

Docket No. 50-395

Mr. John L. Skolds  
 Senior Vice President, Nuclear Operations  
 South Carolina Electric & Gas Company  
 Virgil C. Summer Nuclear Station  
 Post Office Box 88  
 Jenkinsville, South Carolina 29065

Dear Mr. Skolds:

SUBJECT: ISSUANCE OF AMENDMENT NO. 117 TO FACILITY OPERATING LICENSE NO. NPF-12 REGARDING RADIOACTIVE EFFLUENT RELEASE REPORT AND VARIOUS ADMINISTRATIVE CHANGES - VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. M89171)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 117 to Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The amendment changes the Technical Specifications in response to your application dated February 25, 1994.

The amendment changes the Technical Specifications to permit the submittal of the Radioactive Effluent Release Report on an annual rather than a semiannual basis; allows changes to the Offsite Dose Calculation Manual (ODCM) to be submitted in the Radioactive Effluent Release Report rather than in the monthly operating report; removes the title of Executive Vice President Operations from the TS; removes the list of audit frequencies from the TS and places them under Quality Systems management; changes the title of Associate Manager, Health Physics to Radiation Protection Manager; removes references to specific letters; removes TS 6.4 on training; corrects various typographical errors, and includes items omitted in previous amendments.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's Bi-weekly Federal Register notice.

Sincerely,  
 Original Signed by:  
 George F. Wunder, Project Manager  
 Project Directorate II-1  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 117 to NPF-12
2. Safety Evaluation

cc w/enclosures:

See next page

\* See Previous concurrence

OFFICE	LA: PD2-1	PM: PD2-1	PD: PD2-1	HHFB	OTSB
NAME	PAnderson	GWunder	DMatthews	MSlosson*	CGrimes*
DATE	8/13/94	8/31/94	8/31/94	07/18/94	08/05/94
OFFICE	PRPB	OGC			
NAME	LCunningham*	CWoodhead*			
DATE	07/28/94	08/25/94	/ /94	/ /94	/ /94

Document Name: G:\SUMMER\SUM89171.AMD

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AMENDMENT NO.117 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER, UNIT NO. 1

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OPA  
OC/LFDCM  
E. Merschoff, R-II

cc: Summer Service List

210081



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

Docket No. 50-395

September 6, 1994

Mr. John L. Skolds  
Senior Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, South Carolina 29065

Dear Mr. Skolds:

SUBJECT: ISSUANCE OF AMENDMENT NO. 117 TO FACILITY OPERATING LICENSE NO. NPF-12 REGARDING RADIOACTIVE EFFLUENT RELEASE REPORT AND VARIOUS ADMINISTRATIVE CHANGES - VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. M89171)

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A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's Bi-weekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, appearing to read "George F. Wunder".

George F. Wunder, Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

## Enclosures:

1. Amendment No. 117 to NPF-12
2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. John L. Skolds  
South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station

cc:

Mr. R. J. White  
Nuclear Coordinator  
S.C. Public Service Authority  
c/o Virgil C. Summer Nuclear Station  
Post Office Box 88, Mail Code 802  
Jenkinsville, South Carolina 29065

J. B. Knotts, Jr., Esquire  
Winston & Strawn Law Firm  
1400 L Street, N.W.  
Washington, D.C. 20005-3502

Resident Inspector/Summer NPS  
c/o U.S. Nuclear Regulatory Commission  
Route 1, Box 64  
Jenkinsville, South Carolina 29065

Regional Administrator, Region II  
U.S. Nuclear Regulatory Commission  
101 Marietta St., N.W., Ste. 2900  
Atlanta, Georgia 30323

Chairman, Fairfield County Council  
Drawer 60  
Winnsboro, South Carolina 29180

Mr. Heyward G. Shealy, Chief  
Bureau of Radiological Health  
South Carolina Department of Health  
and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

Mr. R. M. Fowlkes, Manager  
Nuclear Licensing & Operating Experience  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, South Carolina 29065



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

DOCKET NO. 50-395

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 117  
License No. NPF-12

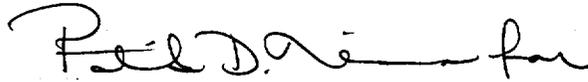
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by South Carolina Electric & Gas Company (the licensee), dated February 25, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-12 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. South Carolina Electric & Gas Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 6, 1994

ATTACHMENT TO LICENSE AMENDMENT NO.

TO FACILITY OPERATING LICENSE NO. NPF-12

DOCKET NO. 50-395

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are indicated by marginal lines.

