



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 20, 2012

Mr. Thomas D. Gatlin  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1, APPROVAL OF QUALITY ASSURANCE PROGRAM DESCRIPTION (TAC NO. ME5899)

Dear Mr. Gatlin:

By letter dated March 18 as supplemented by letters dated August 30 and November 10, 2011 and February 28, 2012, (References 1-4), South Carolina Electric and Gas Company (SCE&G) submitted a Quality Assurance Program Description (QAPD) for the Virgil C. Summer Nuclear Station, Unit 1 (VCSNS), for review and approval by the Nuclear Regulatory Commission (NRC) staff in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.54(a)(4).

The NRC staff finds that the quality assurance (QA) program described in the QAPD satisfies the Commission's requirements for QA programs as established in 10 CFR Part 50, Appendix B. The program description adequately describes how the requirements of Appendix B will be implemented. The basis for the conversion of the current QA program description for the individual plants conforms to the change requirements of 10 CFR 50.54(a). Therefore, the NRC staff concludes that the proposed QAPD continues to meet the 10 CFR, Part 50, requirements for QA programs, and is, therefore, acceptable.

Sincerely,

A handwritten signature in black ink that reads "Robert Martin".

Robert E. Martin, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosure: Safety Evaluation

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CHANGE TO QUALITY ASSURANCE PROGRAM DESCRIPTION (QAPD)

VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1

DOCKET NO. 50-395

1.0 INTRODUCTION

By letters dated March 18 as supplement by letters dated August 30 and November 10, 2011 and February 28, 2012 (References 1-4), South Carolina Electric & Gas Company (SCE&G, the licensee) submitted the Virgil C. Summer Nuclear Station (VCSNS), Unit 1 Quality Assurance Program description (QAPD) for Nuclear Regulatory Commission (NRC) staff (staff) review and approval in accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.54(a)(4). The licensee stated that the proposed QAPD is a complete revision and replaces in total the VCSNS Quality Assurance (QA) Operational Plan as currently docketed in the Final Safety Analysis Report (FSAR).

2.0 REGULATORY EVALUATION

The Commission's regulatory requirements related to QA programs are set forth in Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR, Part 50, 10 CFR 50.34(b)(6)(ii), and 10 CFR 50.54(a).

Appendix B establishes QA requirements for the design, construction, and operation of structures, systems, and components (SSCs) of the facility. The pertinent requirements of Appendix B to 10 CFR Part 50 apply to all activities affecting the safety-related functions of those SSCs and include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying.

Section 50.34, "Content of applications; technical information," requires that every applicant for an operating license include information in its final safety analysis report (FSAR) on the managerial and administrative controls to be used to assure safe operation. The information on the controls shall also include a discussion of how the applicable requirements of Appendix B will be satisfied.

Section 50.54(a) states that licensees may make a change to a previously accepted QA program description included or referenced in the FSAR without prior NRC approval, provided the change does not reduce the commitments in the program description as accepted by the NRC. The requirements of 10 CFR 50.54(a)(3) and 50.71(e) for changes that do not reduce the commitments continue to apply. Changes to the QAPD that do reduce the commitments must

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be submitted to the NRC and receive NRC approval prior to implementation.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Background

The proposed QAPD is similar in many respects to quality assurance program submittals approved for other licensees (References 8 and 9).

The QAPD is based on the guidance of the American Society of Mechanical Engineers (ASME Code), Nuclear Quality Assurance (NQA)-1-1994 Standard, "Quality Assurance Requirements for Nuclear Applications." Part I of the standard sets forth programmatic requirements for the establishment and execution of QA programs for the siting, design, construction, operation and decommissioning of nuclear facilities. Part II of the standard sets forth non-programmatic QA requirements for the planning and execution of identified tasks during the fabrication, construction, modification, repair, maintenance and testing of SSCs for nuclear facilities. NQA-1-1994 provides guidance that is similar to that provided by the American National Standards Institute (ANSI) N45.2 series of standards, which were developed in the 1970s and early 1980s. The proposed QAPD is based on NQA-1-1994 in lieu of current commitments to N45.2 and supplemental "daughter" standards.

