

**V.C. Summer Power Station
Safety Analysis Report**

Conduct of Operations

Chapter 13

Revision 23--Updated Online 07/13/23

This Revision summary replaces the List of Effective pages of the VC Summer FSAR, effective June 30, 2021. It will appear in Chapter 00 of the VC Summer FSAR and is the best history available of all the changes made to the original VC Summer FSAR.

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CHAPTER 13 - CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE OF SOUTH CAROLINA ELECTRIC AND GAS COMPANY

NOTE 13.1.1

Section 13.1.1 is being retained for historical purposes only.

13.1.1 Corporate Organization

This section describes the structure and qualifications of the South Carolina Electric and Gas Company (SCE&G) corporate organization and the corporate organizations of the principal contractors: Gilbert/Commonwealth (Gilbert), Westinghouse Electric Corporation (Westinghouse), and Daniel International Corporation (Daniel).

13.1.1.1 Corporate Functions, Responsibilities and Authorities

SCE&G owns and operates an integrated electric generation, transmission, and distribution system which serves approximately 304,000 customers in a 12,000 square mile service area. This area, stretching from the central region to the coastal plains, includes Columbia, the State capitol, and Charleston, South Carolina's principal seaport. SCE&G's transmission system is part of the interconnected grid extending over a large part of the central and eastern portion of the nation.

SCE&G's net generating capacity as of August 1983 was in excess of 3,950,000 kW. The South Carolina Public Service Authority (SCPSA), by joint ownership of the Virgil C. Summer Nuclear Station, owns one-third interest (300 MW) in the facility.

SCE&G, acting as its own general contractor, has constructed generating facilities which provide most of their present generating capacity. For the construction of the Virgil C. Summer Nuclear Station, SCE&G has engaged qualified contractors to construct the facility. SCE&G acted as construction manager.

SCE&G is a partner with Carolina Power and Light Company, Duke Power Company, and Virginia Electric and Power Company in Carolinas Virginia Nuclear Power Associates, Inc. (CVNPA). CVNPA was formed in 1956 to build and operate a 17,000 kWe nuclear steam generating plant at Parr, S. C., for research, operating, and engineering experience. The Carolinas Virginia Tube Reactor (CVTR) was constructed and operated under license granted by the Atomic Energy Commission. The CVTR was decommissioned in 1967 after completion of a successful operating and research program. SCE&G actively participated in the CVTR project at the planning, management, training, research, technical, and operational levels.

SCE&G has maintained active participation in the fast breeder programs of both Westinghouse and Atomics International. SCE&G also participated in the Savannah River Nuclear Study Group which examined the feasibility of developing power from a production reactor.

SCE&G was the sole applicant for the construction permit and operating license for the Virgil C. Summer Nuclear Station. As Applicant, SCE&G was responsible for the design, construction, quality assurance, and operation of this station. Figures 13.1-1 and 13.1-2 together show the SCE&G corporate organizational structure from the Board of Directors to the managerial level at the plant site. Figure 13.1-2 includes the organizational interfaces with the outside consultants and contractors; Gilbert, Westinghouse, and Daniel. Figure 13.1-3, exclusive of outside constraints, shows the SCE&G post commercial organizational operation.

Gilbert was retained by SCE&G as architect engineer for the entire project, including plant layouts and system arrangements, and design of balance of plant equipment. Engineering efforts by Gilbert were coordinated with construction by the SCE&G Nuclear Engineering Department.

SCE&G has contracted with Westinghouse for the design and manufacture of the complete nuclear steam supply system (NSSS). In addition, Westinghouse provided technical consultation in areas such as construction, initial fuel loading, testing, and initial startup. Westinghouse was also involved in the training of SCE&G operating personnel.

Daniel was under contract by SCE&G to act as general constructor for the Virgil C. Summer Nuclear Station construction activities.

13.1.1.2 In-House Pre-Commercial Organization

This section, which is historical in nature, describes the pre-commercial SCE&G corporate management, including technical support staffing and in-house organizational relationships, established for design, procurement, construction, and quality assurance functions. The responsibilities and authorities of in-house personnel are included. In addition, specific responsibilities and activities are included in order to show the accomplishments and plans for work in certain areas.

13.1.1.2.1 Corporate Management

The SCE&G corporate organization was responsible for handling all matters pertaining to the Virgil C. Summer Nuclear Station, including design, procurement, construction, quality assurance, testing, training, and operation, is shown in Figure 13.1-2. The departments primarily involved with plant activities and their relationships are described below.

The Vice President and Group Executive, Engineering and Construction, was responsible for the construction of power facilities. The Construction Department was separated into the Production Engineering Department and the Construction and Quality Control Department, each headed by a Group Manager. The Group Manager, Production Engineering and the Group Manager, Construction and Quality Control reported directly to the Senior Vice President, and Group Executive, Engineering and Construction.

The Vice President, Nuclear Operations, was responsible for the quality assurance, engineering, licensing, training, and operation of SCE&G nuclear power generating facility.

The General Manager, Nuclear Plant Operations, was responsible for station operations including start-up and test, power ascension, commercial power operation, nuclear security, and emergency planning. He was assisted in accomplishing his responsibilities by the Manager of Nuclear Protection Services, the Emergency Planning Coordinator, and the Manager, Virgil C. Summer Nuclear Station.

The Group Manager, Nuclear Engineering and Licensing, had the responsibility for plant and equipment design; plant licensing; and corporate health physics and environmental programs, geologic and hydrologic studies relating to plant siting, design, construction and support to plant operations. This department was divided into four functional areas; Nuclear Engineering, Nuclear Licensing, the Independent Safety Engineering Group, and Corporate Health Physics and Environmental Programs. The Group Manager, Nuclear Engineering and Licensing, reported directly to the Vice President, Nuclear Operations.

The Group Manager, Nuclear Services, was responsible for the areas of Nuclear Fuel Management, incore technical support fuel cycle requirements, and quality assurance relating to design, construction and operation, and nuclear quality control relating to the operation and modification of the Virgil C. Summer Nuclear Station. Details of the quality assurance and nuclear quality control programs are found in Chapter 17.

The Group Manager, Nuclear Education and Training, was responsible for the development, implementation, and evaluation of operating and technical training programs for the Nuclear Operations Department in coordination with or upon recommendation of the General Manager, Nuclear Plant Operations; the Group Manager, Nuclear Engineering and Licensing; or the Group Manager, Nuclear Services. The Group Manager, Nuclear Education and Training, reported directly to the Vice President, Nuclear Operations.

The General Manager, Purchasing, had the company-wide responsibility for procurement of equipment and materials. This included procurement of safety-related items during design, construction, and operations of SCE&G power facilities. Purchase requisitions for the Virgil C. Summer Nuclear Station were initiated by personnel of the plant staff, nuclear engineering, or purchasing. Additional information pertaining to procurement is found in Chapter 17.

13.1.1.2.2 Specific Responsibilities and Activities

Specific responsibilities and activities in which SCE&G was engaged included:

1. Design and Construction Activities (Project Phase)

The SCE&G Nuclear Engineering function within the Nuclear Engineering and Licensing Department had the responsibility for the design and engineering of the Virgil C. Summer Nuclear Station during the design and construction phase of the project. The Nuclear Engineering Group was responsible for coordinating and approving plant design and engineering, and geological, hydrological, and seismological studies related to the plant design and environmental effects.

Westinghouse was responsible to SCE&G for the design, engineering, procurement, and fabrication, including quality assurance, of the NSSS.

Gilbert had the responsibility for the overall design and engineering of the balance of the plant systems (nuclear and non-nuclear not within the NSSS scope of supply) and the coordination of all plant design and engineering activities. Gilbert design documents were submitted to the SCE&G Nuclear Engineering Department for review and approval. Westinghouse engineering drawings, specifications, and related design and engineering documents were submitted to Gilbert and SCE&G for review, comment, and interface information.

The final decision for procurement of materials and equipment, except those under the Westinghouse NSSS scope of supply, was made by the SCE&G purchasing committee. The vendor proposals were received by Gilbert and SCE&G and were evaluated for compliance by engineering, quality assurance, and purchasing for acceptable responses to the specification requirements in accordance with approved Gilbert and SCE&G evaluation and purchasing procedures. The SCE&G quality assurance group had to concur with the purchasing committee's decision of the selected vendor for safety-related purchases.

Site layout with respect to environmental effects and development of Safety Analysis Reports was done by Gilbert through coordination of the efforts of Westinghouse, Dames and Moore, and SCE&G.