Remove Pages

Insert Pages

1-4	1-4
1-5	1-5
3/4 3-26	3/4 3-26
3/4 3-30	3/4 3-30
3/4 3-34	3/4 3-34
3/4 3-67	3/4 3-67
3/4 3-70	3/4 3-70
6-3	6-3
6-6	6-6
6-8	6-8
6-9	6-9
6-11	6-11
6-12	6-12
6-12a	6-12a
6-12b	6-12b
6-14	6-14
6-15	6-15
6-16	6-16
6-20	6-20

## DEFINITIONS

### OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.17 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.8.

### OPERABLE - OPERABILITY

1.18 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

### OPERATIONAL MODE - MODE

1.19 An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table 1.1.

### PHYSICS TESTS

1.20 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

### PRESSURE BOUNDARY LEAKAGE

1.21 PRESSURE BOUNDARY LEAKAGE shall be leakage (except steam generator tube leakage) through a non-isolable fault in a Reactor Coolant System component body, pipe wall or vessel wall.

### PROCESS CONTROL PROGRAM (PCP)

1.22 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

## DEFINITIONS

### PURGE - PURGING

1.23 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

### QUADRANT POWER TILT RATIO

1.24 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average.

### RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2775 MWt.

### REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until loss of stationary gripper coil voltage.

### REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

### SHUTDOWN MARGIN

1.28 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

### SLAVE RELAY TEST

1.29 A SLAVE RELAY TEST shall be the energization of each slave relay and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, as a minimum, of associated testable actuation devices.

1.30 Not Used

### SOURCE CHECK

1.31 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>Functional Unit</u>	<u>Total Allowance (TA)</u>	<u>Z</u>	<u>S</u>	<u>Trip Setpoint</u>	<u>Allowable Value</u>
<b>3. CONTAINMENT ISOLATION</b>					
<b>a. Phase "A" Isolation</b>					
1. Manual	NA	NA	NA	NA	NA
2. Safety Injection	See 1 above for all safety injection setpoints and allowable values				
3. Automatic Actuation Logic and Actuation Relays	NA	NA	NA	NA	NA
<b>b. Phase "B" Isolation</b>					
1. Automatic Actuation Logic and Actuation Relays	NA	NA	NA	NA	NA
2. Reactor Building Pressure-High 3	3.0	0.71	1.5	≤12.05 psig	≤12.31 psig
<b>c. Purge and Exhaust Isolation</b>					
1. Safety Injection	See 1 above for all safety injection setpoints and allowable values				
2. Containment Radioactivity High	NA	NA	NA	*	*
3. Automatic Actuation Logic and Actuation Relays	NA	NA	NA	NA	NA

\* Trip setpoints shall be set to ensure that the limits of ODCM Specification 1.2.2.1 are not exceeded.

INSTRUMENTATION

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
e. Reactor Building Purge and Exhaust Isolation	Not Applicable
f. Emergency Feedwater Pumps	Not Applicable
g. Service Water System	≤71.5(4)/81.5(5)
h. Reactor Building Cooling Units	≤76.5(4)/86.5(5)
i. Control Room Isolation	Not Applicable
3. <u>Pressurizer Pressure-Low</u>	
a. Safety Injection (ECCS)	≤27.0(2)/27.0(1)
b. Reactor Trip (from SI)	≤3.0
c. Feedwater Isolation	≤10.0
d. Containment Isolation -Phase "A"	≤45.0(4)/55.0(5)
e. Reactor Building Purge and Exhaust Isolation	Not Applicable
f. Emergency Feedwater Pumps	Not Applicable
g. Service Water System	≤71.5(4)/81.5(5)
h. Reactor Building Cooling Units	≤76.5(4)/86.5(5)
i. Control Room Isolation	Not Applicable
4. <u>Differential Pressure Between Steam Lines-High</u>	
a. Safety Injection (ECCS)	≤27.0(2)/37.0(3)
b. Reactor Trip (from SI)	≤3.0
c. Feedwater Isolation	≤10.0
d. Containment Isolation -Phase "A"	≤45.0(4)/55.0(5)

## INSTRUMENTATION

TABLE 3.3-5 (Continued)

### TABLE NOTATION

- (1) Diesel generator starting and sequence loading delays from under voltage included. Response time limit includes positioning of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps and RHR pumps. Sequential transfer of centrifugal charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is not included.
- (2) Diesel generator starting delay not included. Sequence loading delay included. Offsite power available. Response time limit includes positioning of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps. Sequential transfer of centrifugal charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.
- (3) Diesel generator starting and sequence loading delays from under voltage included. Response time limit includes positioning of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps. Sequential transfer of centrifugal charging pump suction from the VCT to the RWST (RWST valves open, then the VCT valves close) is included.
- (4) Diesel generator starting delay not included. Sequence loading delay included. Offsite power available.
- (5) Diesel generator starting and sequence loading delays from undervoltage included.

