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SOUTHERN COMPANY
Energy to Serve Your World℠

AR-06-1308

June 23, 2006

U. S. Nuclear Regulatory Commission.
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Southern Nuclear Operating Company
Pre-docketing Phase for Early Site Permit Application

Ladies and Gentlemen:

In November 2005, Southern Nuclear Operating Company (SNC) provided the NRC with a copy of the Early Site Permit (ESP) Quality Assurance Manual, Version 1.0. Subsequent to the initial ESP QA Manual submittal, SNC has made organizational changes to further support nuclear development activities. As a result of the organizational changes and SNC's development of a QA Topical Report for operations, SNC has rewritten the Quality Assurance Manual that addresses ESP activities. In addition, NRC comments on the previous ESP QA Manual were considered as appropriate in this revision. The title of the ESP Quality Assurance Manual has been changed to Nuclear Development Quality Assurance Manual (NDQAM), Version 2.0. The NDQAM has been patterned after the SNC QA Topical Report which is scheduled for submittal later this summer. The NDQAM will continue to be revised to address organizational changes and expanded responsibilities as appropriate. The most current version of the NDQAM will be submitted as part of the ESP application in August.

If you have any questions regarding this review of the NDQAM, please contact Mr. Charles R. Pierce at (205) 992-7872.

Sincerely,

J. A. "Buzz" Miller
Senior Vice President Nuclear Development

CRP/JTD/

Enclosure

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Q004

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Southern Nuclear Operating Company
Pre-docketing Phase for Early Site Permit Application

AR-06-1308
Enclosure

Southern Company Nuclear Development Quality Assurance Manual

SOUTHERN NUCLEAR OPERATING COMPANY, INC

POLICY STATEMENT

Southern Nuclear Operating Company, Inc. (SNC) shall design, procure and construct nuclear plants 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 Operating Licenses, and applicable laws and regulations of the state and local governments.

The SNC Nuclear Development Quality Assurance Program (NDQAP) described in the SNC Nuclear Quality Assurance Manual (NDQAM) and associated implementing documents provide for control of SNC activities that affect the quality of safety related nuclear plant structures, systems, and components and includes all planned and systematic activities necessary to provide adequate confidence that such structures, systems, and components will perform satisfactorily in service. The NDQAP 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 NDQAM is the top-level policy document that establishes the manner in which quality is to be achieved and presents SNC's 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 NDQAM. Compliance with the NDQAM and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the SNC NDQAP.

Signed _____
J. Barnie Beasley
President and Chief Executive Officer
Southern Nuclear Operating Company, Inc.

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PART I INTRODUCTION

SECTION 1 GENERAL

This Southern Nuclear Operating Company, Inc., (SNC) Nuclear Development Quality Assurance Manual (NDQAM) is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for plants designed and constructed by SNC. The NDQAM describes the methods and establishes quality assurance program and administrative control requirements that meet 10CFR50, Appendix B. The NDQAM is based on the requirements of ASME NQA–1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I and II, except as specified in this NDQAM.

The Nuclear Development Quality Assurance Program (NDQAP) is defined by the NRC approved regulatory document that describes the quality assurance program elements (the NDQAM), along with the associated corporate, site, and supplier implementing documents. Certain common program elements, procedures and organizations described in the NDQAM exist for currently operating SNC nuclear plants. Procedures and instructions that control Nuclear Development activities that are not addressed by existing SNC procedures and instructions will be developed prior to commencement of those activities. Corporate Policies and Guidelines establish high level responsibilities and authority for carrying out important administrative functions which are outside the scope of the NDQAP. Nuclear fleet wide procedures establish practices for certain activities which are common to all SNC organizations performing those activities such that the activity is controlled and carried out in a manner that meets NDQAP requirements. Site or organization specific procedures establish detailed implementation requirements and methods, and may be used to implement Corporate Policies and Guidelines and nuclear fleet wide procedures or be unique to particular functions or work activities.

1.1 Scope / Applicability

This NDQAM applies to activities affecting the quality and performance of safety-related structures, systems, and components, including, but not limited to:

Designing	Receiving	Testing
Constructing	Storing	Licensing
Procuring	Erecting	Startup
Fabricating	Installing	ESP Development
Cleaning	Repairing	COL Development
Handling	Training	
Shipping	Inspecting	

This manual is initiated for the development of ESP applications and may be revised as the Nuclear Development organization and related activities evolve. The NDQAM applies to these activities until turnover to SNC Operations. It does not apply to SNC's operating units at Plants Farley, Hatch and Vogtle.

Safety related systems, structures, and components, under the control of the NDQAM, 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 NDQAP may be applied to certain activities where regulations other than 10CFR50 establish QA program requirements for activities within their scope.

The policy of SNC 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 Quality Assurance Program are also applied to certain equipment and activities that are not safety related or important to safety, but support safe, economic, and reliable plant operations, or where other NRC guidance establishes program requirements. These include, but may not be limited to security and fire protection. Implementing documents establish program element applicability.

1.2 Responsibilities

SNC personnel engaged in activities described in this NDQAM shall comply with the requirements of the Nuclear Development Quality Assurance Program. Contractors, suppliers or other organizations supporting SNC, are required to comply with the NDQAP established by this NDQAM, or with their own programs determined by SNC to include sufficient controls to meet the applicable requirements of 10CFR50, Appendix B. All facilities shall be designed and constructed in compliance with the applicable Code of Federal Regulations and the applicable laws and regulations of the state and local governments in which the facility is located.

Quality assurance personnel have the authority to stop work actions when they perceive that work is not progressing in a manner that meets the quality assurance program.

1.3 Interfaces with Owners

Agreements exist between Southern Nuclear Operating Company, Inc. and the nuclear power plant owner organizations to establish responsibilities and authorities for the design and construction of said facilities.

1.4 NQA-1-1994 Commitment

- In establishing, implementing, and maintaining the NDQAM, SNC commits as described in this NDQAM to compliance with ASME NQA-1-1994. NDQAM revisions are reviewed by the SNC QA Manager and approved by the SNC Senior Vice President Nuclear Development. Changes to this NDQAM will be governed by and made in accordance with Part II, Section 2.5.

