June 5, 1991

Docket No. 50-395

Distribution
See attached page

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

Dear Mr. Skolds:

SUBJECT: ISSUANCE OF AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-12 REGARDING DIESEL GENERATOR TESTING - VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. 79684)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 99 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 in response to your application dated February 4, 1991, as supplemented March 27, 1991.

The amendment changes the Technical Specifications to separate the loss of offsite power (LOOP) test from the 24-hour load test in order to obtain more flexible outage scheduling and to avoid unnecessary cycling of the emergency diesel generator (EDG). The hot restart capability of the EDG would still be demonstrated by bringing the EDG to a full-load stabilized operating temperature before initiating the LOOP test, but the requirement to conduct this demonstration immediately following the 24-hour test would be removed.

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,

Orignal 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. 99 to NPF-12
2. Safety Evaluation

cc w/enclosures:
See next page

*See previous concurrence

OFC	:LA:PD21:DRPE	:PM:PD21:DRPE	:OGC	:D:PD21:DRPE	:
NAME	:PAnderson	:GWunder:as	:CBarth*	:AMendiola	:
DATE	:6/7/91	:06/04/91	:05/23/91	:6/5/91	:

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Document Name: SUMMER AMEND 79684

AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER, UNIT No. 1

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cc:

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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. 99
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 4, 1991, as supplemented March 27, 1991, 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. 99 , 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 thereof.

FOR THE NUCLEAR REGULATORY COMMISSION

Orignal signed by:

Anthony J. Mendiola, Acting 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: June 5, 1991

*See previous concurrence

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:OGC	:PD21:DRPR	:	:	:
NAME	:PAnderson	:GWunder:as	:CBarth*	:AMendiola	:	:	:
DATE	:6/5/91	:06/0/91	:05/23/91	:6/5/91	:	:	:

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ATTACHMENT TO LICENSE AMENDMENT NO. 99

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
3/4 8-6	3/4 8-6
3/4 8-6a	3/4 8-6a
3/4 8-7	3/4 8-7

SURVEILLANCE REQUIREMENTS (Continued)

7. Verifying the EDG operates for at least 24 hours.
   a) The EDG shall be loaded to the continuous rating (4150-4250 kw**) for the time required to reach engine temperature equilibrium, at which time the EDG shall be loaded to an indicated target value of 4676 kw (between 4600-4700 kw**) and maintained for 2 hours.
   b) During the remaining 22 hours of this test, the EDG shall be loaded to an indicated 4150-4250 kw**.
   c) During this test the steady state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.
8. Verifying that the auto-connected loads to each EDG do not exceed the 2000 hour rating of 4548 kw.
9. Verifying the EDG's capability to:
   a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
   b) Transfer its loads to the offsite power source, and
   c) Be restored to its standby status.
10. Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizes the emergency loads with offsite power.
11. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross connection lines.
12. Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval.
13. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
    a. Barring Device
    b. Remote-Local-Maintenance Switch
14. Verifying that within 5 minutes of operating the diesel generator for at least 1 hour at a load of 4150-4250 KW** the diesel starts on the auto-start signal (Loss of Off-Site Power signal), energizes the emergency busses with permanently connected loads

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer, and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.

h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 504 rpm in less than or equal to 10 seconds.

i. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution or its equivalent, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III subsection ND of the ASME Code at a test pressure equal to 110 percent of the system design pressure.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per diesel generator basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Number of Failures in Last 100 Valid Tests*	Test Frequency
≤ 1	≤ 4	Once per 31 days
≥ 2**	≥ 5	Once per 7 days

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.

For the purposes of determining the required test frequency, the previous test failure count may be reduced to zero if, in conjunction with the manufacturer a complete diesel overhaul to like-new conditions is completed, and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with Surveillance Requirement 4.8.1.1.2.a.3 and 4.8.1.1.2.a.4; four tests, in accordance with Surveillance Requirement 4.8.1.1.2.f. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.

**The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 99 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 4, 1991, as supplemented March 27, 1991, South Carolina Electric & Gas Company submitted a request for a change to the Virgil C. Summer Nuclear Station, Unit No. 1 (Summer Station), Technical Specifications (TS). The proposed change would separate the loss of offsite power (LOOP) test from the 24-hour load test in order to obtain more flexible outage scheduling and to avoid unnecessary cycling of the emergency diesel generator (EDG). The hot restart capability of the EDG would still be demonstrated by bringing the EDG to a full-load stabilized operating temperature before initiating the LOOP test. The March 27, 1991, supplement renumbered a surveillance requirement (SR) and did not affect the staff's finding of no significant hazards consideration.

2.0 EVALUATION

Existing Summer Station TS SR 4.8.1.1.2.g.7.d requires that a simulated LOOP test per SR 4.8.1.1.2.g.4.b be performed within 5 minutes following completion of the diesel generator 24-hour load test. The purpose of performing the LOOP test requirement within 5 minutes of the 24-hour performance test is to assure diesel generator hot restart capability at full-load operating temperature conditions. The present SR 4.8.1.1.2.g.7.d includes in it the performance of the LOOP test after each 24-hour load test. These tests are required at least once per 18 months. The licensee has proposed to delete the simulated LOOP test requirement from SR 4.8.1.1.2.g.7.d, and instead has proposed to add the simulated LOOP test requirement in new SR 4.8.1.1.2.g.14. The new SR will include a requirement for stabilization of full-load operating temperature prior to conducting the simulated LOOP test. This is similar to the existing requirements.

The licensee states that past operating experience has demonstrated that operation of the emergency diesel generators under loads of 4150 to 4250 KW results in the diesel generator reaching full load temperature in less than 1-hour, and that this temperature remains essentially constant throughout the 24-hour run period. Based on the above mentioned information (i.e. only a 1-hour warmup period is required at rated load in order to achieve a stabilized operating

temperature), the licensee has stated that it is not necessary to couple the simulated LOOP test to the diesel generator 24-hour load test. In addition, this existing requirement to schedule the stimulated LOOP test within 5 minutes of completing the 24-hour load test reduces flexibility, leads to unnecessary cycling of the emergency diesel generators and creates the potential for critical path scheduling complications and delays. The staff agrees with the licensee that there is no technical basis to specify that the stimulated LOOP test start within 5 minutes of the completion of the 24-hour load test as long as this test is conducted when the EDG has achieved a stabilized operating temperature. Therefore, the licensee's proposed change to conduct the simulated LOOP test independent of the diesel generator 24-hour load test per new SR 4.8.1.1.2.g.14 is found acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 9385). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 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 the 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: R. Jenkins

Date: June 5, 1991