

Eugene S. Grecheck
Vice President
Nuclear Support Services

Dominion Energy • Dominion Generation
Innsbrook Technical Center
5000 Dominion Boulevard, Glen Allen, VA 23060
Phone 804-273-2442, Fax: 804-273-3471
E-mail. Eugene_Grecheck@dom.com



stere
Dominion

September 16, 2002

NRC Project No. 719
Serial No. 02-600

U. S. Nuclear Regulatory Commission
Attn: Mr. James E. Lyons, Director
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation
Mail Stop 4 D9A
Washington, D. C. 20555-0001

Dear Mr. Lyons:

NORTH ANNA EARLY SITE PERMITTING PROJECT
QUALITY ASSURANCE PLAN

In a June 13, 2002 meeting between the NRC and the NEI Early Site Permit Task Force, Mr. J. Hegner of my staff committed to submit the Quality Assurance Plan for Dominion's North Anna Early Site Permitting Project to you this month for the NRC's informal review and comment. Accordingly, a copy of that plan is enclosed.

Please note that the plan is a developmental work, and that additional commitments may evolve as we prepare the North Anna ESP application, such as commitments to specific regulatory guides or national standards. The plan structure (see Table 2 of the plan) takes that approach into account.

We appreciate NRC's support of the nuclear industry's efforts to generically address and resolve regulatory issues associated with the development of ESP applications. In addition, we look forward to working closely with your staff both during the development of our ESP application and during the staff's formal review.

If you have questions, please contact Mr. Hegner at 804-273-2770.

Sincerely,

Eugene S. Grecheck

Enclosure

NRC Project No. 719
Serial No. 02-600

cc: Mr. S. Koenick
U. S. Nuclear Regulatory Commission
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation
Mail Stop 4 D9A
Washington, D. C. 20555-0001

Mr. R. Simard, NEI
1776 I Street, NW
Washington, D.C. 20006



Dominion

Quality Assurance Manual

Title: Early Site Permit Application Development Quality Assurance Manual

Process/Program Owner: **Project Manager – Early Site Permit Project**

Revision Number

0

Effective Date

8/14/02

Revision Summary

New Manual

Approval Signatures on File

Prepared by: _____ / _____

Reviewed By:

Project Manager - ESP

Reviewed By:

Director Nuclear Oversight

Approved By:

Vice President Nuclear
Support Services



Table Of Contents

Quality Assurance Manual	1
1. Introduction	3
2. Organization	3
3. Quality Assurance Program	9
4. Design Control	13
5. Procurement Document Control.....	15
6. Instructions, Procedures and Drawings	16
7. Document Control	17
8. Control of Purchased Material, Equipment and Services.....	18
9. Identification and control of Materials, Parts and Components	19
10. Control of Special Processes	19
11. Inspection	19
12. Test Control	21
13. Control of Measuring and Test Equipment.....	21
14. Handling, Storage and Shipping	23
15. Inspection, Test and Operating Status.....	23
16. Nonconforming Materials, Parts, or Components	23
17. Corrective Action.....	23
18. Quality Assurance Records	25
19. Audits.....	25
20. Issuance and Revision of the Early Site Permit Application Development QA Manual	27
Appendix A	28
Appendix B	30



1. Introduction

This manual delineates the Quality Assurance Plan for the development of an Early Site Permit Application for the addition of new nuclear generation. It has been developed with guidance from ASME-NQA-1-2000.

The Quality Assurance Program (QA Program) outlines the organization, programs and procedural requirements that will assure that the application is developed in a quality manner and, where appropriate, in accordance with 10CFR50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Processing Plants."

Where applicable, items that may or will affect the operating unit or units will be addressed under the operating QA program, VEP-1-5A, Operational Quality Assurance Program Topical Report. In selected cases as stated in this document, the existing operating QA program, VEP-1-5A will govern compliance with this program. Also, many procedures and instructions that comply with the Operational Quality Assurance Program will also be used to comply with this program.

Control, revision and approval of this manual will be performed in accordance with Section 20, Issuance and Revision of the Early Site Permit Application Development QA Manual.

2. Organization

General Description

A. Early Site Permit Development Organization

There are five groups within the Early Site Permit Development Organization which affect the quality of the Early Site Permit Application. These groups are Early Site Permit Project, Nuclear Operations, Nuclear Engineering, Nuclear Support Services, and Nuclear Oversight. The Nuclear Organization is shown in Appendix A.

B. Early Site Permit Project

The Early Site Permit Project is responsible for development of the Early Site Permit Application, coordinating the technical input required, managing subcontractors and assuring that all licensing requirements are



met. The Early Site Permit Project is the design authority for development of the Early Site Permit.