PART II QUALITY ASSURANCE PROGRAM DETAILS

SECTION 1 ORGANIZATION

This Section describes the SNC organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying NDQAP implementation. The organizational structure includes corporate and onsite functions for nuclear development. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of this

NDQAM. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

The SNC Nuclear Development (ND) organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within SNC which implement and support the NDQAP. These organizations include, but are not limited to Nuclear Development, Technical Support, Corporate Services, Nuclear Fleet Security and Emergency Preparedness, General Counsel, and Quality Assurance.

Design, engineering and environmental services are provided to the SNC Nuclear Development Organization by three primary contractors in accordance with their Quality Assurance Programs. These three contractors are Bechtel Power Corporation, Inc. (Bechtel), Westinghouse Electric Company LLC (Westinghouse), and Tetra Tech NUS, Inc. (TtNUS).

The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting the Nuclear Development QA Program. The Southern Nuclear Organization and the Nuclear Development Organization are shown in Figures II.1-1 and II.1-2 respectively.

1.1 President and CEO

The president/CEO is responsible for all aspects of design and construction of Southern Company's nuclear plants. The president/CEO is also responsible for all technical and administrative support activities provided by SNC and contractors. The president/CEO directs the chief nuclear officer/executive vice president, the senior vice president-nuclear development, the vice president and general counsel, the vice president corporate services, and the vice president technical support in fulfillment of their responsibilities. The president/CEO reports to the SNC Board of Directors with respect to all matters.

1.2 Nuclear Development

Southern Nuclear Operating Company, Nuclear Development (ND) organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operational development activities.

1.2.1 Senior Vice President – Nuclear Development

The Senior Vice President - Nuclear Development (SVPND) reports to the SNC President and Chief Executive Officer (CEO) and is responsible for the administration of the Nuclear Development QA Program described in this manual. The SVPND also directs the planning and development of the Nuclear Development staff, and organization resources. The SVPND is also responsible for establishing and managing the Westinghouse contract for the development of new nuclear generation.

1.2.1.1 Nuclear Technology and Start-up Director

The Nuclear Technology and Start-up Director (NTSD) reports to the Senior Vice President – Nuclear Development and is responsible for new plant standardized design and support for

construction, start-up and operations development, including initial operations staffing and training.

1.2.1.2 Vogtle Deployment Director

The Vogtle Deployment Director (VDD) reports to the Senior Vice President – Nuclear Development and is responsible for the effective implementation of the NDQAP for Vogtle site new nuclear plant licensing, procurement, and construction activities. The VDD is responsible for ESP and COL license applications and the supporting site specific engineering activities. The VDD is responsible for the planning and oversight of new Vogtle nuclear plant construction and procurement activities

1.2.1.2.1 Vogtle Licensing Manager

The Vogtle Licensing Manager (VLM) reports to the Vogtle Deployment Director and is responsible for the effective implementation of the NDQAP for the Vogtle site new nuclear plant licensing activities. The VLM has overall authority for all activities supporting development of the ESP and COL applications including licensing and license engineering activities. The VLM and his staff are responsible for managing the principal contractors and all contractor-related activities, such as site specific engineering, collecting and analyzing data, conducting testing for site suitability, and developing application content. The VLM and his staff are responsible for coordinating actions of the principal contractors (Bechtel and TtNUS), Southern Company and SNC resources supporting development of license applications. The VLM and his staff are also the primary interface with the NRC staff during the ESP and COL review process.

1.3 Technical Support

The Technical Support organization is responsible for support of Nuclear Development organization by providing engineering, licensing and document control support where applicable.

1.3.1 Vice President – Technical Support

The Vice President - Technical Support reports to the SNC President and CEO and is responsible for the administration of engineering, nuclear fuel and special projects activities supporting the NDQAP activities.

1.3.1.1 Vice President Engineering

The Vice President Engineering reports to the Vice President Technical Support and has corporate responsibility for SNC Engineering activities supporting the NDQAP for new nuclear generation through Plant Support and Engineering Administrative Services activities.

1.3.1.1.1 Plant Support

The Plant Support Manager reports to the Vice President Engineering and has corporate responsibility for SNC Plant Support activities supporting the NDQAP through the Probabilistic Risk Assessment (PRA) section, and Nuclear Licensing section.

The PRA Services Supervisor reports to the Plant Support Manager. The PRA section is responsible for providing specialized engineering and technical services in the areas of licensing and regulatory support. PRA Services will specifically support the Nuclear Development organization in the completion of the Westinghouse AP1000 PRA models for the new nuclear plants.

The Nuclear Licensing Manager reports to the Plant Support Manager. Nuclear Licensing performs both plant specific and generic licensing activities for the SNC operating units. Nuclear Licensing will support Nuclear Development through licensing activities addressing impacts to the existing Vogtle Units and through support of industry efforts related to new nuclear generation. Nuclear Licensing will also support Nuclear Development licensing activities after issuance of the COL.

1.3.1.1.2 Engineering Administrative Services

The Engineering Administrative Services Manager reports to the Vice President Engineering. The Engineering Administrative Services department is comprised of the Document Services and the Technical Training sections.

The Document Services section is responsible for control and management of engineering documents. This includes record scanning, database indexing, and creating and distributing compact disks (CDs). Document Services will provide document control services for Nuclear Development.

The Technical Training section is responsible for developing, coordinating, tracking and administering technical training for corporate organizations. Technical Training will be responsible for maintaining records of staff training as well as the development of curriculum for initial and ongoing staff training. Technical Training will provide support for Nuclear Development.

1.3.1.2 Nuclear Fuel

The Nuclear Fuel Manager reports to the Vice President - Technical Support. The Nuclear Fuel department is comprised of the Core Analysis, Nuclear Fuel Services and Fuel Performance sections. Nuclear Fuel will provide fuel design and procurement for Nuclear Development.

1.4 Corporate Services

The Corporate Services organization is responsible for supporting the Nuclear Development organization through performing activities related to procurement safety and health and information technology where applicable.

1.4.1 CFO and Vice President Corporate Services

The Chief Financial Officer (CFO) and Vice President Corporate Services, reports to the SNC President and Chief Executive Officer and is responsible for managing the overall Corporate Services organization including assuring that Supply Chain Management, Safety and Health and Information Technology support Nuclear Development activities in accordance with the NDQAP.