## INSTRUMENTATION

### EXPLOSIVE GAS MONITORING INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.3.3.9 The explosive gas monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.5 are not exceeded.

APPLICABILITY: As shown in Table 3.3-13.

#### ACTION:

- a. With an explosive gas monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, declare the channel inoperable and take the ACTION shown in Table 3.3-13.
- b. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Restore the inoperable instrumentation to operable status within 30 days and, if unsuccessful prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.9 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-9.

TABLE 4.3-9

EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM				
a. Hydrogen Monitor	D	Q(1)	M	**
b. Oxygen Monitor	D	Q(2)	M	**

## ADMINISTRATIVE CONTROLS

### 6.2.3 INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)

#### FUNCTION

6.2.3.1 The ISEG shall function to examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety.

#### COMPOSITION

6.2.3.2 The ISEG shall be composed of a multi-disciplined dedicated onsite group with a minimum assigned complement of five engineers or appropriate specialists.

#### RESPONSIBILITIES

6.2.3.3 The ISEG shall be responsible for maintaining surveillance of plant activities to provide independent verification\* that these activities are performed correctly and that human errors are reduced as much as practical.

#### AUTHORITY

6.2.3.4 The ISEG shall make detailed recommendations for procedure revisions, equipment modifications, maintenance activities, operations activities or other means of improving plant safety to the General Manager, Nuclear Safety.

### 6.2.4 SHIFT TECHNICAL ADVISOR

The Shift Technical Advisor shall provide technical support to the Shift Supervisor in the areas of thermal hydraulics, reactor engineering and plant analysis with regard to the safe operation of the unit.

### 6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions except for the Radiation Protection Manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the members of the Independent Safety Engineering Group, each of whom shall have a Bachelor of Science degree or registered Professional Engineer and at least two years experience in their field. At least one year experience shall be in the nuclear field.

### 6.4 NOT USED

\*Not responsible for sign-off function.

## ADMINISTRATIVE CONTROLS

### RECORDS

6.5.1.8 The Plant Safety Review Committee shall maintain written minutes of each PSRC meeting that, at a minimum, document the results of all PSRC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Vice President, Nuclear Operations, and the Chairman of the Nuclear Safety Review Committee.

### 6.5.2 NUCLEAR SAFETY REVIEW COMMITTEE (NSRC)

#### FUNCTION

6.5.2.1 The Nuclear Safety Review Committee shall function to provide independent review and audit of designated activities in the areas of:

- a. nuclear power plant operations
- b. nuclear engineering
- c. chemistry and radiochemistry
- d. metallurgy
- e. instrumentation and control
- f. radiological safety
- g. mechanical and electrical engineering
- h. quality assurance practices

#### COMPOSITION

6.5.2.2 NSRC shall consist of a Chairman and four or more other members appointed by the Vice President, Nuclear Operations. No more than a minority of the members of the NSRC shall have line responsibility for the operation of the unit.

The NSRC members shall hold a Bachelor's degree in an engineering or physical science field or equivalent experience and a minimum of five years of technical experience of which a minimum of three years shall be in one or more of the disciplines of 6.5.2.1a through h. In the aggregate, the membership of the committee shall provide specific practical experience in the majority of the disciplines of 6.5.2.1a through h.

#### ALTERNATES

6.5.2.3 All alternate members shall be appointed in writing by the Vice President, Nuclear Operations; however, no more than two alternates shall participate as voting members in NSRC activities at any one time.

#### CONSULTANTS

6.5.2.4 Consultants shall be utilized as determined by the NSRC Chairman to provide expert advice to the NSRC.

## ADMINISTRATIVE CONTROLS

### AUDITS

6.5.2.8 The NSRC shall have cognizance of the audits listed below. Audits may be performed by using established SCE&G groups such as the ISEG and QA or by outside groups as determined by the NSRC. Audit reports or summaries will be the basis for NSRC action:

- a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions.
- b. The performance, training and qualifications of the entire unit staff.
- c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety.
- d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50.
- e. The Emergency Plan and implementing procedures.
- f. The Security Plan and implementing procedures.
- g. Any other area of unit operation considered appropriate by the NSRC or the Vice President, Nuclear Operations.
- h. The Fire Protection Program and implementing procedures.
- i. An independent fire protection and loss prevention inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or a qualified outside firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.
- k. The radiological environmental monitoring program and the results thereof, including the performance of activities required by the quality assurance program per R.G. 4.15 Rev. 1, February 1979.
- l. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures.
- m. The PROCESS CONTROL PROGRAM and implementing procedures for solidification of radioactive wastes.