C. Nuclear Operations

Nuclear Operations is responsible for operation and maintenance of the Nuclear Stations and Independent Spent Fuel Storage Installations (ISFSIs). In addition, Nuclear Operations is responsible for quality inspection activities for on site work.

D. Nuclear Engineering

Nuclear Engineering is responsible for support of the Early Site Permit Organization by providing engineering services and records management. The engineering departments provide design engineering support.

E. Nuclear Support Services

Nuclear Support Services is responsible for support of the Early Site Permit Organization by providing licensing and operations support, personnel training, nuclear security and emergency preparedness support.

F. Nuclear Oversight

Nuclear Oversight is responsible for independently planning and performing activities to verify the development and effective implementation of nuclear management's quality assurance programs for engineering, procurement, and construction activities associated with the Early Site Permit development.

G. Information Technology

Information Technology is responsible for providing information technology services to the nuclear organization. The Information Technology Group is matrixed to Nuclear Engineering.

H. Supply Chain Management (Generation)

Supply Chain Management (Generation) is responsible for providing material management, procurement, procurement engineering and other supply chain functions. The Supply Chain Management (Generation) Group is matrixed to Nuclear Support Services.

Nuclear Management

A. Senior Vice President and Chief Nuclear Officer

The Senior Vice President and Chief Nuclear Officer has corporate responsibility for and directs the planning and development of the Early Site Permit Organization staff, and organization resources.

B. Vice President Nuclear Support Services

The Vice President Nuclear Support Services is responsible to the Senior Vice President and Chief Nuclear Officer and has the responsibility for development of the Early Site Permit Application. The Vice President Nuclear Support Services has overall responsibility for implementing the quality assurance program for the Early Site Permit Organization.

1. Project Manager – Early Site Permit Project

The Project Manager – Early Site Permit Project is responsible to the Vice President Nuclear Support Services for developing the Early Site Permit Application and assuring that the Application meets all of the requirements of the quality assurance program.

2. Director Nuclear Licensing & Operations Support

Director Nuclear Licensing & Operations Support is responsible to the Vice President Nuclear Support Services for providing regulatory compliance support, and providing licensing support through NRC communications.

3. Director Nuclear Protection Services & Emergency Preparedness

Director Nuclear Protection Services & Emergency Preparedness is responsible to the Vice President Nuclear Support Services for providing nuclear station security, plant and ISFSI access programs, station safety and loss prevention, and fitness for duty programs. The Director Nuclear Protection Services & Emergency Preparedness is also responsible for the overall management of Nuclear Emergency Preparedness activities and is responsible for development of the emergency planning sections of the Application.

4. Director Nuclear Training

Director Nuclear Training is responsible to the Vice President Nuclear Support Services for the training of personnel who operate or support the Nuclear Stations. Training responsibilities include: determining the need for training based on information provided by the Early Site Permit Organization, developing performance-based training programs, implementing training programs to support employee and organization needs, and evaluating training programs.

5. Director Supply Chain Management (Generation)

The Director Supply Chain Management (Generation) is responsible to the Vice President Nuclear Support Services for the material management, purchasing, procurement engineering, and vendor surveillance functions. This responsibility is exercised in a matrixed-reporting role.

C. Director Nuclear Oversight

The Director Nuclear Oversight is responsible to the Senior Vice President and Chief Nuclear Officer for assuring the compliance with the Quality Assurance Program for Early Site Permit Application development. The Director Nuclear Oversight may make recommendations to the Early Site Permit Development Organization's management. If the Director of Nuclear Oversight disagrees with any actions taken by the Early Site Permit Development Organization and is unable to obtain resolution, the Director Nuclear Oversight shall bring the matter to the attention of the Senior Vice President and Chief Nuclear Officer who will determine the final disposition.

1. Supervisor Nuclear Quality (Vendor Programs)

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



2. Nuclear Specialist (Audit Coordinator)

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

D. Vice President Nuclear Engineering

The Vice President Nuclear Engineering is responsible to the Senior Vice President and Chief Nuclear Officer and has corporate responsibility for supporting development of the Early Site Permit Application through engineering, projects, and nuclear analysis and fuel activities.

1. Director Information Technology Business Account (Generation)

The Director Information Technology Business Account (Generation) is responsible to the Vice President Nuclear Engineering for information technology direction and support of the Nuclear Business Unit. This responsibility is exercised in a matrixed-reporting role. Responsibilities include network infrastructure maintenance and upgrade, network and application security, network operations, automation strategy, application development and support, and automation training.