1.4.1.1 Supply Chain Management

The Supply Chain General Manager reports to the CFO and Vice President Corporate Services and is responsible for the effective management of the Supply Chain Management organization supporting Nuclear Development activities. The Supply Chain Management Department is responsible for the preparation of procurement documents for purchasing materials and services for SNC. In support of this effort, Supply Chain Management is responsible for preparing, with appropriate input from engineering, procurement documents for purchasing certain materials, components, equipment, and services which will include provisions for material identification and control. Supply Chain Management is also responsible for the review of these specifications for adequacy of identification, control, technical, and quality requirements. Similarly, Supply Chain Management reviews and approves information included in procurement documents to verify inclusion of adequate technical and quality requirements.

1.4.1.2 Safety and Health

Safety and Health reports to the CFO and Vice President Corporate Services and is responsible for coordinating the overall Fitness-for-Duty (FFD) program among SNC management, the corporate staff, the staff at each of the SNC nuclear plants and the Nuclear Development organization. In this capacity, Safety and Health administers the FFD program's random selection process; performs drug and alcohol testing at the corporate office and at each SNC nuclear plant pursuant to 10 CFR 26; "Fitness for Duty Programs"; ensures that testing procedures are in place; trains the FFD staff; and maintains associated training records.

In addition, Safety and Health develops policies and procedures to ensure a safe and healthy workplace and compliance with standards established by the Occupational Safety and Health Administration.

1.4.1.3 Southern Company Services (SCS) Information Technology (IT)

The SCS IT Group Manager is responsible for SNC IT activities and reports administratively to the Regional Chief Information Officer-Generation and functionally to the SNC CFO and VP Corporate Services. The SCS IT Group Manager shall provide support to the Nuclear Development organization including but not limited to applications, servers, tape backup, voice and data, network infrastructure hardware, and emergency communication hardware. The IT Group Manager will provide support to Technical Support or Corporate Services under this QAP and associated SNC procedures for software control, SyncPowr disaster prevention/recovery, and emergency preparedness. The IT Group Manager is also responsible for maintaining controls for SNC software applications which are not required to be maintained under the SNC program described herein.

1.5 Executive Vice President Nuclear

The Executive Vice President Nuclear is the Chief Nuclear Officer (CNO) and is responsible for the safe, reliable, and efficient operation of SNC nuclear plants. The CNO directs the operating plants' Vice Presidents - Project (Vogtle, Hatch and Farley), Nuclear Fleet Security and Emergency Preparedness Manager, and the Quality Assurance Manager. The Executive Vice President will support Nuclear Development activities through the Vice President – Vogtle, the Nuclear Fleet Security and Emergency Preparedness organization, and the Quality Assurance organization.

1.5.1 Vice President – Project

The Vice Presidents - Project report to the Executive Vice President - Nuclear and are responsible for the overall safe and efficient operation of their operating plant, and for the implementation of quality assurance requirements in the areas specified by the operations Quality Assurance program.

For the purposes of this program, the description of the duties of the Vice Presidents – Project and their staff will be limited to those site activities that support the Nuclear Development new nuclear generation activities.

1.5.1.1 Site Project Organization

The Site Project Organization is responsible for operations and maintenance of the respective plant site. The Site Project Organization is responsible for operations quality inspection activities of operations on-site work, including any that support Nuclear Development ESP and COL application development, as well as controlling interfaces between the operating units and any preconstruction or construction activities.

1.5.2 Nuclear Fleet Security and Emergency Preparedness

The Nuclear Fleet Security and Emergency Preparedness (NFSEP) Manager reports to the Executive Vice President – Nuclear and is responsible for management of the NFSEP organization and the overall coordination of fleet security activities and programs, the corporate emergency planning programs (including the common Emergency Operations Facility) and the Access Authorization program. The Nuclear Fleet Security and Emergency Preparedness Manager will also have responsibility for site emergency response communication. The NFSEP organization is responsible for providing information and support concerning emergency plans and security to the Nuclear Development organization.

For the Access Authorization Program, the Nuclear Fleet Security and Emergency Preparedness Manager shall assure compliance with 10 CFR 73.56 (Access Authorization), NRC Order EA-02-261, dated January 7, 2003 (Compensatory Measures Related to Access Authorization Program); 10 CFR 73.57 (Criminal History Check); and 10 CFR 26 (Pre-access drug/alcohol testing and suitable inquiries.)

1.5.3 Quality Assurance

The SNC Quality Assurance Organization is responsible for independently planning and performing activities to verify the development and effective implementation of the SNC quality assurance programs including but not limited to nuclear development, engineering, licensing, document control, corrective action program and procurement that support new nuclear plant generation.

1.5.3.1 Quality Assurance Manager

The Quality Assurance Manager reports to the Executive President - Nuclear for the operations activities and to the Senior Vice President – Nuclear Development for the new reactor activities and is responsible for developing and maintaining the SNC quality assurance programs, evaluating compliance to the programs and managing the QA organization resources.

1.5.3.1.1 Nuclear Development Quality Assurance Project Engineer

The Nuclear Development Quality Assurance Project Engineer (NDQAPE) reports administratively to the SNC QA Manager and functionally to the Senior Vice President – Nuclear Development, and is responsible for the development and verification of implementation of the NDQAP described in this manual. The NDQAPE is responsible for assuring compliance with regulatory requirements and procedures through audits and technical reviews; for monitoring organization processes to ensure conformance to commitments and licensing document requirements; for ensuring that vendors providing quality services, parts and materials to SNC are meeting the requirements of 10CFR50 Appendix B through NUPIC or SNC vendor audits. The NDQAPE has sufficient independence from other nuclear development priorities to bring forward issues affecting safety and quality and makes judgments regarding quality in all areas necessary regarding Southern Nuclear's Nuclear Development activities. The NDQAPE may make recommendations to the Nuclear Development management regarding improving the quality of work processes. If the NDQAPE disagrees with any actions taken by the ND organization and is unable to obtain resolution, the NDQAPE shall inform the QA Manager and bring the matter to the attention of the Senior Vice President - Nuclear Development who will determine the final disposition.