### AUTHORITY

6.5.2.9 The NSRC shall report to and advise the Vice President, Nuclear Operations, on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

## ADMINISTRATIVE CONTROLS

### RECORDS

6.5.2.10 Records of NSRC activities shall be prepared, approved and distributed as indicated below:

- a. Minutes of each NSRC meeting shall be prepared, approved and forwarded to the Vice President, Nuclear Operations, within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Vice President, Nuclear Operations, within 14 days following completion of the review.
- c. Audit summary reports encompassed by Section 6.5.2.8 above, shall be forwarded to the NSRC and the Vice President, Nuclear Operations. Full audits shall be forwarded to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.

### 6.5.3 TECHNICAL REVIEW AND CONTROL

#### ACTIVITIES

6.5.3.1 Activities which affect nuclear safety shall be conducted as follows:

- a. Procedures required by Technical Specification 6.8 and other procedures which affect plant nuclear safety, and changes thereto, shall be prepared, reviewed and approved. Each such procedure or procedure change shall be reviewed by an individual/group other than the individual/group which prepared the procedure or procedure change, but who may be from the same organization as the individual/group which prepared the procedure or procedure change. Procedures other than Administrative Procedures will be approved as delineated in writing by the General Manager, Nuclear Plant Operations. The General Manager, Nuclear Plant Operations will approve administrative procedures, security implementing procedures, and emergency plan implementing procedures. Temporary approval to procedures which clearly do not change the intent of the approved procedures can be made by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License. For changes to procedures which may involve a change in intent of the approved procedures, the person authorized above to approve the procedures shall approve the change.
- b. Proposed changes or modifications to plant nuclear safety-related structures, systems and components shall be reviewed as designated by the General Manager, Nuclear Plant Operations. Each such modification shall be designed as authorized by Engineering Services and shall be reviewed by an individual/group other than the individual/group which designed the modification, but who may be from the same organization as the individual/group which designed the modifications. Implementation of modifications to plant nuclear safety-related structures, systems and components shall be concurred in by the General Manager, Nuclear Plant Operations.

## ADMINISTRATIVE CONTROLS

- d. Critical operation of the unit shall not be resumed until authorized by the Commission.

### 6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.
- b. Refueling operations.
- c. Surveillance and test activities of safety-related equipment.
- d. Security Plan.
- e. Emergency Plan.
- f. Fire Protection Program.
- g. PROCESS CONTROL PROGRAM.
- h. OFFSITE DOSE CALCULATION MANUAL.
- i. Effluent and environmental monitoring program using the guidance in Regulatory Guide 4.15, Revision 1, February 1979.

6.8.2 Each procedure of 6.8.1 above, and changes thereto, shall be reviewed prior to implementation as set forth in 6.5 above.

6.8.3 NOT USED.

6.8.4 The following programs shall be established, implemented and maintained:

- a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the chemical and volume control, letdown, safety injection, residual heat removal, nuclear sampling, liquid radwaste handling, gas radwaste handling and reactor building spray system. The program shall include the following:

- (i) Preventive maintenance and periodic visual inspection requirements, and
- (ii) Integrated leak test requirements for each system at refueling cycle intervals or less.

- b. In-Plant Radiation Monitoring

- (i) Training of personnel,
- (ii) Procedures for monitoring, and
- (iii) Provisions for maintenance of sampling and analysis equipment.

## ADMINISTRATIVE CONTROLS

### c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

- (i) Identification of a sampling schedule for the critical variables and control points for these variables,
- (ii) Identification of the procedures used to measure the values of the critical variables,
- (iii) Identification of process sampling points, including monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,
- (iv) Procedures for the recording and management of data,
- (v) Procedures defining corrective actions for all off-control point chemistry conditions,
- (vi) A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

### d. Postaccident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

- (i) Training personnel,
- (ii) Procedures for sampling and analysis,
- (iii) Provisions for maintenance of sampling and analysis equipment.