2. Director Nuclear Engineering

The Director of Nuclear Engineering is responsible to the Vice President Nuclear Engineering for implementing the operational quality assurance program in the following areas:

- Design Engineering
- Configuration Management
- Site Engineering
- Records Management

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

a. Manager Design Engineering

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

b. Manager Nuclear Site Engineering

The Manager Nuclear Site Engineering is responsible to the Director Nuclear Engineering for managing engineering resources in Systems Engineering, Component Engineering, and Test and Inspection Engineering. The Manager Nuclear Site Engineering also provides a day-to-day interface with Station management.

c. Manager Nuclear Engineering

The Manager Nuclear Engineering is responsible to the Director Nuclear Engineering for managing activities related to the control and availability of design and licensing basis information, configuration management, and the control of nuclear records through effective implementation of the records management program.

E. Senior Vice President Nuclear Operations

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

F. Site Vice President

Responsible to the Senior Vice President Nuclear Operations for the overall safe and efficient operation of the station and ISFSI, and for the



implementation of quality assurance requirements in the areas specified by the Operational Quality Assurance Program.

For the purposes of this program, the description of the duties of the Site Vice President and staff will be limited to those that impact the Early Site Permit Application Development. All other topics are addressed in the Operational Quality Assurance Program.

The Site Vice President has supervisory control over all Company personnel within the station organization and administrative control over all other Company and non-Company individuals within the nuclear site's boundary. The Site Vice President is the local representative of Company management and is empowered to implement all Company policy with regard to operations of the facility, support of Company public relations policy, and employee relations policies. The Site Vice President is also responsible for coordinating station functions with offsite (Company and non-Company) agencies and services, and ensuring station personnel are adequately trained in accordance with the Emergency Plan. The Site Vice President fulfills the position of Plant Manager identified in the ISFSI Technical Specifications.

Director Nuclear Station S&L (Safety and Licensing)

The Director Nuclear Station S&L is responsible to the Site Vice President for directing and coordinating nuclear safety issues at the station and ISFSI. The Director Nuclear Station S&L is independent of cost and scheduling concerns associated with operations, maintenance, construction, and modification activities. The Director Nuclear Station S&L is responsible for being cognizant of licensing and regulatory issues, administering the Commitment Tracking System (CTS), coordinating the station quality inspection program, and coordinating activities related to non-radiological environmental protection.

3. Quality Assurance Program

General Description

The objective of the Dominion Quality Assurance Program for Early Site Permit Applications is to comply with the criteria as expressed in 10 CFR 50, Appendix B, as amended, and with the quality assurance program requirements for nuclear power plants as referenced in the Regulatory Guides and ANSI Standards listed in Table 2. This program, its policies and



procedures are described herein: the Early Site Permit Quality Assurance Program; the Nuclear Business Unit Standard (NBUS); and the corporate and station procedures. This program applies to those quality-related activities that involve the functions of safety-related structures, systems, and components associated with the construction of nuclear power stations and those non-safety-related components described in the Site Safety Analysis Report. Where stated, elements of the Operational Quality Assurance Program, VEP-1-5A, Operational Quality Assurance Program Topical Report, will be used to assure compliance with this document. Designated activities may be performed under a contractor's Quality Assurance Program approved by the Dominion Quality Assurance Program. The contractor's Quality Assurance Program when used for activities will comply with the criteria expressed in 10 CFR 50, Appendix B, as amended, and with the Regulatory Guides and ANSI Standards as listed in Table 2.

The goal of this program is to assure the accurate, efficient and detailed development of an Early Site Permit Application in accordance with sound engineering principles.

The program provides written policies, standards, procedures, and instructions covering engineering, design, procurement, periodic surveillance, and supporting tests, for the development of the Application. Nuclear Business Unit (NBU) policies establish commitments to the Quality Assurance Program. Detailed procedures and instructions are issued in accordance with and to meet the requirements of this document. Audit and inspection programs have been implemented to assure that these procedures are being correctly applied.

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

1. Audit to ensure that the overall development of the Application is carried out in accordance with applicable codes and standards, NRC guides and regulations, company policies and commitments.
2. Serve as a management tool for station and corporate management personnel, illuminating problem areas, detecting trends, and providing recommendations regarding solution of problem areas when applicable.
3. Provide all levels of management with an independent source of information regarding the quality aspect of Application development and comment resolution.



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

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

The station staff, under the guidance of the Director Nuclear Station S&L (Safety and Licensing) conducts inspections of work at the stations.

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

Quality Assurance Program

The Dominion Quality Assurance Program for the Early Site Permit Application Development is displayed in a point-by-point comparison to Appendix B, 10 CFR 50 in Table 1.