The licensee incorporated the administrative controls requirements of ANSI N18.7-1976/American Nuclear Society (ANS) 3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," as endorsed by Regulatory Guide (RG) 1.33, Revision 2, into the text of the QAPD. The principal difference between ANSI N18.7-1976 and NQA-1-1994 is that the inclusion of administrative controls for operation was not incorporated into NQA-1-1994.

Attachment V of the licensee's letter (Reference 1) compares ANSI N18.7-1976 guidance with the proposed QAPD commitments and the applicable requirements of NQA-1-1994. Attachment V demonstrates that, where differences between the QA requirements of ANSI N18.7-1976 and NQA-1-1994 exist, appropriate commitments for administrative controls for operation have been included in the QAPD. The staff reviewed the comparison presented in Attachment V, applicable sections of the QAPD, and the licensee's stated positions with respect to RG 1.33, Revision 2. Based on its review, the staff concludes that the licensee adequately incorporated ANSI N18.7-1976, as necessary, into the proposed QAPD.

#### 3.2 Evaluation

This section evaluates the adequacy of the QAPD in describing how the requirements of Section 50.34(b)(6)(ii), Appendix B, and the administrative controls of N18.7-1976 will be satisfied and conformance to the regulatory requirements of Section 50.54(a) for making changes to approved QA programs.

The format and content of the QAPD are evaluated in accordance with the guidance of NUREG-0800, "Standard Review Plan," Section 17.5 (SRP Section 17.5) dated March 2007. SRP Section 17.5 provides a basis for staff review of QA programs based on NQA-1-1994 and ANSI 18.7 allowing for a comprehensive review of QA requirements for all phases of a nuclear

power plant's lifecycle. The acceptability of the level of detail provided by the QAPD is determined in part, by its adequacy in addressing the acceptance criteria of SRP Section 17.5.

A change to a QA program submitted under 50.54(a)(4) should identify each change, the reason for the change, and the basis for concluding that the revised program incorporating the change continues to satisfy the criteria of Appendix B. The staff reviewed the basis for the change, retention of current QA commitments in the proposed QAPD, and proposed alternatives and exceptions to methods endorsed by regulatory guides. None of the licensee's proposed changes or alternatives met the requirements set forth in 50.54(a)(4). The staff determined that the proposed changes met the criteria of 50.54(a)(3), based on previous safety evaluation precedents (References 8, 9).

### 3.2.1 Format and Content of the QAPD

The format used for the following evaluation follows the sequence of the 18 criteria of Appendix B to 10 CFR Part 50 and the acceptance criteria of SRP 17.5.

#### 3.2.1.1 Organization

The staff determined that the QAPD is the top-level policy document that adequately establishes the manner in which quality is to be achieved. Compliance with the QAPD and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the SCE&G QA program. In RAI 1.01, the staff requested the SCE&G explain and resolve the discrepancy between Part I, Section 1, "General," that stated that the QAPD is the top-level policy document that establishes the QA policy and functional responsibilities for operations activities of Unit 1, relative to Part II, Section 1, "Organization," which states that the QAPD will be used for operational activities and also provide support to New Nuclear Deployment (construction). In its response SCE&G revised Part I to clarify that organizations within SCE&G Nuclear Operations will provide support to New Nuclear Deployment through the implementation and support of the QAPD.

The QAPD adequately describes the organizational structure, functional responsibilities and levels of authority and interfaces for establishing, executing and verifying QA program implementation. The organizational structure includes corporate functions and onsite functions for each plant.

In RAI 1.0.2, 1.0.3, and 1.0.5, the staff requested SCE&G to describe the different groups that are in Figure 1.1-2, "Unit 1 Plant Management Organization," that were not described under the organization description and provide more detailed clarification of the functional responsibilities supporting New Nuclear Deployment. In its response, SCE&G revised the organization description under Part II, Section 1, to include the functions of the Vice President, New Nuclear Deployment and Manager, Emergency Planning. The section was revised to provide more organizational detail and be consistent with the use of organizational terminology to allow Unit 1's Nuclear Operations organizations to support New Nuclear Deployment.