1.5.3.1.2 Quality Assurance Supervisor (Corporate)

The Quality Assurance Supervisor (Corporate) reports to the Quality Assurance Manager and is responsible for supporting evaluations of the quality programs of suppliers and contractors performing Nuclear Development activities within the scope of the NDQAP. This is accomplished by scheduling and conducting triennial external audits, annual supplier quality assurance program evaluations, reviewing audits conducted by external organizations (e.g., other utilities and the Nuclear Procurement Issues Committee), and maintenance of the Qualified Suppliers List. In addition, the Quality Assurance Supervisor is responsible to the Quality Assurance Manager for assuring compliance with the corporate Quality Assurance program, administration of the internal audit program, and supervising and interfacing with corporate Quality Assurance personnel.

1.6 Vice President and General Counsel

The Vice-President and General Counsel reports to the SNC President and CEO and is responsible for managing the various functions associated with general counsel, compliance officer, and external affairs. Reporting to this position is the Manager of Environmental Affairs.

1.6.1 Environmental Affairs

The Environmental Affairs Manager reports to the Vice President and General Counsel and is responsible for managing environmental issues such as radiological environmental, non-radiological environmental, dose and shielding calculations, and low level radioactive waste functions supporting the Nuclear Development organization. Environmental Affairs is responsible for providing various licensing, engineering and environmental related services in support of the Nuclear Development organization.

1.7 Westinghouse Electric Company, LLC

Westinghouse Electric Company, LLC (Westinghouse) provides engineering services for plant design and licensing of Westinghouse AP-1000 plants on Southern Company sites. These

engineering services for new nuclear generation include site specific engineering and design necessary to support development of ESP and COL applications, preconstruction and construction activities.

1.8 Bechtel Power Corporation, Inc.

Bechtel Power Corporation, Inc (Bechtel) provides engineering services for the development of the ESP and COL applications. These engineering services include site specific license engineering, and design activities necessary to support development of the ESP and COL applications, and planning and support for preconstruction and construction of new nuclear generation.

1.9 Tetra Tech NUS, Inc.

Tetra Tech NUS, Inc (TtNUS) provides environmental services to the Nuclear Development organization in support of the development of the ESP and COL applications. These environmental services include site specific investigation and analysis necessary to support development of the ESP and COL applications, and planning and support for preconstruction and construction of new nuclear generation.

1.10 NQA-1-1994 COMMITTMENT

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

Figure II.1-1

SNC Organization

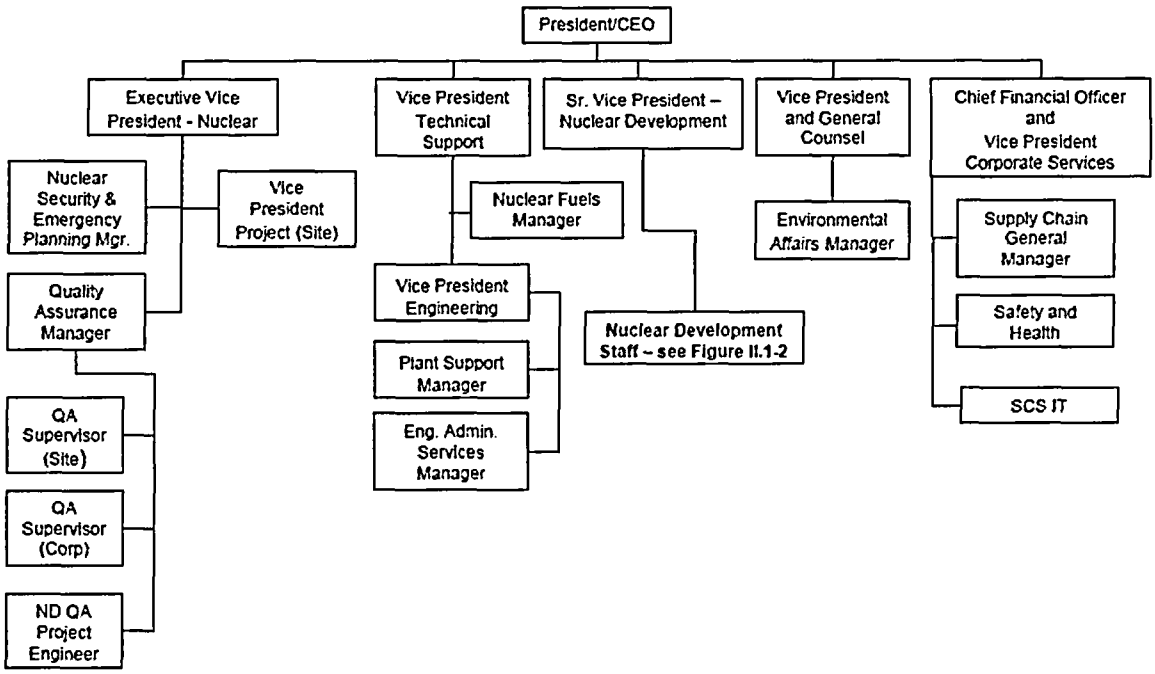
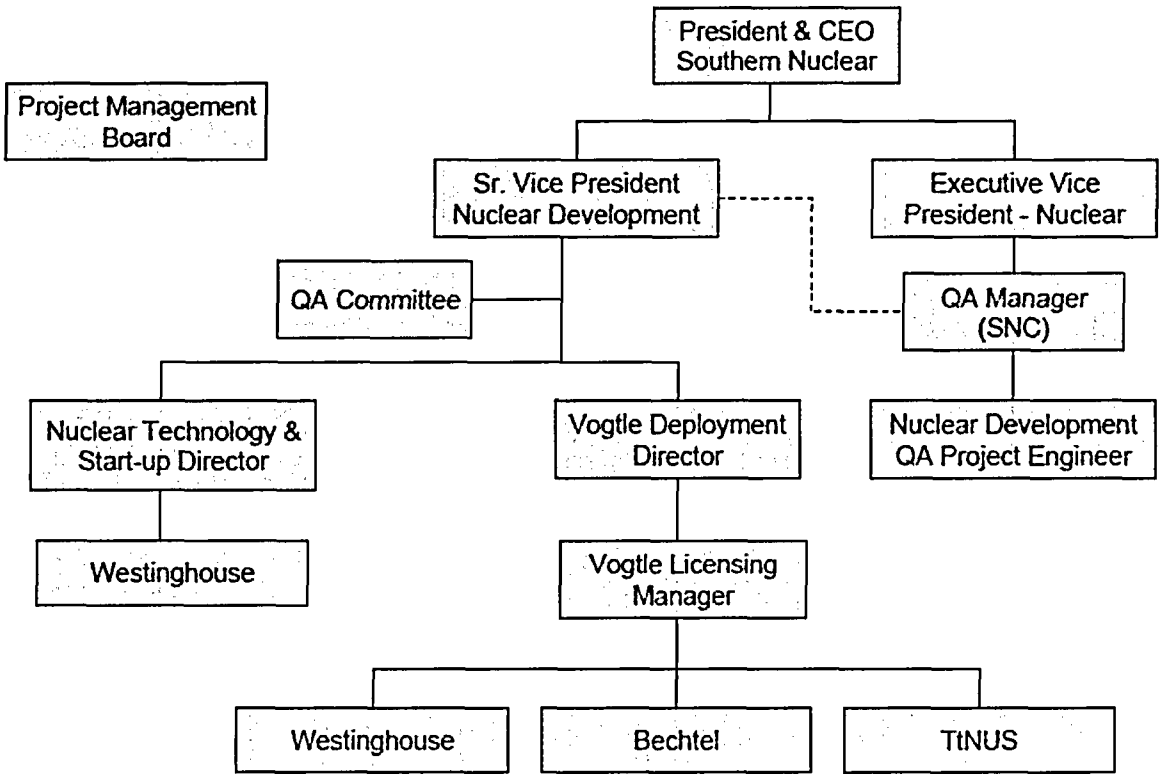