Security during construction was the direct responsibility of the SCE&G Construction Department. Gilbert provided planning for the inclusion of security requirements in the design of the Virgil C. Summer Nuclear Station for the operations phase. The latter security planning and design documents were subject to the review and approval of the SCE&G Nuclear Engineering Department, but were reviewed by all affected SCE&G organizations.

Construction management was the responsibility of the SCE&G Construction Department under the direction of the Nuclear Site Manager who reported to the Group Manager, Construction and Control. Daniel was the constructor. Construction activities were directed by the Daniel Project Manager who reported to the SCE&G Nuclear Site Manager. Project Managers for other site contractors, performing safety-related construction activities, reported to the SCE&G Nuclear Site Manager administratively and to the Daniel Project Manager for scheduling and coordination of work activities.

Quality control activities were the direct responsibility of the SCE&G Quality Control Manager who reported to the SCE&G Group Manager, Construction and Quality Control. Site quality control activities were performed by, or under the direction of, the SCE&G Quality Control Manager, except for those contractors which had quality control responsibility. SCE&G had quality control responsibility for the Daniel scope of construction except for the ASME Boiler and Pressure Vessel Code related activities.

The SCE&G quality assurance section had the primary responsibility for surveillance and audit of site construction activities; however, Daniel had quality assurance responsibility for

the scope of work under its ASME Boiler and Pressure Vessel Code Certificates of Authorization. Several other contractors also performed surveillance and audit of their work onsite. The SCE&G quality assurance group performed surveillance and audit of all site activities including those for which contractors had quality assurance within their scope of activities. Further detail can be found in Section 17.1.

2. Preoperational Activities

The preoperational activities at the Virgil C. Summer Nuclear Station which were being accomplished included the following:

a. Development of human engineering design objectives and design phase review of proposed control room layouts

A coordinated effort had been placed on the design of the control room to best meet the needs of the plant operator during normal operation and emergency situations.

A practical review of the physical dimensions of the control board to suit the operator and the types and arrangement of controls, instrumentation, displays, and alarms required for safe operation and shutdown was performed by the plant staff. Consideration was given to the fact that certain systems normally require more attention from the operator and the controls for these systems were grouped accordingly.

Computers were used to provide supplementary information to the operator and are designed to be an effective tool in the operation of the plant. The design included adequate instrumentation to provide the operator with sufficient information for proper and safe system operation, irrespective of the availability of the computer system. The computer system obtained data by scanning analog and digital sensors. It logged data on typewriters, sequentially logged trip and post trip data, and alarmed various off-normal and abnormal conditions. Monitoring programs were also included for surveillance of reactor control and protection system operations, and for nuclear process calculations.

The computer readout and plant operator's console are located in the control room. The control room was designed to ensure habitability under anticipated operational transients (see Section 9.4 for a discussion of control room ventilation systems).

b. Development and implementation of staff recruiting and training programs

SCE&G had developed a "Plan for Staffing the Virgil C. Summer Nuclear Station," designed for staff selection, training, and recruiting. This plan referenced ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel," as the basis for determining the minimum experience and education requirements for plant personnel. The recommendations of the NRC in WASH-1130, "Utility Staffing and Training for Nuclear Power Plants," were also used in developing this plan. Details pertaining to experience and education requirements are found in Section 13.1.3 and training details are found in Section 13.2 although both are now based on the requirements of ANS 3.1-1981.

c. Development of plans for initial testing

The plans for the preoperational and startup testing of the Virgil C. Summer Nuclear Station were developed by the plant staff. Outside consulting services were used for guidance in establishing these plans. The Manager, Virgil C. Summer Station had the overall responsibility for the development and implementation of this program. Additional details regarding plans for preoperational and startup testing are found in Chapter 14.

d. Development of plant maintenance programs

The plant maintenance program was designed to implement good practices in preventative and corrective maintenance. Such practices assured that the plant would function reliably during its lifetime. This program was designed to control maintenance of equipment and associated controls in an orderly fashion by use of approved procedures.

3. Technical Support for Operations

This section describes the technical services and backup support for operations in the following areas:

a. Nuclear, mechanical, structural, electrical, thermal-hydraulic, plant chemistry, health physics, metallurgy and materials, and instrumentation and controls

The Manager, Virgil C. Summer Nuclear Station had available to him the plant Technical Staff and the offsite Nuclear Engineering Group to support engineering activities of the station. The plant could contact offsite suppliers and consultants to secure information or guidance as required. If offsite engineering was needed to provide support services, the Manager, Nuclear Engineering, determined whether the required work would be performed by the SCE&G nuclear engineering staff, or contracted to a qualified outside organization. A coordinator in the nuclear engineering group was to follow progress and coordinate work.

b. Fueling and refueling operations support

The Manager, Virgil C. Summer Nuclear Station had the option of selecting the qualified personnel for directing fueling and refueling operations.

These personnel could come from the plant staff, other company personnel (especially from nearby SCE&G power facilities), and qualified outside contractors.

c. Maintenance support

The Manager, Virgil C. Summer Nuclear Station had the option to utilize the plant maintenance staff, other company personnel (especially from nearby SCE&G power facilities, company wide maintenance personnel, and construction support), or outside contractors for special support in maintaining the plant.

13.1.1.3 Interrelationships with Contractors

SCE&G Nuclear Engineering Department was responsible for the overall coordination and final approval of plant design and engineering activities during the design and construction phases of the project. During the operating phase, the Nuclear Engineering Department in conjunction with the onsite technical support group was to be responsible for providing technical support services to the Station. The interface between these two Departments was further described in Chapter 17. The SCE&G Nuclear Engineering Department's technical staff and the onsite technical support group were described in Sections 13.1.1.4 and 13.1.2.2, respectively.

Westinghouse design documents which would have an effect on that portion of the plant (BOP) designed by either Gilbert or SCE&G were forwarded to Gilbert or SCE&G for their respective review and comment. Likewise, SCE&G and Gilbert design documents which had an effect on the Westinghouse or other suppliers' scopes of supply were forwarded to these other organizations for their review and comment as appropriate. Specified Gilbert design documents were reviewed and approved by SCE&G Nuclear Engineering. Final acceptance by the SCE&G Nuclear Engineering Department of design concepts, documents, and equipment suppliers was based on recommendations from the responsible Gilbert engineers along with recommendations from within SCE&G Construction, Purchasing, Quality Assurance, and power supply organizations, as appropriate.

Interrelationships and interfaces among various organizations during preoperational and startup testing were described in Section 14.2.2. These relationships for the plant operational phase were described in Chapter 14.

The responsibility for ensuring that equipment suppliers and contractors conform to the approved engineering specifications was the responsibility of Gilbert and/or SCE&G even though equipment was procured by SCE&G Purchasing Department.

Conformance with the approved specifications was verified through implementation of the quality assurance program, and was described in Chapter 17.

13.1.1.3.1 Gilbert Associates, Inc.

The professional qualifications and the organizational structure of Gilbert Associates were presented in Section 1.4.2 and in Chapter 17. During the design and construction phases of the project, the Gilbert Project Manager had the responsibility of coordinating the plant design activities of Gilbert under the overall supervision and direction of the SCE&G Manager, Nuclear Engineering. Upon completion of the plant, Gilbert was to continue to perform engineering services as needed. During the operational phase, the same basic organization which was used during design and construction was to continue with qualifications and structure. (The current organization is shown in Section 1.4.2 and Chapter 17.)

The Gilbert Technical Support Group, working in direct support of the Virgil C. Summer Nuclear Station, would be smaller in size than that required to design the plant. The Project Manager and principal engineers in this continuing engineering services group were to be physically located in

a project island configuration which was designed to enhance a more effective internal interface with the Gilbert organization. The individuals assigned to the continuing services group would, for the most part, be the same personnel who were involved in the original design of the Summer Station. Changes of the Project Manager or principal engineers assigned to this group had to receive approval of the SCE&G Manager, Nuclear Engineering.

The Gilbert project island was to keep and maintain the following records and documents:

1. Project correspondence
2. Project design documents, e.g., layouts, system diagrams, system design descriptions
3. As-built drawings (Gilbert and vendor)
4. Purchase orders
5. Updated FSAR and ER
6. Equipment, valve, instrument, and electrical feeder lists
7. Design calculations
8. Other documents deemed necessary for proper technical support.

A direct telephone line was installed between the Gilbert project office and SCE&G engineering offices. Telecopiers were also available in each location. Home telephone numbers of the principal Gilbert personnel assigned to the project office were available to the SCE&G Nuclear Engineering Department on a continuous and updated basis.