In RAI 1.0.4, the staff requested SCE&G to demonstrate how the QAPD implements a direct line of communication between the Manager, Quality Systems and the Vice President, Nuclear Operations. In its response, SCE&G revised Figure II.1-2, "Unit 1 Plant Management

Organization,” to be more detailed on how a direct line of communication is established between the Manager, Quality Systems and the Vice President, Nuclear Operations.

In establishing its organizational controls, SCE&G commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the organizational controls met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.2 Quality Assurance Program

The staff determined that SCE&G established the necessary QAPD measures and governing procedures to implement the QA program. SCE&G commits to meeting the QA program in all aspects of work that are important to safety and reliability of the nuclear plants as described in the QAPD. SCE&G ensures through the process described in the QAPD that its suppliers of safety-related equipment or services meet the applicable requirements of Appendix B to 10 CFR Part 50. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the QA program.

Personnel working directly or indirectly for SCE&G are responsible for the achievement of acceptable quality in the work covered by the QAPD. SCE&G personnel performing verification activities are responsible for verifying the achievement of acceptable quality. The Manager, Quality Systems is responsible for verification that processes and procedures comply with the QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

The staff determined that SCE&G establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the QA program to ensure that suitable proficiency is achieved and maintained.

In establishing its Quality Assurance Program, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion II and NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3 and 2S-4, with clarifications and exceptions to 2S-1, 2S-2 and 2S-3, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the program met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.3 Design Control

The staff review determined that SCE&G has established and implemented a process to control the design, design changes and temporary modifications of items that are subject to the provisions of the QAPD. The design process includes provisions to control design inputs, outputs, changes and records. The design control program includes interface controls necessary to control the development, verification, approval, release, status, distribution and revision of design inputs and outputs.

In establishing provisions for design control, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion III and NQA-1, Basic Requirement 3, and Supplement 3S-1, and the standards for computer software contained in Subpart 2.7. As set forth above, the staff

reviewed the QA measures to be implemented by SCE&G and concluded that the controls for design met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.4 Procurement Document Control

The staff review determined that SCE&G has established the necessary measures and governing procedures to ensure that purchased items 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 ensure the items are suitable for the intended service, and are of acceptable quality, consistent with their effect on safety.

In establishing controls for procurement documents, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion IV and NQA-1, Basic Requirement 4 and Supplements 4S-1, with clarifications and exceptions to 4S-1, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the procurement documents met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.5 Instructions, Procedures, and Drawings

The staff review determined that SCE&G 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 include quantitative or qualitative acceptance criteria to implement the QA program as described in the QAPD.

In establishing procedural controls, SCE&G commits to compliance with Appendix B to 10 CFR, Part 50, Criterion V and NQA-1, basic Requirement 5. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for instructions, procedures and drawings met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.6 Document Control

The staff review determined that SCE&G 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 ensure that the correct documents are being employed.

In establishing procedural controls, SCE&G commits to compliance with Appendix B to 10 CFR, Part 50, Criterion VI, and NQA-1, Basic Requirement 6. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the provisions for the document control program met the guidance in SRP Section 17.5 of NUREG-0800.

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

The staff review determined that SCE&G has established the necessary measures and governing procedures to control the procurement of items and services to ensure conformance

with specified requirements.

In establishing a program for the control of items and services, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion VII and NQA-1, Basic Requirement 7 and Supplement 7S-1 with clarifications and exceptions to 7S-1. In RAI 3.0.1, the staff requested SCE&G to clarify how the QAPD intends to implement the proposed alternative (NQA-1-1994, Supplement 7S-1) to be consistent with SRP Section 17.5, paragraph II.L.8, of the SRP. In its response, SCE&G revised Part II, Subsection 7.2, "NQA-1-1994 Commitment/Exceptions," of the QAPD to be consistent with SRP Section 17.5, paragraph II.L.8, of the SRP. SCE&G supplemented the initial proposed alternative by adding two new conditions in order to satisfy the guidance in SRP Section 17.5: the calibration laboratory is a domestic (United States) calibration service supplier, and the proposed alternative also applies to sub-suppliers of calibration services.

