

February 12, 1990

Docket No. 50-395

DISTRIBUTION

Mr. O. S. Bradham  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
P.O. Box 88  
Jenkinsville, South Carolina 29065

See attached sheet

Dear Mr. Bradham:

SUBJECT: ISSUANCE OF AMENDMENT NO. 84 TO OPERATING LICENSE NPF-12 -  
V. C. SUMMER NUCLEAR STATION, UNIT NO. 1, REGARDING DIESEL  
GENERATOR OIL STORAGE VOLUME (TAC 74825)

The Nuclear Regulatory Commission has issued the enclose Amendment No. 84 to Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The Amendment consists of changes to the Technical Specifications (TS) in response to your application dated July 21, 1989, as supplemented September 21, 1989 and December 11, 1989.

Your July 21, 1989 submittal requested a revision to Technical Specification (TS) 3/4.8.1, A. C. Sources,. This revision would change the required volume of oil stored for each emergency diesel generator to 47,100 gallons per fuel storage system while operating and to 33,200 gallons per fuel storage system while shutdown. The Bases to TS 3/4.8.1 were also changed to reflect the above revision.

This Amendment approves this TS change. A copy of the related Safety Evaluation is enclosed. The Notice of Issuance will be included in the Commission's Bi-weekly Federal Register notice.

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

Sincerely,

Original Signed By:

John J. Hayes, Jr., Project Manager  
Project Directorate II-1  
Division of Reactor Projects I/II

Enclosures:

1. Amendment No. 84 to NPF-12
2. Safety Evaluation

cc w/enclosures:  
See next page

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OFC	:LA:	PDRT:	DRPR:	PM:	PD21:	DRPR:	D:	PD21:	DRPR:	:	:	:	:
NAME	:PAnderson:	:	JHayes:	:	EBadenham:	:	:	:	:	:	:	:	:
DATE	:1/25/90	:	1/25/90	:	2/12/90	:	:	:	:	:	:	:	:

*CP*

AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER, UNIT 1

Docket File

NRC PDR

Local PDR

PDII-1 Reading

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E. Butcher (11F23)

ACRS (10)

GPA/PA

ARM/LFMB

cc: Licensee/Applicant Service List



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

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. 84  
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 licensees), dated July 21, 1989, as supplemented September 21, 1989 and December 11, 1989, 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:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 84, 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

E.G Tourigny/for

Elinor G. Adensam, Director  
Project Directorate II-1  
Division of Reactor Projects I/II

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 12, 1990

OFC	:LA:PD21	:DRPR:PM:PD21	:DRPR:DEST:SEB	: OGC	:D:PD21:DRPR	:	:
NAME	:PAnderson	:JHayes:sw	:SNewberry C. McCracken	: E Adensam	:	:	:
DATE	:1/19/90	:1/22/90	:1/26/90	:1/19/90	:2/12/90	:	:

ATTACHMENT TO LICENSE AMENDMENT NO. 84  
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 identified by amendment number and contain vertical lines indicating the areas of change.

Remove Pages

3/4 8-1  
3/4 8-8  
B 3/4 8-1

Insert Pages

3/4 8-1  
3/4 8-8  
B 3/4 8-1

## 3/4.8 ELECTRICAL POWER SYSTEMS

### 3/4.8.1 A.C. SOURCES

#### OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent Emergency Diesel Generators (EDG), each with:
  1. A separate day fuel tank containing a minimum volume of 300 gallons of fuel,
  2. A separate fuel storage system containing a minimum volume of 47,100 gallons of fuel, and
  3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable:
  1. Demonstrate the OPERABILITY of the remaining offsite A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
  2. If either EDG has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.3 separately for each such EDG within 24 hours unless the diesel is already operating, and
  3. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one EDG of 3.8.1.1.b inoperable:
  1. Demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
  2. If the EDG became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining EDG by performing Surveillance Requirements 4.8.1.1.2.a.3 within 24 hours\*, and

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\*This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## ELECTRICAL POWER SYSTEMS

### A.C. SOURCES

#### SHUTDOWN

### LIMITING CONDITION FOR OPERATION

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3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator\* with:
  1. A day fuel tank containing a minimum volume of 300 gallons of fuel,
  2. A fuel storage system containing a minimum volume of 33,200 gallons of fuel, and
  3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

#### ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool. In addition, when in MODE 5 with the Reactor Coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

### SURVEILLANCE REQUIREMENTS

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4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2 (with the exception of 4.8.1.1.2.a.4) and 4.8.1.1.3.