In addition to the personnel assigned to the Gilbert Technical Support Group, Gilbert management was committed to provide its corporate resources as needed.

The Project Manager and principal engineers assigned to the Gilbert continuing services group visited the plant site at least annually for refamiliarization and update on the engineering status and condition of the plant.

13.1.1.3.2 Westinghouse Electric Corporation

The qualifications and structure of Westinghouse were presented in Section 1.4.3 and in Chapter 17. The Westinghouse Project Manager, Pressurized Water Reactors Division, coordinated the design and manufacturing information supplied by Westinghouse with the SCE&G Manager, Nuclear Engineering during the design and construction phase. Upon completion of construction, a Westinghouse Project Manager from the Nuclear Service Division was assigned to the Virgil C. Summer Nuclear Station and was to report to the SCE&G Site Manager, as shown in Figure 13.1-2.

13.1.1.3.3 Daniel International Corporation

The qualifications and structure of Daniel are presented in Section 1.4.4 and Chapter 17. The Daniel Project Manager reported to the SCE&G Site Manager as shown on Figure 13.1-2. This arrangement gave SCE&G the managerial control of all construction activity at the plant site.

13.1.1.3.4 Interrelationships

The present working interrelationships among the contractor organizations mentioned above are described as follows:

SCE&G Engineering Services is responsible for coordinating and approving plant engineering and design.

Westinghouse design documents that have an effect on that part of the plant design performed by Gilbert and SCE&G are forwarded to Gilbert and SCE&G for review and comment. SCE&G and Gilbert design documents which have an effect on the Westinghouse or other suppliers scope of supply are, likewise, sent to Westinghouse and other suppliers for their review and comment. All Gilbert design documents must be reviewed and approved by SCE&G.

Final acceptance by SCE&G Engineering Services of design concepts, documents, and equipment suppliers was based on recommendations from the responsible designers and consultation with SCE&G organizations as appropriate.

The interrelationships and interfaces among various organizations during preoperational and startup testing are described in Section 14.2.2.

The responsibility for ensuring that equipment suppliers and contractors conform to approved specifications is the responsibility of SCE&G. Conformance is verified through implementation of the quality assurance program described in Chapter 17.

13.1.1.4 South Carolina Electric & Gas Company Corporate Technical Staff

The SCE&G corporate technical staff supporting the Virgil C. Summer Nuclear Station was composed of experienced engineers in the Technical Services and Nuclear Regulatory and Developmental Support Services organizations as shown on Figure 13.1-3. This organizational structure functioned until early 1988 wherein the present Nuclear Operations Division was re-organized with all supporting staff located at the Virgil C. Summer Nuclear Station as shown on Figure 13.1-4.

13.1.2 Operating Organization

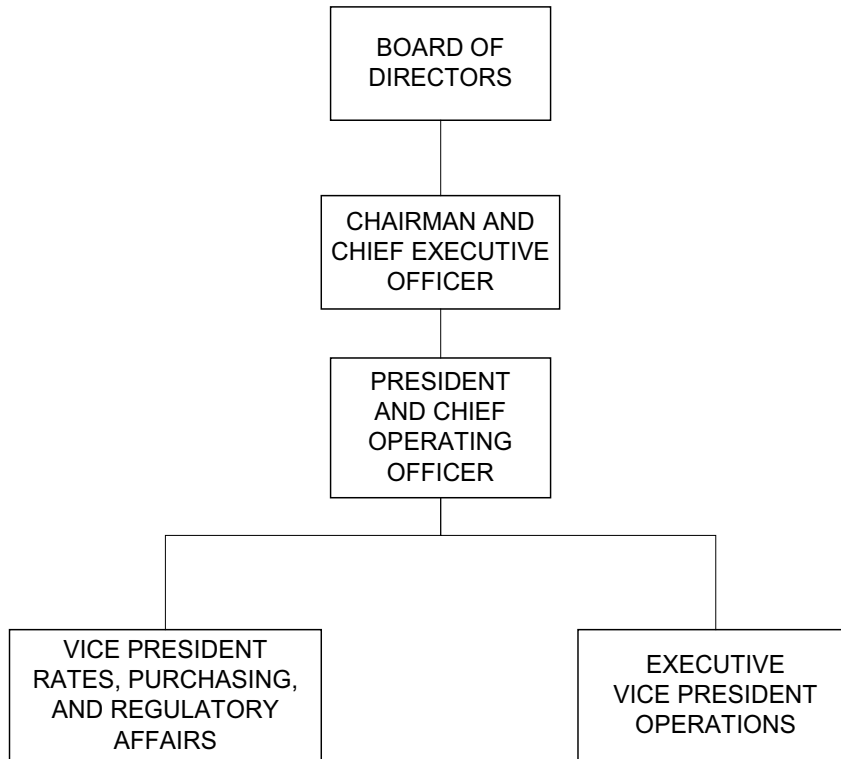
The nuclear organization and key individuals' responsibilities are described in the Quality Assurance Program Description (QAPD) referred to in FSAR Chapter 17.2. Additionally, station personnel will meet the qualification requirements as specified in the station Technical Specifications and the QAPD.

Table 13.1-1
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Figure 13.1-1
SOUTH CAROLINA ELECTRIC & GAS COMPANY
ORGANIZATION CHART

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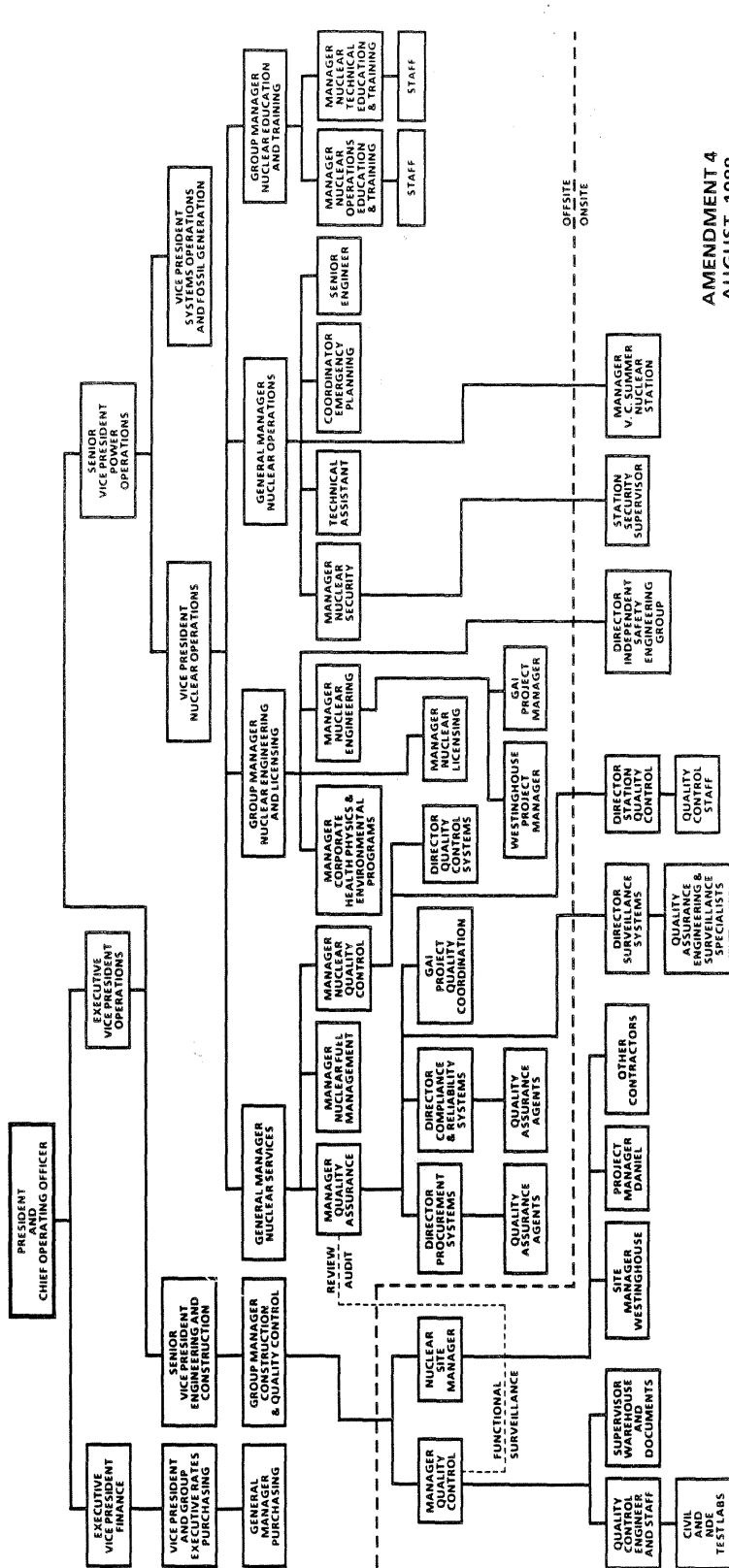
South Carolina Electric & Gas
Company Organization Chart
General Management