The staff review determined that in establishing a program for the control of items and services, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion VII and NQA-1, Basic Requirement 7 and Supplement 7S-1 with clarifications and exceptions to 7S-1, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the program for the control of purchased material, equipment, and services met the guidance in SRP Section 17.5 of NUREG-0800.

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

The staff review determined that SCE&G has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items.

In establishing provisions for identification and control of items, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion VIII and NQA-1, Requirement 8 and Supplement 8S-1. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the identification and control of materials, parts and components met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.9 Control of Special Processes

The staff review determined that SCE&G has established the necessary controls and governing procedures for special processes requiring interim process controls that ensure quality, such as welding, heat treating, and nondestructive examination.

In establishing measures for the control of special processes, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion IX and NQA-1, Basic Requirement 9 and Supplement 9S-1. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for special processes met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.10 Inspection

The staff review determined that SCE&G has established the necessary measures and

governing procedures to implement inspections that ensure items, services and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures and design documents.

In establishing inspection requirements, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion X and NQA-1, Requirement 10, Supplement 10S-1 and Subpart 2.4, with clarifications to Subpart 2.4, which are addressed in Section 3.2.2. In addition, SCE&G commits to Subparts 2.5 and 2.8 for establishing inspection requirements. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for inspection activities met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.11 Test Control

The staff review determined that SCE&G has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of the QAPD will perform satisfactorily in service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant as a whole is satisfactory.

SCE&G establishes and implements provisions to ensure 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.

In establishing test control requirements, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XI and NQA-1, Basic Requirement 11, Supplement 11S-1, Supplement 11S-2 and Subpart 2.7. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the test control requirements met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.12 Control of Measuring and Test Equipment

The staff review determined that SCE&G has established procedures for the control of calibration, maintenance, and adjustment of instrument and control devices installed in the plants.

The staff review determined that SCE&G has also established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment that are 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.



In establishing a measuring and test equipment calibration program, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XII and NQA-1, Basic Requirement 12 and Supplement 12S-1 with clarifications and exceptions, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for measuring and test equipment met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.13 Handling, Storage, and Shipping

The staff review determined that SCE&G 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.

In establishing provisions for handling, storage and shipping, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XIII and NQA-1, Basic Requirement 13 and Supplement 13S-1. SCE&G also commits to compliance with Subpart 2.1, Subpart 2.2, Subpart 2.3, and Subpart 3.2, Appendix 2.1 with clarifications and exceptions, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for handling, storage, and shipping met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.14 Inspection, Test, and Operating Status

The staff review determined that SCE&G 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 the QAPD in order to maintain personnel and reactor safety and avoid inadvertent operation of equipment.

In establishing measures for control of inspection, test, and operating status, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XIV and NQA-1, Basic Requirement 14. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the inspection, test, and operating status met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.15 Nonconforming Materials, Parts, or Components

The staff review determined that SCE&G 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.

In establishing provisions for nonconforming material, parts, or components, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XV and NQA-1, Basic Requirement 15 and Supplement 15S-1. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for handling nonconforming material, parts, or components met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.16 Corrective Action

The staff review determined that SCE&G has established the necessary measures and governing procedures to promptly identify, control, document, classify and correct conditions adverse to quality.

In establishing corrective action requirements, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XVI and NQA-1, Basic Requirement 16. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for corrective actions met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.17 Quality Assurance Records

The staff review determined that SCE&G 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 for the records retention program. These provisions include requirements for records administration, preservation, retention, storage, safekeeping, retrieval, access control, user privileges, and final disposition.

Additionally, SCE&G has established the necessary provisions for quality records in electronic media, for the generation, distribution, use, maintenance, storage and disposition of electronic records. SCE&G's process identifies the acceptable media on which electronic records may be created and stored.

