methods or controls for activities performed by the same supplier, an audit of the modified requirements is conducted, thus starting a new triennial period. VCS may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet VCS requirements. Documented annual evaluations are performed for qualified suppliers to assure they continue to provide acceptable products and services. Industry programs, such as those applied by ASME, Nuclear Procurement Issues Committee (NUPIC), or other established utility groups, are used as input or the basis for supplier qualification whenever appropriate. The results of the reviews are promptly considered for effect on a supplier's continued qualification and adjustments made as necessary (including corrective actions, adjustments of supplier audit plans, and input to third party auditing entities, as warranted). In addition, results are reviewed periodically to determine if, as a whole, they constitute a significant condition adverse to quality requiring additional action.

- Provisions are made for accepting purchased items and services, such as source verification, receipt inspection, pre- and post-installation tests, certificates of conformance, and document reviews (including Certified Material Test Report/Certificate). Acceptance actions/documents should be established by the Purchaser with appropriate input from the Supplier and be completed to ensure that procurement, inspection, and test requirements, as applicable, have been satisfied before relying on the item to perform its intended safety function.

- Controls are imposed for the selection, determination of suitability for intended use (critical characteristics), evaluation, receipt and acceptance of commercial-grade services or items to assure they will perform satisfactorily in service in safety-related applications.

- If there is insufficient evidence of implementation of a QA program, the initial evaluation is of the existence of a QA program addressing the scope of services to be provided. The initial audit is performed after the supplier has completed sufficient work to demonstrate that its organization is implementing a QA program.

7.2 NQA-1-1994 Commitment / Exceptions

In establishing procurement verification controls, VCS commits to compliance with NQA-1-1994, Basic Requirement 7 and Supplement 7S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 7S-1

  - VCS considers that other 10 CFR 50 licensees, Authorized Nuclear Inspection Agencies, National Institute of Standards and Technology, or other State and Federal agencies which may provide items or services to the VCS units are not required to be evaluated or audited.

  - When purchasing commercial grade calibration services from a calibration laboratory, procurement source evaluation and selection measures need not be performed provided each of the following conditions are met:

    (1) The purchase documents impose any additional technical and administrative requirements, as necessary, to comply with the VCS QA program and technical provisions. At a minimum, the purchase document shall require that the calibration certificate/report include identification of the laboratory equipment/standard used.

    (2) The purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance.

    (3) A documented review of the supplier's accreditation shall be performed and shall include a verification of each of the following:

      - The calibration laboratory holds a domestic (United States) accreditation by any one of the following accrediting bodies, which are recognized by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA):

        - National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards & Technology,
        - American Association for Laboratory Accreditation (A2LA)
        - ACLASS Accreditation Services (ACLASS),
        - International Accreditations Service (IAS),
        - Laboratory Accreditation Bureau (L-A-B)
        - Other NRC-approved laboratory accrediting body.

- The accreditation encompasses ANS/ISO/IEC 17025, “General Requirements for the Competence of Testing and Calibration Laboratories.”

- The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, ranges, and uncertainties.

– For Section 8.1, VCS considers documents that may be stored in approved electronic media under VCS or vendor control and not physically located on the VCS site but which are accessible from the respective nuclear facility site as meeting the NQA-1 requirement for documents to be available at the site. Following completion of the construction period, sufficient as-built documentation will be turned over to VCS to support operations. The VCS records management system will provide for timely retrieval of necessary records.

– In lieu of the requirements of Section 10, Commercial Grade Items, controls for commercial grade items and services are established in VCS documents using 10 CFR 21 and the guidance of EPRI NP-5652 as discussed in Generic Letter 89-02 and Generic Letter 91-05.

  - For commercial grade items, special quality verification requirements are established and described in VCS documents to provide the necessary assurance an item will perform satisfactorily in service. The VCS documents address determining the critical characteristics that ensure an item is suitable for its intended use, technical evaluation of the item, receipt requirements, and quality evaluation of the item.

  - VCS will also use other appropriate approved regulatory means and controls to support VCS commercial grade dedication activities. VCS will assume 10 CFR 21 reporting responsibility for all items that VCS dedicates as safety-related.

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

VCS has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf life. The identification of items is maintained throughout fabrication, erection, installation and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as not to affect the function or quality of the item.