AMENDMENT 02-01
MAY 2002

SOUTH CAROLINA ELECTRIC & GAS CO VIRGIL C. SUMMER NUCLEAR STATION
South Carolina Electric & Gas Company Organization Chart
Figure 13.1-1

Figure 13.1-2
**SOUTH CAROLINA ELECTRIC & GAS COMPANY
PRECOMMERCIAL ORGANIZATION CHART**



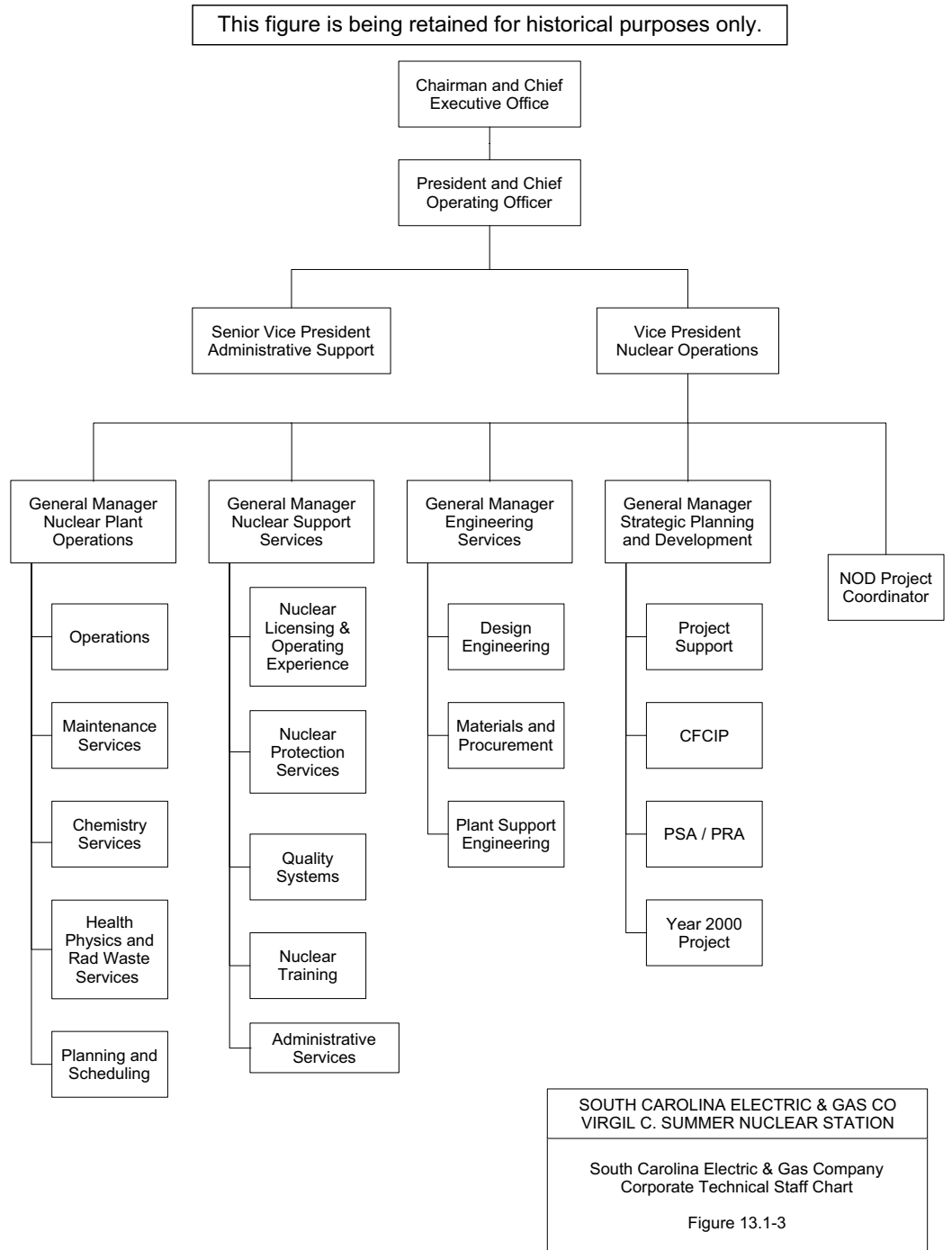
AMENDMENT 4
AUGUST, 1988

SOUTH CAROLINA ELECTRIC & GAS CO.
VIRGIL C. SUMMER NUCLEAR STATION

South Carolina Electric & Gas Company
Precommercial Organization Chart

Figure 13.1-2

Figure 13.1-3
SOUTH CAROLINA ELECTRIC & GAS COMPANY
CORPORATE TECHNICAL STAFF CHART



13.2 TRAINING PROGRAM

13.2.1 INPO Accredited Training Programs

Virgil C. Summer Nuclear Station training programs are INPO accredited. They have been developed using the INPO Principles of Training System Development guidance and are supported by a plant-specific Job and Task Analysis. The programs that are INPO accredited consist of:

1. Non-Licensed Operator Training Program
2. Reactor Operator Training Program
3. Senior Reactor Operator Training Program
4. Licensed Operator Requalification Training Program
5. Shift Technical Advisor Training Program
6. Shift Manager
7. Chemistry Specialist Personnel Training Program
8. Health Physics Technician Personnel Training Program
9. Mechanical Maintenance Personnel Training Program
10. Electrical Maintenance Personnel Training Program
11. Instrument and Control Personnel Training Program
12. Engineering Support Personnel

NOTE 13.2.2

Section 13.2.2 is being retained for historical purposes only (per RN 00-064).

13.2.2 Training Program for Specialists and Nonlicensed Personnel

13.2.2.1 General

Specialized training programs for Virgil C. Summer Nuclear Station personnel are described below. Several technical staff personnel were involved in Senior Reactor Operator's training who were not required to hold a license; however, this training was beneficial in the safe and efficient performance of their assigned duties. SCE&G took advantage of the following specialized training programs offered by Westinghouse.

13.2.2.2 PWR Station Nuclear Engineering

This is a 13 week program conducted by Westinghouse in the Pittsburgh area. Instructors in this program are Westinghouse engineering personnel knowledgeable in the areas in which they instruct. The classes will contain lecture series and problem solving sessions. A topical outline of

the program includes responsibilities and duties of the station nuclear engineer, responsibilities and relationships to federal and state regulatory agencies, plant licensing and reference documentation, basic PWR design considerations, plant testing program, reactor physics testing, plant instrumentation and control, plant computer reactivity considerations, system reliability checks, station fuel management, and emergency situations.

13.2.2.3 Additional Training

1. Mitigating Core Damage Training was taught to the Plant Manager, the Assistant Plant Manager, I&C, Health Physics, and Chemistry personnel also participated in applicable portions of this training program.
2. Any additional training deemed necessary to meet the intent and training requirements described in Quality Assurance Program Description section 2.5 was handled in conjunction with vendors or through local universities and/or other technical schools to ensure trained personnel operate the Virgil C. Summer Nuclear Station.

13.2.3 General Employee Training

13.2.3.1 Station Orientation Training

All personnel granted unescorted access onto the Virgil C. Summer Nuclear Station will be required to attend applicable portions of the station orientation training program. The subjects covered in this training program are listed below and are required on a biennial basis. Portions of the program may be waived based on exemption exams and/or waivers as justified and approved by applicable supervisory personnel.

Station Familiarization

Station Radiation Emergency Plan and Related Procedures

Industrial Safety

Station Security

Quality Assurance

Basic and Station Specific Health Physics - Principles and Practices

13.2.3.2 Temporary Personnel Training

Personnel without unescorted access will be classified as visitor personnel and shall be escorted while within the boundaries of the protected area. Visitor personnel will be trained in emergency plan procedures as appropriate to ensure the safe execution of their duties.