Figure II.1-2

Nuclear Development Organization



SECTION 2 QUALITY ASSURANCE PROGRAM

SNC has established the necessary measures and governing procedures to implement the NDQAP as described in the NDQAM. SNC is committed to meeting this NDQAP in all aspects of work that are important to the safety and reliability of the nuclear plants as described and to the extent delineated in this NDQAM. Further, SNC ensures through the systematic process described herein that its suppliers of safety related equipment or services meet the applicable requirements of 10CFR 50, Appendix B. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the NDQAP through the audit functions described in the Audit Section of this NDQAM.

The objective of the NDQAP is to assure that SNC nuclear generating plants 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 manual. The NDQAP applies to those quality-related activities that involve the functions of safety-related structures, systems, and components (SSCs) associated with the design, licensing and construction of new nuclear power plants as described in the ESP Site Safety Analysis Report and COL Final Safety Analysis Report. Examples of ESP/COL program safety-related activities include, but are not limited to, site specific engineering related to safety related SSCs, site geotechnical investigations, site engineering analysis, seismic analysis, and meteorological analysis. Cost and scheduling functions do not prevent proper implementation of the NDQAP.

Delegated responsibilities may be performed under a supplier's or principal contractor's Quality Assurance Program that has been approved by the SNC Quality Assurance organization. Periodic audits and assessments of supplier QA programs are performed to assure compliance with the approved program and implementing procedures. In addition, routine interfaces with project personnel assure that quality expectations are met.

For the ESP and COL applications, this Quality Assurance Program applies to those Nuclear Development and SNC activities that can affect either directly or indirectly the safety-related site characteristics or analysis of those characteristics. In addition, this QAP applies to engineering activities that are used to characterize the site or analyze that characterization.

New nuclear plant construction will be the responsibility of SNC's Nuclear Development organization. Westinghouse is the AP1000 reactor design authority for the Vogtle Electric Generating Plant (VEGP) site and will be the construction contractor for the new plants. Detailed engineering specifications and construction procedures will be developed to implement the NDQAP and Westinghouse QA programs prior to commencement of preconstruction (ESP) and/or construction (COL) activities. Examples of Limited Work Authorization (LWA) 1 and LWA 2 activities that could impact safety-related SSCs would include impacts of construction to existing facilities and for construction of new plants, the design interface between non safety-related and safety-related SSCs and the placement of seismically designed backfill.

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

2.1 Responsibilities

Personnel who work directly or indirectly for SNC are responsible for the achievement of acceptable quality in the work covered by this NDQAM. This includes those activities delineated in Part I, Section 1.1 of this NDQAM. SNC personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the NDQAP 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 Quality Assurance Manager is responsible to verify that processes and procedures comply with NDQAM and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

2.2 Delegation of Work

SNC retains and exercises the responsibility for the scope and implementation of an effective NDQAP. Positions identified in the Organization Section of this NDQAM 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 and COL Identification of Site Specific Safety Related Design Basis Activities

ESP site specific 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 SNC ESP and COL applications will involve 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 will be classified as safety related. The ND organization will develop an ESP application Design Criteria Document (DCD) identifying the sections of the application that include safety-related design basis activities. In addition the DCD will identify those sections of the application and supporting analysis that will be treated with appropriate quality requirements. The ND organization will develop annotated outlines for the COL application that will identify the sections safety classification and the regulatory requirements applicable to the section content.

2.4 Periodic Review of the Quality Assurance Program

Reviews of the status and adequacy of the Nuclear Development Quality Assurance Program and its implementation will be conducted on an ongoing basis via senior management review of quality assurance audit reports. The senior management review will also include reviews by the SNC Nuclear Development Quality Assurance Committee.

2.5 Issuance and Revision to NDQAM

Administrative control of the NDQAM will be the responsibility of the ND Quality Assurance Project Engineer. Changes to the NDQAM are evaluated by the ND Quality Assurance Project Engineer to ensure that such changes do not degrade previously approved quality assurance controls specified in the NDQAP. This manual shall be revised as appropriate to incorporate additional QA commitments that may be established during the ESP and COL application development process. New revisions to the manual will be reviewed, at a minimum, by the SNC Quality Assurance Manager and approved by the Senior Vice President - Nuclear Development.

2.6 Personnel Qualifications

Personnel assigned to implement elements of the NDQAP shall be capable of performing their assigned tasks. To this end SNC establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the NDQAP to assure that suitable proficiency is achieved and maintained. Plant and support staff minimum qualification requirements are as delineated in each site's Technical Specifications. Other qualification requirements may be established but will not reduce those required by Technical Specifications. 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 SNC procedures. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards, and the NDQAP elements to be employed. Training for positions identified in 10 CFR 50.120 is accomplished according to programs accredited by the National Nuclear Accrediting Board of the National Academy of Nuclear Training that implement a systematic approach to training. Records of personnel training and qualification are maintained.