8.1 NQA-1-1994 Commitment

In establishing provisions for identification and control of items, VCS commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

SECTION 9 CONTROL OF SPECIAL PROCESSES

VCS has established the necessary measures and governing procedures to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and nondestructive examination, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Personnel are qualified and special processes are performed in accordance with applicable codes, standards, specifications, criteria or other specially established requirements. Special processes are those where the results are highly dependent on the control of the process or the skill of the operator, or both, and for which the specified quality cannot be fully and readily determined by inspection or test of the final product.

9.1 NQA-1-1994 Commitment

In establishing measures for the control of special processes, VCS commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

SECTION 10 INSPECTION

VCS has established the necessary measures and governing procedures to implement inspections that assure items, services and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures, and design documents. Inspection may also be applied to items, services and activities affecting plant reliability and integrity. Types of inspections may include those verifications related to procurement, such as source, in-process, final, and receipt inspection, as well as construction, installation, and operations activities. Inspections are carried out by properly qualified persons independent of those who performed or directly supervised the work. Inspection results shall be documented.

10.1 Inspection Program

The inspection program establishes inspections (including surveillance of processes), as necessary to verify quality: (1) at the source of supplied items or services, (2) in-process during fabrication at a Supplier's facility or at a Company facility, (3) for final acceptance of fabricated and/or installed items during construction, (4) upon receipt of items for a facility, as well as (5) during maintenance, modification, in-service, and operating activities.

The inspection program establishes requirements for planning inspections, such as the group or discipline responsible for performing the inspection, where inspection hold points are to be applied, determining applicable acceptance criteria, the frequency of inspection to be applied, and identification of special tools needed to perform the inspection. Inspection planning is performed by personnel qualified in the discipline related to the inspection and includes qualified inspectors or engineers. Inspection plans are based on, as a minimum, the importance of the item to the safety of the facility, the complexity of the item, technical requirements to be met, and design specifications. Where significant changes in inspection activities for the facilities are to occur, management responsible for the inspection programs evaluate the resource and planning requirements to ensure effective implementation of the inspection program.

Inspection program documents establish requirements for performing the planned inspections, and documenting required inspection information such as: rejection, acceptance, and re-inspection results; and the person(s) performing the inspection.

Inspection results are documented by the inspector, reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results, and controlled by instructions, procedures, and drawings.

10.2 Inspector Qualification

VCS has established qualification programs for personnel performing quality inspections. The qualification program requirements are described in Part II, Section 2 of this QAPD. These qualification programs are applied to individuals performing quality inspections regardless of the functional group where they are assigned.

10.3 NQA-1-1994 Commitment / Exceptions

In establishing inspection requirements, VCS commits to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1 and Subpart 2.4, with the clarification that follows below. In addition, VCS commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

- Subpart 2.4 commits VCS to IEEE 336-1985. IEEE 336-1985 refers to IEEE 498-1985. Both IEEE 336 -1985 and IEEE 498-1985 use the definition of "Safety Systems Equipment" from IEEE 603-1980. VCS commits to the definition of Safety Systems Equipment in IEEE 603- 1980, but does not commit to the balance of that standard. This definition is only applicable to equipment in the context of Subpart 2.4.

- An additional exception to Subpart 2.4 is contained in Part II, Section 12 of this QAPD.

SECTION 11 TEST CONTROL

VCS has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of this QAPD will perform satisfactorily in service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant as a whole is satisfactory. These programs include criteria for determining when testing is required, such as proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, and in-service tests, to demonstrate that performance of plant systems is in accordance with design. Programs also include provisions for establishing and adjusting test schedules and maintaining status for periodic or recurring tests. Tests are performed according to applicable procedures that include, consistent with the effect on safety, (1) instructions and prerequisites to perform the test, (2) use of proper test equipment, (3) acceptance criteria, and (4) mandatory verification points as necessary to confirm satisfactory test completion. Test results are documented and evaluated by the organization performing the test and reviewed by a responsible authority to assure that the test requirements have been satisfied. If acceptance criteria are not met, re-testing is performed as needed to confirm acceptability following correction of the system or equipment deficiencies that caused the failure.

The tests are performed and results documented in accordance with applicable technical and regulatory requirements including those described in the SAR. The test programs ensure appropriate retention of test data in accordance with the records requirements of this QAPD. The personnel performing or evaluating tests are qualified in accordance with the requirements established in Part II, Section 2 of this QAPD.