13.2.4 Training Program Administration

Overall responsibility for training of personnel within the Virgil C. Summer Nuclear Station rests with the Senior Vice President and Chief Nuclear Officer through the Vice President, Nuclear Operations and the Director, Nuclear Training. Training is implemented under the direction of the Manager, Nuclear Training.

13.2.5 Records

Records of plant personnel qualification and training are maintained in a computerized data base system with sufficient hard copy records to support the validity of the data base such as class attendance and exam results.

Summary records of plant personnel qualifications and training may be maintained for each member of the plant staff in a qualification and training folder. This folder will contain a resume of the person's qualifications and general records of training programs and courses completed. Those staff members holding an NRC Nuclear Operator's License will be enrolled in a requalification program that is required to maintain their license. For this type of training, the records maintained will be much more extensive and detailed. These records will contain such items as copies of written examinations administered and the answers given by the licensee, retraining examinations, lecture attendance, trainee's evaluations, and results of retraining in areas in which personnel have exhibited deficiencies. This will assure that records are maintained to comply with 10 CFR 55.59(c)(5).

After initial criticality, the training program effectiveness of each employee shall be evaluated by the individual scores on tests given on the lecture material presented to each employee.

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13.3 EMERGENCY PLANNING

The Virgil C. Summer Nuclear Station Radiation Emergency Plan (REP) contains the precautionary planning, delegation of authority and responsibility, and plans of action to protect the public, plant personnel, and equipment in case of an emergency. As specified in 10 CFR 50, Appendix E, this plan is for use at the local level for the control of emergencies such as fire, personal injury, tornadoes and high winds, and incidents that could result in the release of significant amounts of radioactivity. The actual Virgil C. Summer Nuclear Station REP is provided in Appendix 13A.

13.4 REVIEW AND AUDIT

A program of inplant and independent reviews and audits has been developed by SCE&G to provide a system to ensure that plant startup and operation are consistent with company policies, approved procedures, and license provisions. The review and audit program also assures that abnormal occurrences are promptly investigated and corrected in a manner which reduces the probability of recurrence of such events, and detects trends which may not be apparent to a day to day observer. Guidance provided by ANSI N18.7, "Administrative Controls and Quality Assurance for the Operating Phase of Nuclear Power Plants," (Reference 1) has been used in establishing the SCE&G review and audit program for the Virgil C. Summer Nuclear Station.

NOTE 13.4.1

Section 13.4.1 is being retained for historical purposes only.

13.4.1 Review and Audit - Construction

Review and audit during the design and construction phase of the Virgil C. Summer Nuclear Station are a part of the SCE&G quality assurance program. The review function is performed primarily by the exchange of information between SCE&G, the principal contractors, and other contractors and suppliers. Audits are conducted internally and externally in accordance with the approved quality assurance plan to ensure that design and construction are in accordance with the requirements of 10 CFR 50, Appendix B (see Chapter 17).

13.4.2 Review and Audit - Operations

Specific review and audit requirements are assigned to various committees in addition to the review and audit requirements assigned to the Virgil C. Summer quality assurance staff by the quality assurance program for station operations (see Chapter 17). The committees charged with specific review and audit functions are delineated in Dominion's Nuclear Facility QAPD.

The Facility Safety Review Committee is charged with first-level review of station operations. The membership of the committee, committee responsibilities and authority, and quorum and meeting requirements are delineated in the QAPD. The members of this committee who are station supervisory personnel meet or exceed the qualification requirements of the QAPD.

Independent review of the safety of nuclear unit operation is performed by the Management Safety Review Committee. The organization and responsibilities of the Management Safety Review Committee are described in the QAPD.

Maintenance and modification of safety-related equipment are controlled and documented in accordance with the requirements of a formal quality control program for station operation and other administrative controls formulated by written procedures. Audits of quality control programs are periodically conducted as delineated in the operational quality assurance program. The quality assurance and quality control programs pertinent to station operation are discussed in the QAPD.

13.4.3 References

1. ANSI N18.7, "Administrative Controls and Quality Assurance for the Operating Phase of Nuclear Power Plants," February 1976.

13.5 PLANT PROCEDURES

Actions concerning structures, systems, and components of the Virgil C. Summer Nuclear Station that are safety-related are conducted in accordance with approved written procedures. Safety-related structures, systems, and components are those that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public and such structures, systems, or components that are essential for the safe shutdown of the plant.

These procedures are written in sufficient detail that a qualified individual can perform the required function without direct supervision. Some procedural steps such as immediate action steps for emergency procedures are required to be committed to memory. Routine actions are performed in accordance with approved written procedures. Plant procedures will cover the following categories:

1. Administrative Procedures
2. Control Room Operating Procedures
3. Maintenance and Modification Procedures
4. Emergency Plan Procedures
5. Chemical-Radiochemical Control Procedures
6. Plant Radiation Protection Procedures
7. Plant Security Procedures
8. Surveillance Test Procedures
9. Fire Protection Procedures

Procedures contain the following significant aspects wherever they apply to the intent of each particular procedure.

1. Title

A concise descriptive statement describing the activity covered in the procedure.

2. Purpose

A concise descriptive statement describing the purpose and scope of the procedure.

3. References

Material which contains information related to the procedure, such as other plant procedures, instructions, drawings, technical manuals, reports, the FSAR, or other applicable documents.

4. Glossary

Abbreviations and definitions used in the procedure.

5. Prerequisites

Independent actions or procedures which shall be completed and plant conditions which shall exist prior to use of the procedures.

6. Precautions

Actions which if not taken or events which if not avoided when performing the procedure could result in hazardous personnel conditions or damage to plant equipment. Precautions also appear in the main body of the procedure where applicable.

7. Check Off Lists

Lists included in complex procedures requiring the person either performing or supervising the activity being performed to signify by his initials when important procedural steps have been completed.

8. Limitations

Statements specifying limits on the parameters being controlled such as limiting safety settings and limiting conditions for operation as specified in Technical Specifications.

9. Main Body

Statements specifying detailed steps for performing the procedure, presented in a degree of detail necessary for performing the required functions, should be identified.

10. Symptoms

Emergency procedure symptoms shall be included to aid in the identification of the emergency. They should include significant alarms, operating conditions, and, where possible, probable magnitudes of parameter changes.

11. Automatic Actions

The automatic actions that occur as a result of an emergency should be identified.

12. Immediate Operator Actions

For emergencies, steps should be specified for operation of controls or confirmation of automatic actions that are required to stop the degradation of conditions and to mitigate their consequences.

13. Probable Cause

The probable cause for alarms should be specified.

14. Acceptance Criteria

The qualitative or quantitative criteria against which an evaluation of acceptability may be made.

15. Attachments

Additional information that may be attached to a procedure for clarification or ease of understanding.

The Virgil C. Summer Nuclear Station Unit 1 conforms to NQA-1-1994 through Virgil C. Summer's QAPD. Operating procedures were prepared using ANSI N18.7, Revision 1, February 19, 1976 as a guide. The General Manager, Nuclear Plant Operations or his designated alternate has final approval before procedures are implemented.

13.5.1 Administrative Procedures

The administrative procedures as described in the administrative manual provide a clear understanding of operating philosophy and management policies to ensure safe operation of the plant within the limits set by the operating license and Technical Specifications. They provide that plant activities are conducted in a manner that will protect the general public, plant personnel, and equipment. A list of administrative procedure categories is provided in Table 13.5-1. A description of these procedure categories is as follows:

13.5.1.1 Plant Organization and Responsibility Procedures

These procedures describe the plant organization and give the responsibility of the individuals by position and authority to operate the plant in a safe and efficient manner.

13.5.1.2 Development, Review, Approval, and Control of Safety-Related Plant Procedures

These procedures describe the method by which plant procedures are written, the control process for review and approval, and the system utilized to revise the procedures where needed. Administrative procedures, security plan implementing procedures, and emergency plan implementing procedures receive final approval by the General Manager, Nuclear Plant Operations or his designated alternate. They are reviewed under the direction of a supervisor from a group other than the originating group before final approval by the General Manager, Nuclear Plant Operations.

13.5.1.3 Conduct of Plant Operations Procedures

These procedures describe the rules and instructions issued by the General Manager, Nuclear Plant Operations pertaining to personnel conduct and control. These rules and instructions provide a clear understanding of operating philosophy and management policies. They delineate the authority and responsibility of the Reactor Operators and Senior Reactor Operators for the safe operation of the reactor as required by 10 CFR 50.54 (i), (j), (k), (l), and (m). They establish the rules for procedure use and the designation of the persons responsible to authorize a temporary change to an approved procedure. Additional procedures establish standard operating orders which deal with such matters as job turnover and relief, designation of the confines of the Control Room including a diagram of the Control Room that indicates the area designated as at the controls (Figure 13.5-1), transmittal of operating data, limitations on access to equipment, and other such matters. Provisions are made for periodic review and updating of standing orders. Instructions which have short time applicability such as housekeeping, publications and their distribution, and personnel actions are issued as special orders.