In establishing a QA records program, SCE&G commits to compliance with Appendix B to 10 CFR Part 50, Criterion XVII, NQA-1, Basic Requirement 17, Supplement 17S-1, Generic Letter 88-18, "Plant Record Storage on Optical Disks," and Regulatory Issue Summary 2000-18, "Guidance on Managing Quality Assurance Records in Electronic Media," with clarifications and exceptions, which are addressed in Section 3.2.2. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the QA records met the guidance in SRP Section 17.5 of NUREG-0800.

#### 3.2.1.18 Audits

The staff review determined that SCE&G has established the necessary measures and governing procedures to implement audits to verify that activities covered by the QAPD are performed in conformance with established requirements. In addition to audits of facility activities performed under the cognizance of the Nuclear Safety Review Board, SCE&G commits to perform periodic surveillances of plant activities to examine subjects such as plant operating characteristics and plant design and operating experience information for the purpose of improving plant safety.

The important elements of the reviews are documented and subjects of potential concern are brought to the attention of the Senior Vice President, Nuclear Operations. The Senior Vice President, Nuclear Operations, ensures the timely referral of the applicable matters discussed in the reviews to appropriate management and independent reviewers.

In establishing an audit program, SCE&G commits to compliance with Appendix B to 10 CFR, Part 50, Criterion XVIII, NQA-1, Basic Requirement 18 and Supplement 18S-1. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the controls for the audit program met the guidance in SRP Section 17.5 of NUREG-0800.

### 3.2.1.19 Operational Review

Part III, "Non-Safety Related SSCs [Structure, Systems, and Components] – Significant Contributors to Plant Safety," address specific program controls applied to non-safety related SSCs for which Appendix B to 10 CFR Part 50 are not applicable. This section provides for the controls to be applied to non-safety related SSCs that provide critical attributes or are a significant contributor to safety. Section 2, "Non-safety Related SSCs Credited for Regulatory Events," of Part III of the proposed QAPD contains criteria applied to fire protection, anticipated transients without scram, and station blackout SSCs that are not safety related. In RAI 6.0.1, the staff requested SCE&G to clarify why the QAPD deviated from the content as described in Part III of the NEI 06-14A. In its response, SCE&G revised Part III content to be in alignment with Part III of the NEI 06-14A. As set forth above, the staff reviewed SCE&G's quality controls for non-safety related SSCs that may be significant contributors to safety and concluded that the program met the guidance in SRP Section 17.5 of NUREG-0800.

Part IV, "Regulatory Commitments," identifies the RGs and the other industry standards which have been selected by SCE&G to supplement and support the QAPD. Part IV of NEI 06-14A, Rev. 7, "Quality Assurance Program Description," states that RG 1.33 describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to the overall QA program requirements for the operation phase of nuclear power plants. In RAI 5.0.1, the staff requested SCE&G to clarify why the QAPD deviated from the content as described in Part IV of NEI 06-14A. In its response, SCE&G revised Part IV to address the deviation and align Part IV of the QAPD to the content of NEI 06-14A. As set forth above, the staff reviewed SCE&G's QA commitments and concluded that the QA program for the plant's operational phase met the guidance in SRP Section 17.5 of NUREG-0800 which delineates the requirements in ANSI N18.7.

Part V, "Additional Quality Assurance and Administrative Controls for the Plant Operational Phase," includes additional requirements to establish the necessary measures and governing procedures for the operation phase of the plant. The review processes for the Independent Safety Review Body (Plant Safety Review Committee (PSRC))/Independent Review Committee (Nuclear Safety Review Committee (NSRC)) are described in the QAPD, Part V. The Independent Safety Review Body advises the General Manager, Nuclear Plant Operations for each plant on matters related to nuclear power plant safety. The reviews provide timely and continuous monitoring of operating activities in order to assist the General Manager, Nuclear Plant Operations in keeping abreast of general plant conditions and to verify that day-to-day operations are conducted safely in accordance with the established administrative controls. In RAI 7.0.1, the staff requested SCE&G to clarify how the QAPD intends to implement the proposed alternative of the Independent Safety Review Body. In its response, SCE&G revised Part V, Subsection 2.2 of the QAPD to be consistent with SRP Section 17.5, paragraph II.W.2.d. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the additional quality assurance and administrative controls for the plant operational phase met the guidance in SRP Section 17.5 of NUREG-0800.