### e. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determinations in accordance with the methodology in the ODCM,
- 2) Limitations on the concentration of radioactive material released in liquid effluents to unrestricted areas conforming to 10 CFR Part 20, Appendix B, Table II, Column 2;

## ADMINISTRATIVE CONTROLS

### e. Radioactive Effluent Controls Program (Continued)

- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM;
- 4) Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas conforming to Appendix I to 10 CFR Part 50;
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days;
- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases or radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual or dose commitment conforming to Appendix I to 10 CFR Part 50;
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1;
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary conforming to Appendix I to 10 CFR Part 50;
- 9) Limitations on the annual and quarterly doses to a member of the public from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the site boundary conforming to Appendix I to 10 CFR Part 50;
- 10) Limitations on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

### f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measures of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM;

**f. Radiological Environmental Monitoring Program (Continued)**

- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the site boundary are identified and that modifications to the monitoring program are made if required by the results of the census; and
- 3) Participation in an Inter-laboratory Comparison Program to ensure that independent checks on the precision and accuracy of measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

## ADMINISTRATIVE CONTROLS

This report shall also include the results of specific activity analysis in which the primary coolant exceeded the limits of specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

### ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.6 The annual radiological environmental operating report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year.

The report shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

6.9.1.7 Not used.

### ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

6.9.1.8 Annual radioactive effluent release report covering the operation of the unit during the previous 12 months of operations shall be submitted within 60 days after January 1 of each year.

The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

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## ADMINISTRATIVE CONTROLS

6.9.1.9 Not used.

## MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORV's or safety valves, shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Office of Inspection and Enforcement, no later than the 15th of each month following the calendar month covered by the report.

A report of any major changes to the radioactive waste treatment systems shall be submitted with the Monthly Operating Report for the period in which the evaluation was reviewed and accepted as set forth in 6.5 above.

## CORE OPERATING LIMITS REPORT

6.9.1.11 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT prior to each reload cycle, or prior to any remaining portion of a reload cycle, for the following:

- a. Moderator Temperature Coefficient BOL and EOL Limits and 300 ppm surveillance limit for Specification 3/4.1.1.3,
- b. Shutdown Rod Insertion Limit for Specification 3/4.1.3.5,
- c. Control Rod Insertion Limits for Specification 3/4.1.3.6,
- d. Axial Flux Difference Limits, target band, and APLND for Specification 3/4.2.1,
- e. Heat Flux Hot Channel Factor,  $F_Q^{RTP}$ ,  $K(Z)$ ,  $W(Z)$ ,  $APL^{ND}$  and  $W(Z)_{BL}$  for Specification 3/4.2.2,
- f. Nuclear Enthalpy Rise Hot Channel Factor,  $F_{\Delta H}^{RTP}$ , and Power Factor Multiplier,  $PF_{\Delta H}$ , limits for Specification 3/4.2.3.

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

- a. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (W Proprietary).

## ADMINISTRATIVE CONTROLS

### 6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 The ODCM shall be approved by the Commission prior to implementation.

6.14.2 Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with appropriate analyses or evaluations justifying the change(s); and
  - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent dose or setpoint calculations.
- b. Shall become effective after review and acceptance by the PSRC and the approval of the General Manager, Nuclear Plant Operations.
- c. Shall be submitted to the Commission in the form of a complete legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.117 TO FACILITY OPERATING LICENSE NO. NPF-12  
SOUTH CAROLINA ELECTRIC & GAS COMPANY  
SOUTH CAROLINA PUBLIC SERVICE AUTHORITY  
VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-395

1.0 INTRODUCTION

By letter dated February 25, 1994, South Carolina Electric & Gas Company (the licensee) submitted a request for changes to the Virgil C. Summer Nuclear Station, Unit No. 1 (Summer Station), Technical Specifications (TS). The proposed changes would permit the submittal of the Radioactive Effluent Release Report on an annual rather than a semiannual basis; allow changes to the Offsite Dose Calculation Manual (ODCM) to be submitted in the Radioactive Effluent Release Report rather than in the monthly operating report; remove the title of Executive Vice President Operations from the TS; remove the list of audit frequencies from the TS and place them under Quality Systems management; change the title of Associate Manager, Health Physics to Radiation Protection Manager; remove references to specific letters; remove TS 6.4 on training; and correct various typographical errors and omissions.

2.0 EVALUATION

The Summer Station TS require the licensee to submit a Semiannual Radioactive Effluent Release Report. The proposed amendment would replace this with a requirement to submit an Annual Radioactive Effluent Release Report. Section 50.36a(a)(9)(2) of 10 CFR requires a licensee to report on effluent releases annually; therefore, the staff finds this change to be acceptable.