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\*ESF load sequencer may be deenergized in Modes 5 and 6 provided that the loss of voltage and degraded voltage relays are disabled.

## 3/4.8 ELECTRICAL POWER SYSTEMS

### BASES

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#### 3/4.8.1, 3/4.8.2 AND 3/4.8.3 A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source. The A.C. and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices, that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE, and that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977, and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, as modified by the NRC's review and approval of South Carolina Electric & Gas Company's June 10, 1985 and December 6, 1985 amendment requests.

The fuel storage system minimum volume of fuel to demonstrate operability of the diesel generators was based on fuel consumption determined from time dependent loads following a design basis accident and a loss of off-site power as listed in FSAR Table 8.3-3 for seven days plus a 10% fuel margin as recommended in Regulatory Guide 1.137, Revision 2, "Fuel-Oil Systems for Standby Diesel Generators," position C.1.C(2).



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 84 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

In a letter dated July 21, 1989, South Carolina Electric & Gas Company (the licensee) submitted a proposed change to Technical Specification (TS) 3/4.8.1, "A. C. Sources". The initial request was supplemented by submittals dated September 21, 1989 and December 11, 1989, which provided clarifying information.

TS 3.8.1.1 and 3.8.1.2 specify the minimum operability requirements for A. C. electrical power sources while operating (Modes 1-4) and shutdown (Modes 5 & 6). One of the criteria in establishing operability is the specification of the minimum volume of oil required for each separate emergency diesel generator fuel storage system. This requirement ensures that sufficient power is available to supply safety related equipment that is required for the safe shutdown of the plant or mitigation and control of accident conditions.

ANSI Standard N195-1976, "Fuel Oil Systems for Stand-By Diesel Generators", provides a method of calculation for fuel oil storage volume requirements which is accepted by the NRC as meeting General Design Criterion (GDC) 17 of 10 CFR 50, Appendix A and is referenced in Regulatory Guide 1.137. In April 1989, the licensee identified a discrepancy in the requirements for the volume of stored emergency diesel generator fuel oil. The current design basis calculation was not in agreement with the existing TS. The design basis calculations determined that the minimum required fuel oil storage volume for each emergency diesel generator fuel oil storage system should be 47,100 gallons while in Modes 1-4 rather than the present value of 42,500 gallons. The value while in Modes 5 & 6 should be 33,200 gallons rather than the existing value of 30,000 gallons.

## 2.0 EVALUATION

The staff has reviewed the licensee's submittal. The propose change brings the Summer TS into agreement with the design basis calculations for the facility. In addition, conformance with GDC 17 occurs with the incorporation of this change. The proposed change also ensures that an adequate supply of oil will be available for the emergency diesel generators so that they may be utilized for either the safe shutdown of the plant or to mitigate and control accident conditions, should such an event occur. Therefore, since the proposed change brings the Summer TS into conformance with the regulations and is consistent with the plant's design basis, the staff has determined that the licensee's request is acceptable.

## 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in the 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). 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.

## 4.0 CONCLUSION

The Commission has issued a "Notice of Consideration of Issuance of Amendment to Facility Operating License and Propose No Significant Hazards Consideration Determination and Opportunity for Hearing" which was published in the FEDERAL REGISTER on January 10, 1990 (55 FR 938) and consulted with the State of South Carolina. No public comments or request for hearing were received, and the State of South Carolina did not have comments.

The staff has concluded, based upon 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Hayes

Dated: February 12, 1990

Mr. O. S. Bradham  
South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station

cc:

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