As required by NUREG 0578, Section 2.2.1.c, procedures define the procedural steps for relief of shift personnel. Checklists are provided for the oncoming and offgoing Control Room Supervisor and the oncoming Shift Manager to complete and sign. These checklists provide assurance that actual plant parameters are within allowable limits and that required systems are available and are in proper alignment for the prevention and mitigation of operational transients. Systems and components that are in a degraded mode of operation permitted by Technical Specifications shall be listed and time in degraded mode is compared with Technical Specification action statements. Auxiliary Operator checklists include any equipment under maintenance or test that could degrade a system or initiate an operational transient and shall include criteria for acceptable status. The Operations Supervisor will make unannounced audits of shift relief to evaluate the effectiveness of shift relief and turnover.

Also as required by NUREG 0578, Section 2.2.2.a, procedures establish the authority and responsibility of the person in charge of the Control Room to limit access.

As required by NUREG 0737, item I.A.1.3, administrative procedures establish actual work time limitations for plant shift personnel who maintain or operate any structures, systems, or components important to safety.

13.5.1.3.1 Shift Manager's Responsibility

As required by NUREG 0578, Section 2.2.1.a, upper level management shall issue a directive that establishes the management responsibility for the Shift Manager under all plant conditions. It shall contain clear delineation of management chain of authority as to who can, and when the Shift Manager is relieved of the responsibility for direct control of the plant.

An administrative procedure is provided that gives the authority and responsibilities of the Shift Manager, Control Room Supervisor, Control Room Operator, and other shift personnel.

Both on the job training and classes emphasize responsibility for safe operation and management functions as given in the administrative procedure.

A review of administrative duties of the Shift Manager has been conducted by senior plant and corporate management. Additional administrative personnel have been added to the operating group that relieve the Shift Manager of routine duties that distract from the management responsibility for assuring the safe operation of the plant.

NOTE 13.5.1.3.2

Section 13.5.1.3.2 is being retained for historical purposes only.

13.5.1.3.2 Westinghouse Review of Procedures

As required by NUREG 0737, item I.C.7, Westinghouse (NSSS Supplier) reviews station emergency operating procedures, power ascension procedures, and low power physics tests. Additional information on this subject has been submitted to the NRC under separate cover letter dated December 2, 1980.

13.5.1.3.3 NRC Review of Procedures

As required by NUREG 0737, item I.C.8, selected station emergency operating procedures have been demonstrated for the NRC on the Westinghouse Zion Simulator. Also, a walkthrough on the Virgil C. Summer Nuclear Station Control Board was performed as required. NRC comments on these procedures have been resolved.

13.5.1.3.4 Reporting Safety and Relief Valve Failures

Any failure of a pressurizer PORV or safety valve to close will be reported to the NRC promptly. Challenges to these valves will be documented in the annual report.

13.5.1.4 Control of Plant Documents Procedures

These procedures describe the preparation and retention of plant records. Retention periods are established to assure the ability to reconstruct significant events and satisfy statutory requirements.

13.5.1.5 Corrective Action Reporting Procedures

These procedures assure that conditions adverse to plant safety such as equipment and material malfunction, abnormal occurrences, and nonconformances are promptly identified and corrected. They ensure that the cause of the conditions is determined and reported to the appropriate level of management for corrective action.

13.5.1.6 Equipment Control Procedures

These procedures describe the control measures and actions such as locking, tagging, notification, removal of tags, and identification of equipment. They provide for control of equipment to maintain reactor and personnel safety and to avoid unauthorized operation of equipment. As required by NUREG 0737, items I.C.6 and II.K.1 (sub items 5 and 10), administrative procedures provide instructions for verifying correct performance of operating activities. This item has been specifically addressed under separate cover letter to the NRC dated December 11, 1980.

13.5.1.7 Design Modification Control Procedures

These procedures ensure that plant modifications satisfy, at a minimum, the same design requirements as the original equipment. Regulatory Guide 1.64 was used as a guide for the preparation of these procedures.

13.5.1.8 Procurement and Materials Control Procedures

These procedures provide for the control of purchased material, equipment, and services. They provide for proper identification, quality level requirements, control, handling, storage, and shipping of materials, parts, and components. These procedures also provide for the proper documentation to ensure quality of safety-related systems, equipment, and structures after maintenance or repair.

13.5.1.9 Control and Calibration of Test Equipment and Instrumentation Procedures

These procedures ensure that testing and measuring devices are of the proper range and type and are controlled, calibrated, adjusted, and maintained at specified intervals or prior to use to assure the necessary accuracy of calibrated devices. Records are made and equipment suitably marked to indicate calibration status.

13.5.1.10 Control of Special Processes During Operations Procedures

These procedures assure that special processes are accomplished under controlled conditions in accordance with applicable codes, standards, specifications, criteria, and other special requirements using qualified personnel and procedures.

13.5.1.11 Non-Conformance Control/Deficiency Reporting Procedures

These procedures provide for control of items, services, or activities which do not conform to requirements. These procedures include instructions for identification, documentation, segregation, notification of affected organizations, and method of disposition of such items, services, or activities.

13.5.1.12 Test Control Procedures

These procedures assure that testing required to demonstrate that an item will perform satisfactorily in service is accomplished properly. Test procedures incorporate or reference the requirements and acceptance limits contained in applicable design documents. These test procedures may include preoperational tests, initial operational phase tests, surveillance tests, and tests during design, fabrication, and construction activities associated with plant maintenance and modification.

13.5.1.13 Feedback of Operating Experience

In accordance with NUREG 0737, item I.C.5, a program will be established for evaluating operating plant experience and providing the results of the evaluations, as necessary, to pertinent plant personnel. The services of "Industry Groups" such as INPO will be utilized to the extent possible in the performance of this function.

13.5.1.14 ECCS Outages

In accordance with NUREG-0737, item II.K.3.17, a program has been established using existing plant procedures for data collection including ECCS outage times, duration and cause of the outage, components involved in the outage, and corrective action taken. A plant procedure for removal and restoration of station equipment provides measures for data collection. The ECCS data taken by this procedure will be reviewed by appropriate plant personnel to determine if improvements to availability of ECCS are needed.

13.5.2 Control Room Operating Procedures

Control Room operating procedures are those procedures that are performed by the licensed Control Room Operator or under his direction and control. They are a preplanned method for the conduct of operations to minimize reliance on memory. These procedures include anticipated operating conditions, the normal method of control, means for and limits on operation of the plant, or plant systems that affect the safety of the plant and the public. These procedures address the areas discussed in Sections 13.5.2.1 through 13.5.2.6. As stated in NUREG-0660, item I.C. the applicant will incorporate changes into station operating procedures resulting from "Owners Group participation" as deemed necessary. A list of these procedure categories can be found in Table 13.5-2.

13.5.2.1 General Operating Procedures

General Operating Procedures (GOP) provide for the integrated operation of the plant. These procedures provide the sequence of plant operations to take the plant from a given initial condition to a final expected condition. Associated system operating procedures are referenced as applicable. Necessary precautions are inserted at critical points.

13.5.2.2 Emergency Operating Procedures

Emergency Operating Procedures (EOP) are written so that a trained operator and crew will be able to identify an emergency from the symptoms available to them and take immediate action on the expected course of events to place the plant in a known safe condition and to mitigate the consequence of a serious condition should it occur. Since emergencies may not follow anticipated patterns, these procedures provide sufficient flexibility to accommodate variations. Those sections of the procedure that require immediate response action from the operating crew are committed to memory. Considerable judgment on the part of competent personnel is exercised before departure from these procedures.

13.5.2.3 System Operating Procedures

System Operating Procedures (SOP) provide instructions for energizing, starting up, shutting down, changing modes of operation, and other instructions for operations of systems related to the safety of the plant.

These procedures are concerned with systems only and include valve and switch lineups, control operations, and instrumentation within the system boundaries. They are subdivided into normal operations, infrequent operations, and off normal conditions in the main body.