Identification of Safety Related Design Basis Activities

Safety Related Design Basis Activities are defined as those activities, including sampling, testing, data collection and supporting engineering calculations and reports that will be used to determine the bounding physical parameters of the site. The development of the Application will involve site testing, data collection and calculations that will create or bound safety related design basis data. Site testing and data collection of information pertaining to the physical characteristics of the site will be considered safety related. In addition, calculations and other engineering data that bounds or characterizes the site will be classified as safety related.

Periodic Review of the Quality Assurance Program

Audits of activities required by the Quality Assurance Program for the Early Site Permit Application development will be conducted at least once per 24 months. These audits are performed under the cognizance of the Director of Nuclear Oversight.

Qualification of Nuclear Oversight Personnel

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

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

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

Personnel in the key positions listed will meet or exceed the above requirements or, as an alternative, the applicable requirements of paragraph 4.4.5 of ANSI/ANS 3.1 (Draft 12/79) as clarified in VEP-1-5A, Operational Quality Assurance Program Topical Report.

Qualification of Other Support Personnel

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

Replacement personnel in the key positions listed will meet or exceed the applicable requirements of ANSI/ANS 3.1 (Draft 12/79) as clarified in VEP-1-5A, Operational Quality Assurance Program Topical Report.

Certification of Nuclear Oversight Personnel

The certification of Nuclear Oversight personnel is accomplished in accordance with the Quality Assurance Certification Program. This program provides for the certification and recertification of auditors and lead auditors. The program outlines the qualification and certification requirements for personnel and requires the individual to be certified prior to performing specified audit functions. Nuclear Oversight management has the responsibility to certify audit personnel.

Certification of Other Support Personnel

The certification of maintenance and modification inspection personnel [i.e., Quality Maintenance Team (QMT) and station Quality Control inspectors], Material Verification personnel and Vendor Surveillance personnel is accomplished in accordance with the approved certification programs. These programs outline the qualification and certification requirements of personnel and require the individual to be certified prior to performing specified functions.

Indoctrination and Training

All personnel performing or managing activities affecting quality shall receive indoctrination and training in their job responsibilities and authority, general criteria including applicable codes and standards, regulatory commitments, company procedures and quality assurance program requirements.

A training program will be established for those individuals responsible for work affecting safety related design basis activities.

Records of required training will be maintained in accordance with section 18 of this program.

4. Design Control

The Nuclear Design Control Program (NDCP), delineates procedures to assure that design basis, regulatory requirements, codes and standards are correctly translated into specifications, drawings, procedures, or instructions for those items classified as safety related and that design changes, including field changes, are subject to design control measures commensurate with those applied to the original design and the applicable specified design requirements. Nuclear Standards describe the design control program.



The responsibility for the development, identification of requirements, monitoring, and implementation of an effective design control program is delegated to the Vice President Nuclear Engineering with input as appropriate from Vice President Nuclear Support Services. If changes to the operating units are required to support the development of the Early Site Permit Application, those activities will be governed by VEP-1-5A, Operational Quality Assurance Program Topical Report.

The NDCP provides for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. When a testing program is solely used to test the adequacy of a design, the test will be conducted under adverse design conditions. The provisions of this section assure that individuals other than those who performed the original design perform the verifying or checking process. These individuals are identified and their authority and responsibility is described. The NDCP also identifies the design documents that are required to be reviewed and the personnel responsible for their review and revisions, to assure that design characteristics can be controlled, inspected and tested, and that inspection and test criteria are identified. Design documents, design change documents and revisions thereto are distributed to responsible supervisors to determine whether revisions to controlled design and operating documents are necessary. Design documents and reviews, records and changes thereto are collected, stored and maintained in a systematic and controlled manner.

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

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

Procedures for design controls, analysis, and reviews have as their basis the applicable portions of documents referenced in the Nuclear Design Control



Manual, and include ANSI N45.2.11-1974 as modified in Table 17.2.0 of VEP-1-5A, Operational Quality Assurance Program Topical Report.

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

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

5. Procurement Document Control

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

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

Procurement documents incorporate the design basis technical and quality requirements including the applicable regulatory requirements, component and material identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special



instructions for special processes such as welding, heating treating, non-destructive testing and cleaning as applicable.

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

Procurement documents are prepared, reviewed, and approved as delineated in administrative controls. Copies of procurement documents, or equivalent documents such as Receiving Reports or Requisitioner's Purchase Orders, are retained and are available for review. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

6. Instructions, Procedures and Drawings

Detailed written procedures are established, approved, implemented, and maintained to control development of the Application.