During the staff review of Part V, Subsection 2.4, "Record Retention," it was noticed that SCE&G proposed a list of records and proposed retention times similar to Table 1 of RG 1.28, in addition to the applicable records retention requirements established in the regulations. In RAI 4.0.1, the staff requested SCE&G to clarify the proposed types of records and their respective retention times. The list provided for record retention under Section 2.4, was not consistent with the requirements of Table 1 of RG 1.28. In its response, SCE&G revised Part V, Section 2.4 of the QAPD to include the types of records listed in current Subsection 2.4.1 with those of current Subsection 2.4.2 as lifetime records. SCE&G also clarified that the Unit 1 Records Accumulation and Retention Chart verifies that the records have a retention period of lifetime or lifetime plus 10 years. As set forth above, the staff reviewed the QA measures to be implemented by SCE&G and concluded that the additional controls for the plant operational phase met the guidance in SRP Section 17.5 of NUREG-0800, which delineates the requirements in ANSI N18.7.

### 3.2.2 Basis for Proposed Changes to the SCE&G QA Programs

The proposed QAPD represents a change from a QA program description based on RG 1.28 and RG 1.33 to a program based on NQA-1-1994, as supplemented by the requirements for the administrative controls for operation delineated in ANSI N18.7-1976. As stated in SCE&G's letter dated March 18, 2011, the licensee considers that the collective requirements of the QAPD and NQA-1-1994 are equivalent to ANSI N18.7-1976 and RG 1.33, Revision 2. This approach has previously been approved by the staff as an acceptable approach to adopting NQA-1-1994 as the basis for a licensee's QA programs.

The staff review determined that SCE&G current QA program commitments had been acceptably retained in the new proposed QAPD. The staff reviewed the basis for the change, retention of current QA commitments in the proposed QAPD, and potential alternatives and exceptions to methods endorsed by regulatory guides. The staff also reviewed changes considered not to be reductions in QA program commitments for conformance with the provisions of 50.54(a)(3). Additionally, the staff determined that the QAPD, as delineated by the guidance in SRP Section 17.5, provides an acceptable alternative to an explicit commitment to N18.7-1976 and RG 1.33, Revision 2.

Attachment V of the licensee's letter (Reference 1) provides a matrix that compares ANSI N18.7-1976 guidance with the proposed QAPD commitments and the applicable requirements of NQA-1-1994. Attachment V demonstrates that, where differences between the QA requirements of ANSI N18.7-1976 and NQA-1-1994 exist, commitments have been included in the QAPD. Additionally the matrix documents the analysis done by the licensee where it documents the conformance between the QAPD's commitments and guidance in NQA-1-1994 and the basis for acceptability of variances. Included in Attachment V were the administrative controls for operations relocated from the licensee's Technical Specifications. The cited variances are allowed under the provisions of 10 CFR 50.54(a)(3), which defines changes to the QA program that do not reduce commitments. Clarifications, alternatives and exceptions to the guidance of NQA 1-1994 that fall within the scope of 50.54(a)(3)(ii), allows the use of alternatives or exceptions approved by an NRC safety evaluation, provided the bases of approval is applicable to the licensee's facility. Potential alternatives and exceptions to NQA-1-1994 are explicitly stated in the QAPD and SCE&G provided adequate justification to address

them. The staff reviewed the comparison presented in Attachment V, applicable sections of the QAPD, and the licensee's stated positions with respect to RG 1.28, Revision 3, and RG 1.33, Revision 2. Based on its review, the staff concludes that the licensee adequately incorporated NQA-1 and ANSI N18.7-1976, as necessary, into the proposed QAPD.

Based on review of the QAPD and supplemental information described above, the staff finds that the proposed QA program meets the requirements of Appendix B to 10 CFR Part 50.

#### 4.0 CONCLUSION

Based on evaluation of SCE&G's submittal and the referenced correspondence, the staff concludes that the QA program described in the QAPD satisfies the Commission's requirements for QA programs as established by Appendix B to 10 CFR Part 50. The program description adequately describes how the requirements of Appendix B will be implemented. Therefore, the staff concluded that the proposed QAPD continues to meet the 10 CFR Part 50 requirements for the QA program, and is, therefore, acceptable.