13.5.2.4 Annunciator Response Procedures

Annunciator Response Procedures (ARP) are written to instruct the operator on the proper action to be taken in response to annunciators on the Main Control Board. They contain annunciator identification, inputs into the annunciator, and logical operator responses to be taken to ensure proper corrective action. The ARPs are identified by panel number. An illustration in the beginning of the ARP depicts the annunciator panel. In the case of computer alarms, each alarm's unique identifier is listed.

When use of the ARP is required, the operator selects the proper tab by an alarm panel number.

13.5.2.5 Fuel Handling Procedures

Fuel Handling Procedures (FHP) are written to specify actions and philosophy for core alterations and partial or complete refueling operations. They include requirements for continuous monitoring of neutron flux throughout core loading and audible annunciation of abnormal flux increases. The duties of personnel assigned to refueling, such as periodic data taking, response actions to alarms during refueling, and criteria for stopping the refueling are specified. Also, instructions for proper sequence of events, verification, and frequency of sampling to ensure shutdown margin, communications between the control room and the fuel loading station, documentation of final fuel component serial numbers and location, containment integrity requirements, and rules for periods when refueling is interrupted are included. System operating procedures are referenced as required.

13.5.2.6 Special Procedures

Special procedures are written and issued to direct operations during testing, refueling, maintenance, and modifications. These procedures provide guidance in unusual situations not covered by existing procedures. They ensure orderly and uniform operations for short periods when the plant, a system, or a component is not performing in a normal manner and an existing procedure does not apply. Special procedures designate the period of time during which they may be used and are subject to the same review and approval process as other operating procedures.

13.5.3 Maintenance and Modification Procedures

Maintenance and modification procedures define the policies and practices by which structures, systems, and components are kept in a condition of good repair so that they are capable of reliably performing their intended functions. This includes those activities performed by maintenance or contractor personnel to maintain, repair, or modify safety-related equipment. Additional related activities covered are those by operating personnel to ensure that a planned maintenance activity can be safely accomplished, that proper plant operating conditions exist, to authorize the release of equipment to be maintained using equipment control procedures, and to assure that the equipment has been returned to normal operating status at the completion of maintenance work, as well as verification of functional acceptability. Procedures are written to assure measurement accuracies are adequate to keep safety parameters and controls within safety and operational limits. This instrumentation includes interlocks, alarm devices, sensors, readout instruments, transmitters, signal conditioners, laboratory equipment, key recorders, and protective logic circuits. Calibration, testing, and checking of instrumentation channels are performed at the frequency specified in Technical Specifications. A list of the areas covered by maintenance procedures is given in Table 13.5-3.

13.5.4 Emergency Plan Procedures

These procedures are written in sufficient detail that a qualified individual can perform the required actions without supervision. They provide a step by step order and logical sequence in a concise manner but are flexible enough to give latitude to the user for the exercise of judgment in implementing specific actions or parts of the procedure. These instructions specify the individual or organization having authority and responsibility for performing critical tasks. The actions to be performed by support agencies and the coordination with other elements of the emergency organization are also specified. Guidelines for initiating recovery after the emergency alert is over to restore the plant to the pre-emergency conditions are given. A list of the procedure categories is given in Table 13.5-4.

13.5.5 Chemical-Radiochemical Control Procedures

These procedures provide instructions for maintaining reactor coolant, condensate, and feedwater within prescribed quality limits and include the nature and frequency of sampling and analysis. They also include laboratory instructions and instructions for calibration of laboratory equipment. Limitations on concentrations of agents that could cause corrosive attack, foul heat transfer

surfaces, or become sources of radiation hazards due to activation are given. A list of the procedure categories is given in Table 13.5-5.

13.5.6 Plant Radiation Protection Procedures

These procedures cover plant personnel, other SCE&G personnel temporarily assigned, contractor and vendor personnel, and visitor protection to maintain occupational dose rate to as low as reasonably achievable. They provide coverage for all normal operations and anticipated operational occurrences. This includes refueling, purging, fuel handling and storage, also radioactive material handling, processing, use, and storage. Other areas covered are maintenance, routine operational surveillance, inservice inspection, and calibration. A list of the areas covered by the radiation protection procedure categories is included in Table 13.5-6.

13.5.7 Plant Security Procedures

These procedures are written to supplement physical barriers and features designed to control access to the plant and as appropriate to sensitive areas and equipment within the plant. Information concerning design features and administrative provisions is protected and distribution is limited. Plans for physical protection of the Virgil C. Summer Nuclear Station are described in a separate part of the application for license, withheld from public disclosure pursuant to 10 CFR 2, Paragraph 2.790 (d) (refer to Section 13.7). A list of the areas covered by these procedures is included in Table 13.5-7.

13.5.8 Surveillance Test Procedures

These tests and inspections are performed in accordance with the Technical Specifications to ensure that the required reliability of safety systems is maintained. These surveillance test procedures contain a description of the test objectives, the acceptance criteria used to evaluate the test results, and the prerequisites for performing the test. They include any special conditions to be used to simulate normal or abnormal operating conditions, limiting conditions, the test procedure, and any special test equipment or calibrations required to conduct the test. A master surveillance schedule reflecting the status of surveillance testing is also maintained. Additional control procedures ensure timely conduct of surveillance testing, appropriate documentation, reporting, and evaluation of test results. Significant deficiencies identified by the tests are reported to management. The deficiencies will be evaluated and the condition corrected in a timely manner. A list of surveillance test procedure categories is included in Table 13.5-8.

13.5.9 Fire Protection Procedures

These associated procedures provide the necessary planning and instructions to ensure adequate fire protection for the Virgil C. Summer Nuclear Station. Included, but not limited to, are the provisions made in the Fire Protection (FP) DBD and SAP-131. The responsibilities for preparation of schedules and procedures required by the Operations, Maintenance, and Technical Groups are stated in this report and are detailed in administrative procedures.

Table 13.5-1
Administrative Procedure Categories

Plant Organization and Responsibility Procedures

Development, Review, Approval and Control of Safety-Related Plant Procedures

Conduct of Plant Operations Procedures

Control of Plant Documents Procedures

Corrective Action Reporting Procedures

Equipment Control Procedure

Design Modification Control Procedures

Procurement and Materials Control Procedures

Control and Calibration of Test Equipment and Instrumentation Procedures

Control of Special Processes During Operations Procedures

Non-Conformance Control/Deficiency Reporting Procedures

Test Control Procedures

Table 13.5-2
Control Room Operating Procedure Categories

General Operating Procedures

Emergency Operating Procedures

System Operating Procedures

Annunciator Response Procedures

Fuel Handling Procedures

Special Procedures

Table 13.5-3

Maintenance and Modification Procedure Categories

Mechanical Maintenance Procedures

Electrical Maintenance Procedures

Instrument and Control Maintenance Procedures

Instrument Calibration Test Procedures

Refueling Maintenance Procedures

Material Control Procedures

Safety-Related Structures, Systems or Components Modification
Procedures

Table 13.5-4

Emergency Plan Procedure Categories

Activation and Implementation of Emergency Plan

On-Site and Off-Site Radiological Surveying

Communication and Notification

Radiation Exposure Assessment and Protective Action
Recommendations

On-Site Evacuation and Personnel Accountability

Handling of Injured Personnel

Natural Emergencies

Fire Emergencies

Post-Recovery and Re-Entry

Emergency Training and Drills

Emergency Personnel Exposure Control

Emergency Facilities Activation and Organizational Responsibilities

Table 13.5-5

Chemical-Radiochemical Control Procedure Categories

Chemistry Analytical Procedures

Chemistry Reagent Preparation Procedures

Radiochemistry Analytical Procedures

Radiochemistry Carrier Preparation Procedures

Laboratory Instrumentation Operating and Calibration Procedures

Chemistry and Radiochemistry Records, Reports and Log Procedures

Procedures for Steam Generator Chemistry Control During Dry or Wet Layup

Chemistry Sampling Techniques

Radiochemistry Counting Techniques

Table 13.5-6

Plant Radiation Protection Procedure Categories

Radiological Surveys and Monitoring Procedures

Radiation Work Permit Procedures

Use and Testing of Protective Equipment and Clothing Procedures

Personnel Decontamination Procedures

Health Physics Quality Control and Instrumentation Calibration Procedures

Procedures for the Movement of Radioactive Materials Within the Plant

Contaminated Tools and Equipment Storage Procedures

Radioactive Waste Management Procedures

Control of Radioactive Calibration Source Procedure

Radiological Environmental Monitoring Procedures

Personnel Dosimetry and Radiation Exposure Control (Internal and External) Procedures