11.1 NQA-1-1994 Commitment

In establishing provisions for testing, VCS commits to compliance with NQA-1-1994, Basic Requirement 11 and Supplement 11S-1.

11.2 NQA-1-1994 Commitment for Computer Program Testing

VCS establishes and implements provisions to assure that computer software used in applications affecting safety is prepared, documented, verified and tested, and used such that the expected output is obtained and configuration control maintained. To this end VCS commits to compliance with the requirements of NQA-1-1994, Supplement 11S-2 and Subpart 2.7 to establish the appropriate provisions.

SECTION 12 CONTROL OF MEASURING AND TEST EQUIPMENT

VCS has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment (M&TE) that provides information important to safe plant operation. The provisions of such procedures cover equipment such as indicating and actuating instruments and gages, tools, reference and transfer standards, and nondestructive examination equipment. The suppliers of commercial-grade calibration services shall be controlled as described in Part II, Section 7 of this QAPD.

12.1 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, VCS commits to compliance with NQA-1-1994, Basic Requirement 12 and Supplement 12S-1 with the following clarification and exception:

- The out of calibration conditions described in paragraph 3.2 of Supplement 12S-1 refers to when the M&TE is found out of the required accuracy limits (i.e., out of tolerance) during calibration.

- Measuring and test equipment are not required to be marked with the calibration status where it is impossible or impractical due to equipment size or configuration (such as the label will interfere with operation of the device) provided the required information is maintained in suitable documentation traceable to the device. This exception also applies to the calibration labeling requirement stated in NQA-1-1994, Subpart 2.4, Section 7.2.1 (ANSI/IEEE Std. 336-1985).

SECTION 13 HANDLING, STORAGE, AND SHIPPING

VCS has established the necessary measures and governing procedures to control the handling, storage, packaging, shipping, cleaning, and preservation of items to prevent inadvertent damage or loss, and to minimize deterioration. These provisions include specific procedures, when required to maintain acceptable quality of the items important to the safe operations of the plant. Items are appropriately marked and labeled during packaging, shipping, handling and storage to identify, maintain, and preserve the item's integrity and indicate the need for special controls. Special controls (such as containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels and temperature levels) are provided when required to maintain acceptable quality.

Special or additional handling, storage, shipping, cleaning and preservation requirements are identified and implemented as specified in procurement documents and applicable procedures. Where special requirements are specified, the items and containers (where used) are suitably marked.

Special handling tools and equipment shall be used and controlled as necessary to ensure safe and adequate handling. Special handling tools and equipment shall be inspected and tested at specified time intervals and in accordance with procedures to verify that the tools and equipment are adequately maintained.

Operators of special handling and lifting equipment shall be experienced or trained in the use the equipment. Where required, VCS complies with applicable hoisting, rigging and transportation regulations and codes.

13.1 NQA-1-1994 Commitment / Exceptions

In establishing provisions for handling, storage and shipping, VCS commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. VCS also commits, during the construction and pre-operational phase of the plant, to compliance with the requirements of NQA-1-1994, Subpart 2.1, Subpart 2.2, and Subpart 3.2 Appendix 2.1 with the clarifications and exceptions shown below:

- NQA-1-1994, Subpart 2.2
    - Subpart 2.2, section 6.6, "Storage Records:" This section requires written records be prepared containing information on personnel access. As an alternative to this requirement, VCS documents establish controls for storage areas that describe those authorized to access areas and the requirements for recording access of personnel. However, these records of access are not considered quality records and will be retained in accordance with the administrative controls of the applicable plant.
    - Subpart 2.2, section 7.1 refers to Subpart 2.15 for requirements related to handling of items. The scope of Subpart 2.15 includes hoisting, rigging and transporting of items for nuclear power plants during construction.
- NQA-1-1994, Subpart 3.2
    - Subpart 3.2, Appendix 2.1: Only section 3 precautions are being committed to in accordance with RG 1.37. In addition, a suitable chloride stress-cracking inhibitor

should be added to the fresh water used to flush systems containing austenitic stainless steels.

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

This section is not applicable.

SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

VCS has established the necessary measures and governing procedures to control items, including services, which do not conform to specified requirements to prevent inadvertent installation or use. Controls provide for identification, documentation, evaluation, segregation when practical, and disposition of nonconforming items, and for notification to affected organizations. Controls are provided to address conditional release of nonconforming items for use on an at risk basis prior to resolution and disposition of the nonconformance, including maintaining identification of the item and documenting the basis for such release. Conditional release of nonconforming items for installation requires the approval of the designated management. Nonconformances are corrected or resolved prior to depending on the item to perform its intended safety function. Nonconformances are evaluated for impact on operability of quality structures, systems, and components to assure that the final condition does not adversely affect safety, operation, or maintenance of the item or service. Nonconformances to design requirements dispositioned repair or use-as-is, shall be subject to design control measures commensurate with those applied to the original design. Nonconformance dispositions are reviewed for adequacy, analysis of quality trends, and reports provided to the designated management. Significant trends are reported to management in accordance with VCS procedures, regulatory requirements, and industry standards.

15.1 Reporting Program

VCS has the necessary measures and governing procedures that implement a reporting program which conforms to the requirements of 10 CFR 52, 10 CFR 50.55(e) and/or 10 CFR 21 during design, fabrication, testing and construction activities.

15.2 NQA-1-1994 Commitment

In establishing measures for nonconforming materials, parts, or components, VCS commits to compliance with NQA-1-1994, Basic Requirement 15, and Supplement 15S-1.

SECTION 16 CORRECTIVE ACTION

VCS has established the necessary measures and governing procedures to promptly identify, control, document, classify and correct conditions adverse to quality. VCS procedures assure that corrective actions are documented and initiated following the determination of conditions adverse to quality in accordance with regulatory requirements and applicable quality standards. VCS procedures require personnel to identify known conditions adverse to quality. When complex issues arise where it cannot be readily determined if a condition adverse to quality exists, VCS documents establish the requirements for documentation and timely evaluation of the issue. Reports of conditions adverse to quality are analyzed to identify trends. Significant conditions adverse to quality and significant adverse trends are documented and reported to responsible management. In the case of a significant condition adverse to quality, the cause is determined and actions to preclude recurrence are taken.

In the case of suppliers working on safety-related activities, or other similar situations, VCS may delegate specific responsibilities of the Corrective Action program but VCS maintains responsibility for the program's effectiveness.

16.1 Reporting Program

VCS has the necessary measures and governing procedures that implement a program to identify, evaluate and report defects and non-compliances in accordance with 10 CFR 50.55(e), 10 CFR 52, and/or 10 CFR Part 21, as applicable. Such a reporting program applies to all safety-related activities and services performed by VCS and/or VCS suppliers / sub-suppliers providing design, fabrication, testing, and construction activities.

16.2 NQA-1-1994 Commitment

In establishing provisions for corrective action, VCS commits to compliance with NQA-1-1994, Basic Requirement 16.

SECTION 17 QUALITY ASSURANCE RECORDS

VCS has established the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting quality are developed, reviewed, approved, issued, used, and revised to reflect completed work. The provisions of such procedures establish the scope of the records retention program for VCS and include requirements for records administration, including receipt, preservation, retention, storage, safekeeping, retrieval, access controls, user privileges, and final disposition.

17.1 Record Retention

Measures are required to be established that ensure that sufficient records of completed items and activities affecting quality are appropriately stored. Such records and their retention times are defined in appropriate procedures. The records and retention times are based on Regulatory Position C.2 and Table 1, of Regulatory guide 1.28, Revision 3. In all cases where state, local, or other agencies have more restrictive requirements for record retention, those requirements will be met.

17.2 Electronic Records

When using electronic records storage and retrieval systems, VCS complies with NRC guidance Generic Letter 88-18, "Plant Record Storage on Optical Disks." VCS will manage the storage of QA Records in electronic media consistent with the intent of RIS 2000-18 and associated NIRMA Guidelines TG 11-1998, TG15-1998, TG16-1998, and TG21-1998.

17.3 NQA-1-1994 Commitment / Exceptions

In establishing provisions for records, VCS commits to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 17S-1
    - Supplement 17S-1, section 4.2(b) requires records to be firmly attached in binders or placed in folders or envelopes for storage in steel file cabinets or on shelving in containers. For hard-copy records maintained by VCS, the records are suitably stored in steel file cabinets or on shelving in containers, except that methods other than binders, folders or envelopes may be used to organize the records for storage.