The minimum qualifications of the Quality Assurance Manager and the Nuclear Development Quality Assurance project Engineer are that each holds an engineering degree and has a minimum of five year's experience in the areas of engineering, field construction, or plant operations. Two of these five years must involve working under a nuclear quality assurance program.

2.7 NQA-1-1994 Commitment / Exceptions

- In establishing qualification and training programs, SNC 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
        - SNC 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:
            - (1) In lieu of being certified as Level I, II, or III in accordance with NQA-1-1994, personnel performing operations phase 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 determine who will be responsible for performing the inspections), evaluating inspection training programs, nor certifying inspection personnel.

- (2) 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, SNC will follow the applicable standard cited in the version(s) of Section III of the ASME Boiler and Pressure Vessel Code approved by the NRC for use at SNC sites.

- 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 SNC, 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

SNC 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 NDQAM. The design process includes provisions to control design inputs, outputs, changes, interfaces, records and organizational interfaces within SNC 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 SNC 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 SNC design organization or by other organizations so authorized by SNC.

In addition, temporary design changes (temporary modifications), such as temporary bypass lines, electrical jumpers and lifted wires, and temporary trip-point settings, are controlled by procedures that include requirements for appropriate installation and removal verifications and status tracking.

3.1 Design Verification

SNC design processes provide for design verification to ensure that items and activities subject to the provisions of this NDQAM 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, 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.

SNC 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

SNC 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 NDQAP 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. SNC 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 approved by designated SNC and supplier management and listed in a software register for identifying active quality related applications. This NDQAP 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 NDQAP requirements such as QA records.

3.4 NQA-1-1994 Commitment

In establishing its program for design control and verification, SNC commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1.

SECTION 4 PROCUREMENT DOCUMENT CONTROL

SNC has established the necessary measures and governing procedures to assure that purchased items (components, spares and replacement parts necessary for plant design and construction) and services are subject to quality and technical requirements at least equivalent to those specified for original equipment or specified by properly reviewed and approved revisions to the original requirements to assure the items are suitable for the intended service, and are of acceptable quality, consistent with their effect on safety. 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 10CFR21) are invoked for procurement of items and services. 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 quality assurance program consistent with the applicable requirements of this NDQAM.

4.1 Reviewer Qualification

Reviews required by this Section 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.

4.2 NQA-1-1994 Commitment

In establishing controls for procurement, SNC commits to compliance with NQA-1-1994, Basic Requirements 4 and Supplements 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 quality assurance program that implements NQA-1-1994, Part 1. In lieu of this requirement, SNC may require suppliers to have a documented supplier quality assurance program 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, SNC procurement documents may allow the supplier to work under the SNC quality assurance program, including implementing procedures, in lieu of the supplier having its own quality assurance program.

  - 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.

SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

SNC 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 NDQAP as described in

the NDQAM. Such documents are prepared and controlled according to Part II, Section 6 of this NDQAM. 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

The SNC 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 NDQAM. 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.

Administrative procedures prescribe the methods whereby procedures can be temporarily revised without undue delay when the need arises. These temporary procedure revisions may not change intent of the approved procedure. Such revisions are documented and approved by the appropriate management within 14 days of implementation. 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 procedures are logged describing the prevailing conditions and reasons for the action taken.

5.2 NQA-1-1994 Commitment

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

SECTION 6 DOCUMENT CONTROL

SNC 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 are controlled to assure that correct documents are being employed. Such documents, including changes thereto, shall be reviewed for adequacy and approved for release by authorized personnel. The control system shall be documented and shall provide for (a) through (c) below:

(a) identification of documents to be controlled and their specified distribution;

(b) identification of assignment of responsibility for preparing, reviewing, approving, and issuing documents;

(c) review of documents for adequacy, completeness, and correctness prior to approval and issuance.

6.1 Changes to Documents

Changes to documents, other than those defined in implementing procedures as minor changes, are considered as major changes and 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, shall 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 decision shall be clearly delineated in implementing procedures.

6.2 NQA-1-1994 Commitment

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

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

SNC 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 upon delivery or completion.

7.1 Acceptance of Item or Service

SNC establishes and implements measures to assure 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. SNC may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet SNC 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. Acceptance actions are 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 "off-the-shelf" items to assure they will perform satisfactorily in service in safety related applications.

7.2 NQA-1-1994 Commitment

In establishing procurement verification controls, SNC 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

  - SNC 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 SNC plants 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.

    - The calibration laboratory holds an accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) or by the American Association for Laboratory Accreditation (A2LA) as recognized by NVLAP through a Mutual Recognition Arrangement (MRA).

    - The accreditation is based on ANS/ISO/IEC 17025.

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

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

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

- A documented review of the supplier's accreditation shall be performed and shall include a verification of each of the foregoing conditions.

- For Section 8.1, SNC considers documents that may be stored in approved electronic media under SNC control and not physically located on the plant 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.

- For Section 10, Commercial Grade Items, Controls for commercial grade items and services are established in SNC documents using the guidance of EPRI NP-5652 as discussed in Generic Letter 89-02 and Generic Letter 91-05.

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

SNC 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, SNC commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

SECTION 9 CONTROL OF SPECIAL PROCESSES

SNC 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. 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, SNC commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

SECTION 10 INSPECTION

SNC 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 and installation 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 NQA-1-1994 Commitment / Exceptions

- In establishing inspection requirements, SNC 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, SNC commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

  - Subpart 2.4 commits SNC 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. SNC commits to the definition of Safety Systems Equipment in IEEE 603-1980, but does not commit to the balance of that standard.

  - An additional exception to Subpart 2.4 is contained in Section 12 of this NDQAM.

SECTION 11 TEST CONTROL

SNC has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of this NDQAM 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, in-service tests, and operational tests (such as surveillance tests required by Plant Technical Specifications), 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, retesting is performed as needed to confirm acceptability following correction of the system or equipment deficiencies that caused the failure.

11.1 NQA-1-1994 Commitment

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

11.2 NQA-1-1994 Commitment for Computer Program Testing

SNC 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 SNC 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

SNC has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment that is not installed as plant equipment and 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 provisions of this NDQAM Section are intended to assure that:

- Measuring and test equipment is calibrated at specified intervals on the basis of the item's required accuracy, intended use, frequency of use, and stability characteristics or other conditions affecting its performance. Alternatively, equipment may be calibrated immediately before and after use if a defined interval is not appropriate.