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

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

Changes to procedures require the procedure to be revised before a change can be implemented. The revision process will have the same level of review as the original procedure.



New procedures and procedure revisions are also reviewed using an Activity Screening to determine if any impact exists on the operating unit and if so, whether a safety evaluation is required. If the procedure has an impact on the operating unit, review and approval of the procedure shall be accomplished in accordance with VEP-1-5A, Operational Quality Assurance Program Topical Report. Revisions that do not require a safety evaluation and have no impact on the operating unit are reviewed by cognizant management prior to implementation. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

7. Document Control

Measures are established and documented describing the control of documents, such as procedures, instructions, and drawings, to provide for their review, approval, and issue, and changes thereto, prior to release and to assure they are adequate and the quality requirements are stated. Normally changes to documents are reviewed and approved by the same organizations that performed the original review and approval; however, this responsibility may be delegated to other qualified responsible organizations. Approved changes are incorporated into procedures and drawings and other appropriate documents associated with the change. Procedures and drawings and changes thereto are processed, distributed and controlled. The company maintains a record of all holders of procedures and drawings and an index of all procedures and drawings, listing the current revision date. Instructions require that a copy of the appropriate procedure be available at the activity location prior to the commencement of that activity. These measures are addressed in the Administrative Procedures for each station.

Administrative procedures list certain documents that require strict administrative control for distribution, revision, and routing. These documents are categorized as "Controlled Documents." Examples of controlled documents are Station Procedures, and Station Drawings. Also set forth are the distribution and controlling procedures for design and procurement documents. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based. Record Retention will be in accordance with Table 17.2-2 of VEP-1-5A.

8. Control of Purchased Material, Equipment and Services

An evaluation of suppliers is performed prior to contract award, except in emergency situations where an item or service is needed to preclude development or deterioration of an unsafe condition at the plant, by one or more of the following: (1) A review of the supplier's capability to comply with the elements of 10 CFR 50, Appendix B that are applicable to the type of material, equipment, or service being procured, (2) A review of previous records and performances of suppliers who have provided similar articles of the type being procured, (3) A survey of the supplier's facilities and quality assurance program to determine his capability to supply a product or service which meets the design, manufacturing, and quality requirements, or (4) A review of qualification information supplied by another utility or outside organization.

Surveillance of suppliers during fabrication, inspection, testing, and shipment of materials, equipment, and components is planned and performed in accordance with written procedures to assure conformance to the purchase order requirements as applicable. These procedures provide for:

- a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and those responsible for implementing these instructions. Surveillance shall be performed on those items where verification of procurement requirements cannot be determined on receipt.
- b. Audits and/or inspections which assure that the supplier complies with all quality requirements.

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

Inspections and surveillance of suppliers of nuclear safety-related items is performed under the direction of the Vice President Nuclear Engineering and the Vice President Nuclear Support Services. The results of these actions are documented and filed. The periodic inspections assure that applicable material and equipment received at the station meet the requirements of the specifications, purchase orders, code, drawings, or other purchasing documents. This assurance includes the review of documentation received,

physical inspection, cleanliness, packaging, marking or functional testing, as required.

Purchased items are normally under the control of the Supply Chain Management (Generation) organization. This organization is authorized to contact system organizations and NSSS, A/E contractors and subcontractors through the auspices of system representatives for assistance as required. Verification of these activities is accomplished under the direction of the Director Nuclear Oversight.

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

Documentation concerning the quality of material, components, and equipment received is reviewed by the Vice President's Nuclear Engineering or the Vice President Nuclear Support Services representative for conformance with the Purchase Requisition and Purchase Order. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

9. Identification and control of Materials, Parts and Components

Not applicable to the development of an Early Site Permit

10. Control of Special Processes

Not applicable to the development of an Early Site Permit

11. Inspection

Inspection procedures for those activities affecting quality will be established as appropriate, prior to work being performed. Written procedures will be developed as needed to include inspection hold points.

Examinations, measurements, or tests of materials or components associated with safety-related equipment and systems are performed for each work operation, where necessary, to assure quality. If inspection is impossible or inappropriate, indirect control by monitoring methods, equipment, and



personnel is provided. Both methods are provided when control is inadequate without both.

Examinations, measurements, or tests that require witnessing are identified as "inspection hold" points in procedures. The inspection performed at a hold point is specific in nature; quality characteristics and acceptance/rejection criteria are included or qualitative criteria such as operability checks, compliance with procedural steps, or cleanliness instructions are specified. The inspection is documented by signature or initials on the written procedure form.