SECTION 18 AUDITS

VCS has established the necessary measures and governing procedures to implement audits to verify that activities covered by this QAPD are performed in conformance with the requirements established. The audit programs are themselves reviewed for effectiveness as a part of the overall audit process.

18.1 Performance of Audits

Internal audits of selected aspects of licensing, design, construction phase activities are performed with a frequency commensurate with safety significance and in a manner which assures that audits of safety-related activities are completed. During the early portions of Victoria County Station, activities, audits will focus on areas including, but not limited to, site investigation, procurement, and corrective action. Functional areas of an organization's QA program for auditing include at a minimum verification of compliance and effectiveness of implementation of internal rules, procedures (e.g., design, procurement, maintenance, modification, surveillance, test, security, radiation control procedures, and the emergency plan), regulations and license conditions, programs for training, corrective actions, maintenance and modification activities, including associated record keeping.

The audits are 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, under the direction of a qualified lead auditor and the cognizance of the Quality Assurance Manager.

VCS is responsible for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of programs and procedures by representative sampling, and to determine if they are meaningful and comply with the overall QAPD. External audits determine the adequacy of supplier and contractor quality assurance program.

The results of each audit are reported in writing to the management position responsible for nuclear oversight and to the appropriate managerial level of the organization having responsibility for the area or activity audited, or designee, as appropriate. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

Management responds to all audit findings 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.

Audits of suppliers of safety-related components and/or services are conducted as described in Section 7.1.

18.2 Internal Audits

Internal audits of organization and facility activities, conducted prior to placing the facility in operation, should be performed in such a manner as to assure that an audit of all applicable QA program elements is completed for each functional area at least once each year or at least once during the life of the activity, whichever is shorter.

Internal audits include verification of compliance and effectiveness of the administrative controls established for implementing the requirements of this QAPD; regulations and license provisions; provisions for training, retraining, qualification, and performance of personnel performing activities covered by this QAPD; corrective actions taken following abnormal occurrences; and, observation of the performance of construction, fabrication, maintenance and modification activities including associated record keeping.

18.3 NQA-1-1994 Commitment

In establishing the independent audit program, VCS commits to compliance with NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.

PART III NON-SAFETY-RELATED SSC QUALITY CONTROL

NOTE: Part III does not apply to an ESP-only QAPD.

PART IV REGULATORY COMMITMENTS

SECTION 1 NRC Regulatory Guides and Quality Assurance Standards

This section identifies the NRC Regulatory Guides and the other quality assurance standards which have been selected to supplement and support the VCS QAPD. VCS commits to compliance with these standards to the extent described herein. Commitment to a particular Regulatory Guide or other QA standard does not constitute a commitment to the Regulatory Guides or QA standards that may be referenced therein.

SECTION 2 Regulatory Guides

Regulatory Guide 1.26, Revision 4, March 2007 - Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants

Regulatory Guide 1.26 defines classification of systems and components.
VCS commits to the applicable regulatory position guidance provided in this regulatory guide

Regulatory Guide 1.28, Rev. 3, August 1985, Quality Assurance Program Requirements (Design and Construction)

Regulatory Guide 1.28 describes a method acceptable to the NRC staff for complying with the provisions of Appendix B with regard to establishing and implementing the requisite quality assurance program for the design and construction of nuclear power plants.

Regulatory Guide 1.29, Revision 4, March 2007 - Seismic Design Classification Regulatory Guide 1.29 defines systems required to withstand a safe shutdown earthquake (SSE).

VCS commits to the applicable regulatory position guidance provided in this regulatory guide

Regulatory Guide 1.37, Revision 1, March 2007 – Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants.

Regulatory Guide 1.37 provides guidance on specifying water quality and precautions related to the use of alkaline cleaning solutions and chelating agents.

VCS commits to the applicable regulatory position and guidance provided in this regulatory guide.

SECTION 3 Standards

ASME NQA-1-1994 Edition - Quality Assurance Requirements for Nuclear Facility Applications
VCS commits to NQA-1-1994, Parts I and II, as described in the foregoing sections of this document.

Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guides (TGs) - VCS commits to NIRMA TGs as described in Part II, Section 17 of this document.