- Measuring and test equipment is labeled, tagged or otherwise controlled to indicate its calibration status and provide traceability to calibration test data or records.

- Calibrations are performed against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated. When this is not possible, the standards have an accuracy that ensures the equipment being calibrated will be within the required tolerance.

- Where possible, calibration standards are traceable to appropriate national standards. Calibration standards have greater accuracy than the standards being calibrated, except where the same accuracy as the instruments being calibrated can be shown to be adequate for the service requirements.

- Measuring and test equipment found out of calibration is tagged or segregated and not used until it is successfully re-calibrated. An evaluation is performed to determine the

acceptability of any items measured, inspected or tested with an out-of-calibration device from the time of the previous calibration.

12.1 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, SNC commits to compliance with NQA-1-1994, Basic Requirement 12, Supplement 12S-1 and Subpart 2.16 for establishing appropriate requirements for calibration and control of measuring and test equipment, with the following clarifications and exceptions:

- NQA-1-1994, Subpart 2.16 (ANSI/IEEE 498-1985)
  - Section 5.5 of ANSI/IEEE 498-85 requires all M&TE to be labeled. SNC plants may not label certain M&TE, such as installed instrumentation, but will provide other means of identification so that appropriate controls can be implemented. This exception also applies to labeling and tagging of items requiring calibration as discussed in Section 7.2.1 of ANSI/IEEE 336-85 (NQA-1, Subpart 2.4).

SECTION 13 HANDLING, STORAGE, AND SHIPPING

SNC 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 safety. 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.

13.1 Housekeeping

Housekeeping practices during construction and pre-operational activities are established to account for conditions or environments that could affect the quality of structures, systems and components within the plant. This includes control of cleanness of facilities and materials, fire prevention and protection, disposal of combustible material and debris, control of access to work areas, protection of equipment, radioactive contamination control and storage of solid radioactive waste. Housekeeping practices help assure that only proper materials, equipment, processes and procedures are used and that the quality of items is not degraded. Necessary procedures or work instructions, such as for electrical bus and control center cleaning, cleaning of control consoles, and radioactive decontamination are developed and used.

13.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for handling, storage and shipping, SNC commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. SNC also commits to compliance with the requirements of NQA-1-1994, Subpart 2.2, with the clarifications and exceptions shown below.

In addition, SNC commits to compliance with the requirements of NQA-1-1994, Subpart 2.1, to establish appropriate provisions for the cleaning of fluid systems and associated components; and Subpart 2.3, to establish appropriate provisions for housekeeping; with the following clarifications and exceptions:

- NQA-1-1994, Subpart 2.1
  - Subpart 2.1, sections 3.1 and 3.2, establish criteria for classifying items into cleanness classes and requirements for each class. Instead of using the cleanness level system of Subpart 2.1, SNC plants may establish cleanness requirements on a case-by-case basis, consistent with the other provisions of Subpart 2.1. SNC establishes appropriate cleanliness controls for work on safety related equipment to minimize introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities, including documented verification of absence of foreign materials prior to system closure.

- NQA -1-1994, Subpart 2.2
  - Subpart 2.2, sections 3.2 and 3.5: For items in storage, as determined by facility management, the packaging requirements described under section 3, Packaging, may include alternate methods of affording required protection such as maintaining a storage atmosphere free from harmful contaminants in concentrations that could produce damage to the stored items, or utilizing storage practices that obviate the need for capping all openings.
  - 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, SNC 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. This scope exceeds the scope of the NRC's original endorsement of ANSI N45.2.2 in Regulatory Guide 1.38, and establishes requirements for which there is no NRC regulatory position. In lieu of compliance with Subpart 2.15, SNC establishes and implements controls over hoisting, rigging and transport activities to the extent necessary to protect the integrity of the items involved, as well as potentially affected nearby structures and components. For re-rating of lifting equipment to allow "special lifts," SNC performs dynamic load testing over the full range of the lift using test loads at least 110% of the lift weight. Dynamic tests include raising, lowering and traversing the load. Where required, SNC complies with applicable hoisting, rigging and transportation regulations and codes.

- NQA-1-1994, Subpart 2.3 requires a written record of the entry and exit of all personnel be established and maintained for Zones I, II, and III. The following exceptions are taken:

  - Instead of the five-level zone designation in Subpart 2.3, section 2.2, SNC bases its control over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are effected through procedures or instructions which, in the case of maintenance or modification work, are developed on a case-by-case basis. Factors considered in developing the procedures and instructions include cleanliness control, personnel safety, fire prevention and protection, radiation control, and security. The procedures and instructions make use of standard janitorial and work practices to the extent possible.

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

SNC has established the necessary measures and governing procedures to identify the inspection, test, and operating status of items and components subject to the provisions of this NDQAM in order to maintain personnel and reactor safety and avoid unauthorized operation of equipment. Where necessary to preclude inadvertent bypassing of inspections or tests, or to preclude inadvertent operation, these measures require the inspection, test or operating status be verified before release, fabrication, receipt, installation, test or use. These measures also establish the necessary authorities and controls for the application and removal of status indicators or labels.

14.1 NQA-1-1994 Commitment

In establishing measures for control of inspection, test and operating status, SNC commits to compliance with NQA-1-1994, Basic Requirement 14.

SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

SNC 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. These controls require that an individual discovering a nonconforming condition to identify, describe, and document the nonconformance in accordance with Section 16, Corrective Action, of this NDQAM. 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 SNC procedures, regulatory requirements, and industry standards.

15.1 NQA-1-1994 Commitment

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

SECTION 16 CORRECTIVE ACTION

SNC has established the necessary measures and governing procedures to promptly identify, control, document, classify, and correct conditions adverse to quality. These procedures apply to all Nuclear Development activities. SNC procedures assure that corrective action is documented and initiated following the determination of a condition adverse to quality in accordance with regulatory guidance and applicable quality standards. When complex issues arise where it cannot be readily determined if a condition adverse to quality exists, SNC documents establish the requirements for documentation and timely evaluation of the issue. Results of evaluations 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.