Section 6.14.2.c of the TS, as revised through Amendment 104, requires that the licensee submit changes to the ODCM as a part of the Semiannual Effluent Release Report. Section 6.9.1.10 of the TS requires that changes to the ODCM be submitted as a part of the Monthly Operating Report. The proposed change would remove the requirement for a monthly submittal from TS 6.9.1.10 and require that changes to the ODCM be submitted with the Annual Radioactive Effluent Release Report. This change is in consistent with the revised Standard Technical Specifications and the staff finds it acceptable.

The proposed amendment would modify TS Section 6.3, "Unit Staff Qualifications," to replace a reference to the Associate Manager, Health Physics, with a reference to the Radiation Protection Manager. The position of Associate Manager, Health Physics, no longer exists. The proposed change would make the qualifications for Radiation Protection Manager equivalent to the current qualifications for Associate Manager, Health Physics. The staff

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finds that this change is administrative and does not relax any qualification standard. The change is, therefore, acceptable.

The proposed amendment would revise TS Section 6.3 by removing references to two letters that provide guidance on staff qualifications; the amendment would also remove TS section 6.4, "Training." In 1993, the Commission issued 10 CFR 50.120, "Training and qualification of nuclear power plant personnel." Since 10 CFR 50.120 envelops the training and qualification requirements contained in sections 6.3 and 6.4, the staff finds the proposed changes to these sections to be acceptable.

The proposed amendment would remove the frequencies specified for audits described in Section 6.5.2.8 of the TS. The audits shall remain in the TS and shall remain under the control of the Nuclear Safety Review Committee; details of the audits would be relocated to the QA Plan. The effect of the change would be to allow plant management more flexibility in scheduling audits using the guidance of Standard Review Plan 17.2. This is in accordance with current regulatory positions and is acceptable.

The proposed amendment would correct typographical errors and omissions from previous amendments. These corrections are described in the following table:

<u>Page</u>	<u>Specification</u>	<u>Description of Change</u>
1-4	Title	Title was omitted with issuance of Amendment No. 104.
	1.17, 4th line	Remove the "s" from "effluents." This was a typographical error in Amendment No. 104.
1-5	Title	Title was omitted with issuance of Amendment No. 104.
	1.23	Repagination change only (previously on page 1-4).
3/4 3-26	Footnote	Change "Specification 3.11.2.1" to "ODCM Section 1.2.2.1." Amendment No. 104 did not reflect this change.
3/4 3-30	Table 3.3-5 (2.g, 2.h, 3.g, 3.h)	Insert " $\leq$ " before 71.4 and 76.5. This was inadvertently omitted in Amendment No. 108.
3/4 3-34	Table 3.3-5	Underline the word "not" in Table Notation (2), first sentence.

<u>Page</u>	<u>Specification</u>	<u>Description of Change</u>
3/4 3-67	3.3.3.9	Change "3.11.2.1" to "3.11.2.5" and remove the last sentence. Specification 3.11.2.1 was deleted by Amendment No. 104.
3/4 3-67	Action a.	First line: change "a" to "an." Third line: insert the word "the" between "take" and "Action." These were typographical errors made in Amendment No. 104.
	Action b.	Delete the last sentence.
	Action c.	Remove "6.9.1.12.b." Step 6.9.1.12.b was deleted by Amendment No. 88.
	4.3.3.9	Remove "SOURCE CHECK." This should have been removed by Amendment No. 104.
3/4 3-70	Channel Calibration Column	Change Q(4) to Q(1) and change Q(5) to Q(2). Amendment No. 104 paginated the Table Notations and page 3/4 3-70 did not reflect this change.
	6.4 Training	Deleted. Add words "NOT USED."
6-11	6.8.3	Add "6.8.3 NOT USED" to eliminate confusion.
6-12	6.8.4.e	Fourth line: insert "the" between "in" and "ODCM."
	6.8.4.e.2	Second line: insert "to" between "conforming" and "10."
6-12a	6.8.4.f	Third line: change "or" to "of."  Seventh line: add "the" between "in" and "ODCM."
6-12b	6.8.4.f	Title: Change "Radioactive Effluent Controls" to "Radiological Environmental Monitoring."

<u>Page</u>	<u>Specification</u>	<u>Description of Change</u>
6-15	6.9.1.8	This page left blank intentionally due to repagination on page 6-14.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of South Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

This amendment changes recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: G. Wunder

Date: September 6, 1994