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

Maintenance and modification inspection personnel, Material Verification personnel and Vendor Surveillance personnel meet the qualification requirements of ANSI N45.2.6-1978, under NRC Regulatory Guide 1.58 as clarified in VEP-1-5A, Operational Quality Assurance Program Topical Report Table 17.2-0. The inspectors' qualifications are periodically reviewed for recertification.

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

Additionally, inspection activities pertaining to Design Control (Section 4); Procurement Document Control (Section 5); and Corrective Action (Section 17) shall be controlled in accordance with provisions established for this function in the referenced sections contained herein. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

12. Test Control

Testing done in support of the Early Site Permit application development will be controlled by written test procedures. These test procedures will include or reference:

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

Any instrumentation used shall be in a calibration program. This program provides, by the use of equipment history data, status, records, and performance schedules, for the date that calibration is due and indicates the status of calibration. The identity of person(s) performing calibration is provided on the calibration documents. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

13. Control of Measuring and Test Equipment

A program has been established and documented in administrative procedures that describes the calibration technique and frequency, maintenance, and control of all "Measuring and Test Equipment" (portable instruments, tools, gauges, fixtures, reference and transfer standards, and non-destructive test equipment) which are used in the measurement, inspection, maintenance, and monitoring of safety-related components, systems, and structures. Measuring and test equipment does not include: measuring equipment used for preliminary checks or utility troubleshooting

where accuracy is not required. There is also no intention to imply a need for special calibration and control measures of rulers, tape measures, levels, and other basic tools if normal commercial practices provide adequate accuracy. Controls for measuring and test equipment include the transportation, storage, and protection of the equipment; the handling of associated documents giving the status of all items under the calibration system such as maintenance history, calibration test data, and individual log sheets assigned to each device; and the permanent marking of each device by a unique number.

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

If standards are not available or there is some special reason that procedures cannot be followed, the modified procedures and/or interval are documented, including justification. In other cases, rather than require calibration at specified intervals, procedures may specify the device be calibrated prior to use, as in the case of torque wrenches or micrometers. Where permitted by commercially available state of the art equipment, reference standards are no more than 1/4 the error allowed in the measuring and test equipment calibrated by that standard.

Measuring and test equipment used on safety-related systems or equipment are calibrated utilizing reference standards whose calibration has a known valid relationship to nationally recognized standards, such as the National Institute of Standards and Technology (NIST), or accepted values of natural physical constants. If no national standard exists, the basis for calibration is documented. Whether the device is calibrated at the power station or at an NIST traceable outside laboratory, one or more stickers are affixed on a conspicuous surface identifying, but not limited to, date of calibration and next calibration due date.

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

Implementation of the measuring and test equipment programs is assured through Nuclear Oversight audits and through inspections by the appropriate line organizations during performance of work. The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

14. Handling, Storage and Shipping

Not applicable to the development of an Early Site Permit

15. Inspection, Test and Operating Status

Not applicable to the development of an Early Site Permit

16. Nonconforming Materials, Parts, or Components

Not applicable to the development of an Early Site Permit

17. Corrective Action

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

Nuclear Engineering maintains a program to evaluate complex design concerns that may lead to adverse quality conditions at the nuclear stations.

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

The procedures for processing a Deviation Report require that each adverse condition significant to quality be categorized as either requiring a Licensee Event Report, Special Report or NRC Notification or as a non-reportable deviation. Non-reportable deviation refers to deviations not reportable to the Nuclear Regulatory Commission. The reporting requirements differ for each of the categories of deviation but require the appropriate levels of management be notified in each case.

The corrective action program is controlled in accordance with VEP-1-5A, Operational Quality Assurance Program Topical Report. This program will be used to resolve all corrective action items.

Authority to Stop Work

Nuclear Oversight 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 equipment integrity may be jeopardized. This extends to off-site work performed by vendors furnishing safety-related materials and services to the Company.

Imposition of "Stop Work"

A. Nuclear Oversight - The Nuclear Oversight or inspection representative advises the cognizant supervisor or supervisory personnel to stop work in progress whenever they determine that it is not being conducted in accordance with applicable procedures, instructions, guides, or standards or may jeopardize the safe operation of the station. Nuclear Oversight representatives inform the Director Nuclear Oversight of the stop work order. Inspection personnel inform the Director Nuclear Station S&L of the stop work order. The Director Nuclear Oversight or the Director Nuclear Station S&L then notifies the Vice President Nuclear Support Services of the decision to stop work because of adverse quality conditions.

B. Vice President Nuclear Support Services - The Vice President Nuclear Support Services evaluates the determination to stop work.