Records and Reporting Procedures

Special Nuclear Materials Accountability Procedures

Control of Personnel Conduct in Radiation and High Radiation Areas

Area and Equipment Decontamination Procedures

Table 13.5-7

Plant Security Procedure Categories

Means for Control of Plant Access Procedures

Control of Personnel Procedures

Access Control During Emergencies Procedure

Equipment Monitoring Procedures

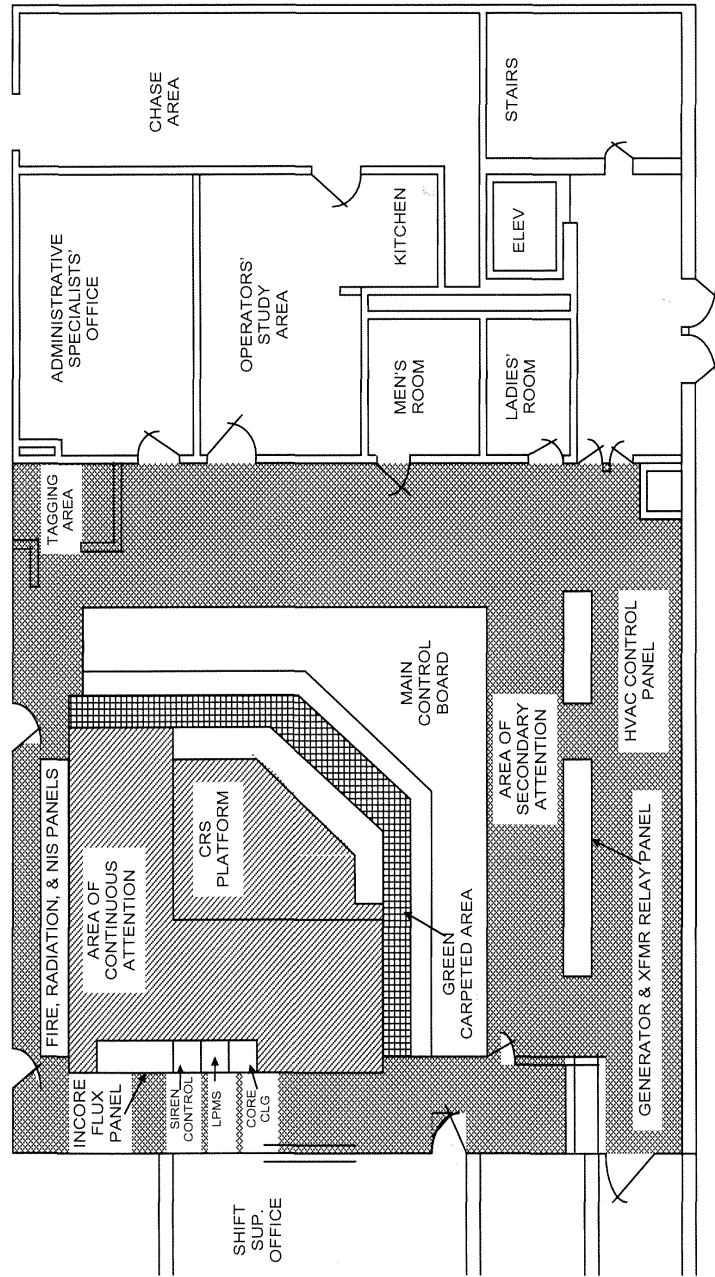
Potential Security Threats Handling Procedures

Notification, Reports and Records

Table 13.5-8
Surveillance Test Procedure Categories
Operations Group Surveillance Procedures
Maintenance Group Surveillance Procedures

Figure 13.5-1
CONTROL ROOM AREAS DESIGNATED AS AT THE CONTROLS

CONTROL ROOM AREAS DESIGNATED AS AT THE CONTROLS



Ref. Dwg. E-005-001 ASSOCIATED WITH
FSAR Figures 1.2a-15, 12.1-19, and 12a.4-7

SOUTH CAROLINA ELECTRIC & GAS CO. VIRGIL C. SUMMER NUCLEAR STATION
Figure 13.5-1
Control Room Area Designated As At The Controls

Amendment 00-01
December 2000

13.6 PLANT RECORDS

Records documenting the quality of the design, construction, testing, operation, maintenance, and modification of the Virgil C. Summer Nuclear Station will be maintained to meet the requirements of Basic Requirement 17 and Supplement 17S-1 of ASME NQA-1-1994 and Regulatory Guide 1.28, Revision 3 (see Appendix 3A). The records maintained comply with the requirements of Criterion XVII of Appendix B of 10 CFR 50 and Basic Requirement 17 and Supplement 17S-1 of ASME NQA-1-1994 and Regulatory Guide 1.28, Revision 3 (see Appendix 3A).

Records are normally stored and maintained in the permanent records storage facility which provides facilities to preserve the records in a manner to preclude deterioration. Records that are not maintained in the permanent record storage facility will be duplicated and stored in a separate remote location. Electronic records will be maintained as described in Part II, Section 17.2 of the Virgil C. Summer QAPD.

Records will not normally be removed from the permanent records storage facility as specified in implementing procedures. However, under unusual circumstances, the Document Control and Records Supervisor, designee, or the General Manager, Organization Effectiveness may authorize temporary removal of records from the permanent records storage facility. The SCE&G quality assurance organization is responsible for auditing these quality records as described in Part II, Section 18 of the Virgil C. Summer Nuclear Station Unit 1's QAPD.

13.6.1 Plant History

Upon completion of the plant design, construction, and construction testing, the engineering and construction departments transferred or disclosed the location of all quality documentation to the plant staff and operations quality services group. The engineering and construction departments will state that the record types necessary to document quality have been identified and that the list is complete and accurate. Records not maintained at the plant site are kept at the material suppliers due to code and standard requirements or at Parsons Power, LTD (formerly Gilbert Associates, Inc.) offices, the architect-engineer for the Virgil C. Summer Nuclear Station.

This documentation, together with the records generated during the testing program, operation, maintenance, inspection, modification, and events of the Virgil C. Summer Nuclear Station, as described in Sections 13.6.2 and 13.6.3, serves as a recorded history of plant activities.

13.6.2 Operating Records

Preoperational and startup test records generated during the testing program are kept at the plant site along with appropriate operating records. These operating records include chemistry records; manuals and procedures; operating, maintenance, and testing records; special nuclear materials records; records and reports required by regulatory agencies; and administrative records.

Operations records and logs that are kept at the plant are considered as nonpermanent and are maintained for a predetermined time as shown on the SCE&G records accumulation and retention

chart, unless a longer period is required by applicable regulations. The following are examples of these type records:

1. Startup problems and resolutions.
2. Records of normal plant operation, including power levels and period of operation at each level.
3. Records of principal safety-related maintenance activities, including inspection, repair, substitution, or replacement of principal items of equipment.
4. Records of abnormal occurrences and unusual events.
5. Records of shipment of radioactive material.

Operations records that are considered to be of a significant value in demonstrating safe operation capability, in maintaining, replacing, or repairing an item, in determining the cause of an accident or malfunction of an item, or in providing baseline data for inservice inspection are maintained for the life of the plant. The following are examples of these type records:

1. Applicable plant procedures and drawings.
2. Records of inservice inspections.
3. Records of radiation exposure of plant personnel and others, who enter radiation control areas.
4. Records of new and spent fuel inventory and assembly histories.
5. Records and drawing changes made to the plant as described in the FSAR.
6. Reactor water chemistry data.

13.6.3 Event Records

Records of occurrences such as radioactive releases and environmental surveys are maintained at the plant site. These records are considered to be of a significant value in demonstrating the safe operation capability of the plant and are therefore kept for the life of the plant. The following are examples of these type records:

1. Records of plant radiation and contamination surveys.
2. Gaseous and liquid release data.

13.7 INDUSTRIAL SECURITY

The security plans for the Virgil C. Summer Nuclear Station are submitted under separate cover pursuant to paragraph 2.790 (d), 10 CFR Part 2, "Rules of Practice."

Appendix 13A
South Carolina Electric and Gas Company
Virgil C. Summer Nuclear Station
Radiation Emergency Plan

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APPENDIX 13A

RADIATION EMERGENCY PLANNING

The Radiation Emergency Plan to support a full power operating license, which addresses the requirements of NUREG-0654, was submitted under separate cover to the NRC on June 4, 1980. Revisions to the Radiation Emergency Plan are submitted to the NRC in accordance with the requirements of 10 CFR 50.54(q).