#### 5.0 REFERENCES

1. Gatlin, T. D. SCE&G to the NRC, "Virgil C. Summer Nuclear Station Unit 1 Docket No. 50-395 Operating License No. NPF-12, License Amendment Request - LAR-10-03108, Proposed Change to Relocate Administrative Control Requirements Related to Quality Assurance and Submittal of Quality Assurance Program Description (QAPD)," March 18, 2011 (ADAMS No. ML110810688).
2. Gatlin, T. D. SCE&G to the NRC, "Virgil C. Summer Unit 1, Docket No. 50-395 Operating License No. NPF-12, Response to Request for Additional Information on Quality Assurance Plan," August 30, 2011 (ADAMS No. ML11244A186).
3. Gatlin, T. D. SCE&G to the NRC, "Virgil C. Summer Nuclear Station Unit 1 Docket No. 50-395 Operating License No. NPF-12, Revision to License Amendment Request - LAR-10-03108, Proposed Change to Relocate Administrative Control Requirements Related to Quality Assurance and Submittal of Quality Assurance Program Description (QAPD) – Supplemental Letter," November 10, 2011 (ADAMS No. ML11320A132).
4. Gatlin, T. D. SCE&G to the NRC, responding to request for additional information, February 28, 2012, (ADAMS no. ML12062A111).
5. Letter, R. J. Bell, Nuclear Energy Institute (NEI), "Submittal of NEI 06-14A, Revision 7, Quality Assurance Program Description," (ADAMS no. ML102370299), including enclosed NRC "Final Safety Evaluation for Technical Report NEI 06-14, "Quality Assurance Program Description," Revision 9, (ADAMS no. ML101800497).
6. NRC/Office of New Reactors (NRO), Final Safety Evaluation for Technical Report NEI 06-14, "Quality Assurance Program Description," April 25, 2007 (ADAMS No. ML101800497).

7. Robertson, G. SCE&G electronic mail to Gleaves, B. providing a new version of the proposed QAPD that incorporates SCE&G responses to NRC request for additional information, November 1, 2011 (ADAMS No. ML11314A239).
8. Dominion Nuclear Connecticut, Inc. and Virginia Electric and Power Company (Millstone Units 1, 2 and 3; North Anna Units 1 and 2; and Surry Units 1 and 2): NRC Safety Evaluation dated September 9, 2005 (ADAMS No. ML052490337).
9. Southern Nuclear Operating Company (Farley Units 1 and 2, Hatch Units 1 and 2, and Vogtle Units 1 and 2): NRC Safety Evaluation dated June 21, 2007 (ADAMS No. ML071510506).

Principal Contributor: Jonathan Ortega-Luciano, NRR/DIRS

Date: March 20, 2012

March 20, 2012

Mr. Thomas D. Gatlin  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1, APPROVAL OF QUALITY ASSURANCE PROGRAM DESCRIPTION (TAC NO. ME5899)

Dear Mr. Gatlin:

By letter dated March 18 as supplemented by letters dated August 30 and November 10, 2011 and February 28, 2012, (References 1-4), South Carolina Electric and Gas Company (SCE&G) submitted a Quality Assurance Program Description (QAPD) for the Virgil C. Summer Nuclear Station, Unit 1 (VCSNS), for review and approval by the Nuclear Regulatory Commission (NRC) staff in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.54(a)(4).

The NRC staff finds that the quality assurance (QA) program described in the QAPD satisfies the Commission's requirements for QA programs as established in 10 CFR Part 50, Appendix B. The program description adequately describes how the requirements of Appendix B will be implemented. The basis for the conversion of the current QA program description for the individual plants conforms to the change requirements of 10 CFR 50.54(a). Therefore, the NRC staff concludes that the proposed QAPD continues to meet the 10 CFR, Part 50, requirements for QA programs, and is, therefore, acceptable.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-395

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ADAMS Accession No. ML12066A017

\* by memo dated

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