1. If the Vice President Nuclear Support Services concurs with the decision to stop work, the necessary corrective action is initiated.

Only after the discrepancy has been corrected and the corrective action approved by the initiating organization does work resume.

2. In the event the Vice President Nuclear Support Services does not concur with the decision to stop work, direction may be given to resume work by notifying the Director Nuclear Oversight and the appropriate supervisory personnel in the organization of the decision. The issue shall also be referred to the Senior Vice President and Chief Nuclear Officer for review and approval.

C. Senior Vice President and Chief Nuclear Officer - The Senior Vice President and Chief Nuclear Officer is responsible for approving or disapproving the Vice President Nuclear Support Services' decision in those cases where the Senior Vice President and Chief Nuclear Officer does not concur with the decision to resume work following a stop work order.

D. Director Nuclear Oversight - The Director Nuclear Oversight may refer any issues concerning the handling of "stop work" to the Senior Vice President and Chief Nuclear Officer. The Director Nuclear Oversight may direct imposition of "stop work" whenever such action is deemed to be appropriate. Imposition of offsite "stop work" performed by vendors shall be controlled by appropriate administrative procedures.

18. Quality Assurance Records

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

VEP-1-5A, Operational Quality Assurance Program Topical Report will govern the requirements and commitments for the retention and storage of Quality Assurance Records.

19. Audits

Internal audits of selected aspects of construction phase activities are performed with a frequency commensurate with safety significance and in a manner which assures that biennial (2 years) audits of safety-related activities are completed. In addition, due to the relatively short nature of the application development process, an audit will be scheduled of the project prior to



application submittal. 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.

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

The results of each audit are reported in writing to the Project Manager, the Vice President Nuclear Support Services and the Senior Vice President and Chief Nuclear Officer. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

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

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



accordance with established escalation procedures. The escalation of external audit issues identified by Nuclear Oversight is controlled by administrative procedures. The responsibility for analyzing audit reports for trends and effectiveness lies with the Director Nuclear Oversight. As trends are discovered or if the effectiveness of the program is in question, the analysis of the Director Nuclear Oversight is forwarded to the management level consistent with the seriousness of the problem.

The Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing this section are based.

20. Issuance and Revision of the Early Site Permit Application Development QA Manual

Until the submittal of the Early Site Permit Application, the administrative control of this manual will be the responsibility of the Project Manager – Early Site Permit Project. This manual will be revised as appropriate to incorporate additional commitments as they are established during the application development process. New revisions to the manual will be reviewed, at a minimum, by the Project Manager - Early Site Permit Project, and the Director of Nuclear Oversight and approved by the Vice President, Nuclear Support Services.