16.1 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 SNC.

16.2 10 CFR Part 21 Reporting Program

SNC has in-place the necessary measures and governing procedures that implement a program to identify, evaluate and report defects and non-compliances in accordance with 10 CFR Part 21. Such a reporting program applies to safety-related activities and services performed by SNC and/or SNC suppliers / sub-suppliers providing input to the ESP and COL application development.

16.3 10 CFR 50.55(e) Reporting Program

SNC will establish the necessary measures and governing procedures that implement a reporting program which conforms to the requirements of 10 CFR 50.55(e). Such a reporting program will be in-place when SNC applies for a COL.

16.4 NQA-1-1994 Commitment

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

SECTION 17 QUALITY ASSURANCE RECORDS

SNC 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 SNC and include requirements for records administration, including receipt, preservation, retention, storage, safekeeping, retrieval, and final disposition.

17.1 Record Retention

Records of activities for design, engineering, procurement, manufacturing, construction, inspection and test, installation, pre-operation, startup and audits include the appropriate content requirements of NQA-1-1994, Parts I and II. Such records and their retention times are based on Regulatory Position C.2, Table 1, of Regulatory Guide 1.28, Revision 3. This table addresses design, construction, and initial start-up records. 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, SNC complies with NRC guidance in RIS 2000-18, October 2000, "Guidance on Managing Quality Assurance Records in Electronic Media" including NIRMA guidelines; TG 11-1998, TG15-1998, TG16-1998, and TG21-1998. SNC will also meet the NRC Regulatory Position C.2 of Regulatory Guide 1.28, Revision 3, August 1985 except that the reference to ASME NQA-1 will be to the 1994 edition.

17.3 NQA-1-1994 Commitment / Exceptions

In establishing provisions for records, SNC 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 SNC, 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

SNC has established the necessary measures and governing procedures to implement audits to verify that activities covered by this NDQAM 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 and 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 nuclear development activities, audits will focus on areas including, but not limited to, site investigation, procurement, and corrective action. 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 the QA Manager.

The Quality Assurance organization is responsible for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of programs and procedures, and to determine if they are meaningful and comply with the overall Quality Assurance program. External audits determine the adequacy of supplier and contractor Quality Assurance programs.

The results of each audit are reported in writing to the Senior Vice President Nuclear Development, the Nuclear Technology Startup Director, the Vogtle Deployment Director, and the Vogtle Licensing Manager 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.

Audit schedule changes reflecting more frequent audits are required by one or more of the following conditions:

- When significant changes are made in functional areas of the NDQAP, such as significant reorganization or procedure revisions.
- When there is evidence that the performance or reliability of safety-related items is in jeopardy due to deficiencies or nonconformances in the NDQAP.
- When a systematic, independent assessment of NDQAP effectiveness is necessary.
- When it is necessary to verify implementation of required corrective actions.

18.2 NQA-1-1994 Commitment

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

PART III REGULATORY COMMITMENTS

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 SNC NDQAP. Southern Nuclear 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.

Regulatory Guides:

Regulatory Guide 1.8, Revision 2, April 1987 – Qualification and Training of Personnel for Nuclear Power Plants

Regulatory Guide 1.8 defines the requirements for selection and training of nuclear power plant operations phase personnel.

Southern Nuclear meets the requirement of this regulatory guide for the selection and training of nuclear power plant personnel.

Personnel who complete an accredited program which has been endorsed by the NRC shall meet the requirements of the accredited program in lieu of other guidance given in the guide.

Regulatory Guide 1.26, Revision 3, February 1976 – 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.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1, C.1.a, C.1.b, and C.3. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

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

Southern Nuclear meets the requirements of this regulatory guide for Construction Activities conducted by Southern Nuclear, except that ASME NQA-1-1994 edition (as modified by the exceptions to NQA-1-1994 as shown in this NDQAM) will be used in place of ANSI/ASME NQA-1-1983 and the ANSI/ASME NQA-1a-1983 Addenda.

Regulatory Guide 1.29, Revision 3, September 1978 – Seismic Design Classification

Regulatory Guide 1.29 defines systems required to withstand a safe shutdown earthquake (SSE).

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1.d, C.1.g, and C.1.n. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

Regulatory Guide 1.54, Revision 1, July 2000- Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants

Regulatory Guide 1.54 defines requirements and guidelines for protective coatings applied to various materials.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1 and C.2. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

Regulatory Guide 1.97, Revision 3, May 1983 – Instrumentation for Light-Water Nuclear Power Plants to Assess Plant and Environs Condition During and Following an Accident

Regulatory Guide 1.97 describes an acceptable method to provide instrumentation to monitor plant variables and systems during and following an accident.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.143, Revision 2, November 2001 – Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants

Regulatory Guide 1.143 furnishes design guidance acceptable to the NRC regarding seismic and quality group classification and quality assurance provisions for radioactive waste management SSCs.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.152, Revision 2, January 2006 - Criteria for Digital Computers in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.152 describes a method acceptable to the NRC regarding use of digital computers in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.168, Revision 1, February 2004 - Verification, Validation, Reviews, and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.168 describes acceptable methods regarding verification and validation; reviews; and audits of digital computer software used in safety systems.

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

Regulatory Guide 1.169, Revision 0, September 1997 - Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.169 describes acceptable methods regarding configuration management plans for digital computer software used in safety systems.

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

Regulatory Guide 1.170, Revision 0, September 1997 - Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.170 describes acceptable methods regarding software test documentation for digital computer software used in safety systems.

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

Regulatory Guide 1.171, Revision 0, September 1997 - Software Unit Testing for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.171 describes acceptable methods regarding software unit testing for digital computer software used in safety systems.

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

Regulatory Guide 1.172, Revision 0, September 1997 - Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.172 describes acceptable software requirements specifications for digital computer software used in safety systems.

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

Regulatory Guide 1.173, Revision 0, September 1997 - Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.173 describes acceptable methods regarding development of software life cycle processes for digital computer software used in safety systems.

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

Standards

ASME NQA-1-1994 Edition – Quality Assurance Requirements for Nuclear Facility Applications

SNC commits to NQA-1-1994, Parts I and II, as described in the foregoing sections of this manual.

Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guides (TGs)

SNC commits to NIRMA TGs as described in section 17 of this manual.