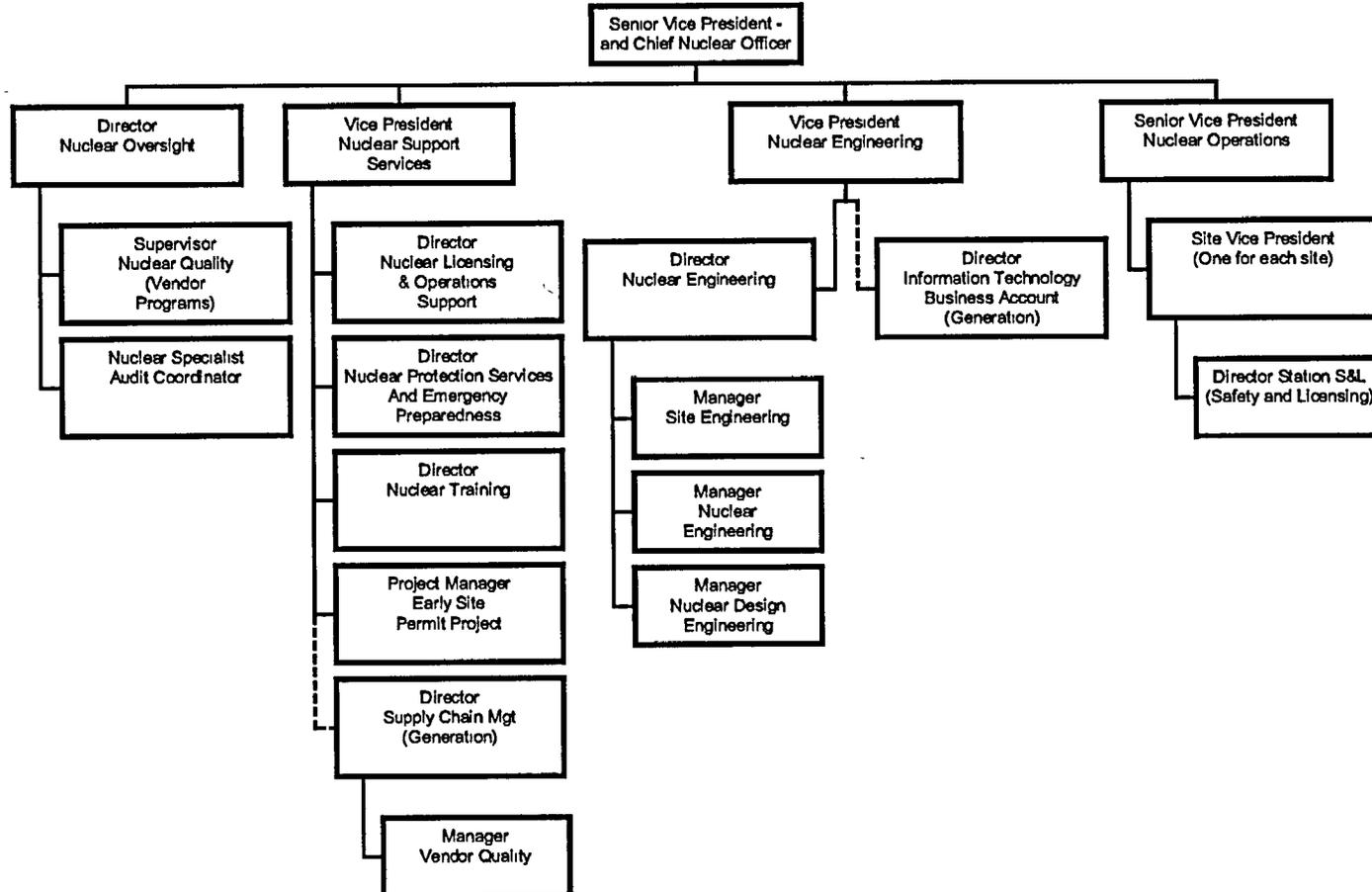
Distribution of this manual will be controlled in accordance with Section 7.



Appendix A
FIGURES



Figure 1
NUCLEAR ORGANIZATION





**Appendix B
TABLES**

Table 1
 Relationship of the Early Site Permit Application Development QA Manual to
 Appendix B, 10 CFR 50

Appendix B 10 CFR 50 Criterion	QA Manual Section	Title	Abstract
I	2	Organization	Defines the relationship of departments to the quality assurance effort associated with the development of an ESP
II	3	Quality Assurance Program	Defines the Construction Quality Assurance program, its overall responsibility and provisions.
III	4	Design Control	Defines the policy, responsibility and procedures for exercising design control
IV	5	Procurement Document Control	Establishes the policy for procurement control
V	6	Instructions, Procedures and Drawings	Establishes guidelines for preparing instructions, procedures and drawings
VI	7	Document Control	Establishes policy for control of procedures, documents and instructions
VII	8	Control of Purchased Material, Equipment and Services	Establishes methods for assuring that purchased items conform to the specified quality requirements
VIII	9	Identification and Control of Material, Parts and Components	Not applicable to ESP Development
IX	10	Control of Special Processes	Not applicable to ESP Development
X	11	Inspection	Establishes a program for inspection activities affecting quality

Table 1 (continued)
 Relationship of the Early Site Permit Application Development QA Manual to
 Appendix B, 10 CFR 50

Appendix B 10 CFR 50 Criterion	QA Manual Section	Title	Abstract
XI	12	Test Control	Establishes a program to control testing through written test procedures
XII	13	Control of Measuring and Test Equipment	Establishes a policy for control and calibration of test and measuring equipment
XIII	14	Handling, Storage and Shipment	Not applicable to ESP Development
XIV	15	Inspection, Test, and Operating Status	Not applicable to ESP Development
XV	16	Non-Conforming Material, Parts and Services	Not applicable to ESP Development
XXVI	17	Corrective Action	Establishes the policy for identifying, documenting, notifying, determining causes and preventing defects from occurring
XVII	18	Quality Assurance Records	Assures maintenance, identification, and retrieveability of records
XVIII	19	Audits	Defines policy and procedures for audit programs



Table 2

Regulatory Guide and ANSI Standard Compliance

As detailed in those identified specific sections, the Operational Quality Assurance Program Topical Report, VEP-1-5A, Table 17.2-0 contains the standards, requirements or guides from which the procedures implementing those sections are based.

This table will document the Standards, Requirements, or Regulatory Guides that are applicable to the Early Site Permit, the design developed in support thereof and any exceptions or clarifying notes to them. This table will be revised to include those items as they are identified during the design process.