



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 29, 2000

Mr. Stephen A. Byrne  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, South Carolina 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 - ISSUANCE OF  
AMENDMENT RE: REVISION OF THE TECHNICAL SPECIFICATION  
SURVEILLANCE REQUIREMENT FOR PRESSURE TESTING THE DIESEL  
FUEL OIL SYSTEM (TAC NO. MA8633)

Dear Mr. Byrne:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 147 to Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The amendment changes the Technical Specifications (TS) in response to your application dated April 6, 2000.

This amendment proposes to modify the pressure testing requirements for the American Society of Mechanical Engineers (ASME) Code portions of the diesel fuel oil system that currently require a hydrostatic test every 10 years at 110% of system design pressure. The revision would allow ASME Code Class 3 portions of the diesel fuel oil system to be pressure tested in accordance with Section XI of the Code as required by TS 4.0.5. This will permit the use of Code Case N-498-1 as accepted by Regulatory Guide 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's Bi-weekly Federal Register notice. This completes the staff's efforts on TAC No. MA8633.

Sincerely,

Karen Cotton, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosures:

1. Amendment No. 147 to NPF-12
2. Safety Evaluation

cc w/encls: See next page

AMENDMENT NO. 147 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER, UNIT NO. 1

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Mr. Stephen A. Byrne  
South Carolina Electric & Gas Company

**VIRGIL C. SUMMER NUCLEAR STATION**

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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. 147  
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 April 6, 2000, 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. 147, 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



Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: August 29, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 147

TO FACILITY OPERATING LICENSE NO. NPF-12

DOCKET NO. 50-395

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page

3/4 8-6a

Insert Page

3/4 8-6a

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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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  $7200 \pm 720$  volts and  $60 \pm 1.2$  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 in accordance with Specification 4.0.5.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 147 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 application dated April 6, 2000, South Carolina Electric & Gas Company (SCE&G, the licensee) requested changes to the Technical Specifications (TS) for the Virgil C. Summer Nuclear Station (VCSNS). The proposed changes would modify the pressure testing requirements for the American Society of Mechanical Engineers (ASME) Code portions of the diesel fuel oil system that currently require a hydrostatic test every 10 years at 110% of system design pressure. The revision would allow ASME Code Class 3 portions of the diesel fuel oil system to be pressure tested in accordance with Section XI of the Code as required by TS 4.0.5. This will permit the use of Code Case N-498-1 as accepted by Regulatory Guide (RG) 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity.

2.0 BACKGROUND

By letter dated April 6, 2000, SCE&G submitted a TS change request related to pressure testing portions of the diesel fuel oil system at VCSNS. Specifically, the proposed TS change request seeks to modify the pressure testing requirements for the ASME Code portions of the diesel fuel oil system that currently require a hydrostatic test every 10 years at 110% of system design pressure. The revision would allow ASME Code Class 3 portions of the diesel fuel oil system to be pressure tested in accordance with Section XI of the Code as required by TS 4.0.5. This will permit the use of Code Case N-498-1 as accepted by RG 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity. Code Case N-498-1 allows licensees to perform an inservice leak test at normal operating temperature and pressure as opposed to a hydrostatic test. The proposed amendment will revise the surveillance specified by TS 4.8.1.1.2.i.2.

The existing TS 4.8.1.1.2.i.2 was developed from RG 1.137, Revision 1, "Fuel-Oil Systems for Standby Diesel Generators," October 1979. The licensee addressed this RG in the VCSNS Final Safety Analysis Report (FSAR) with the position that inspection and testing would be in accordance with the ASME Code, Section XI. The current Code of record for VCSNS is the 1989 Edition. The 1989 Edition requires that a hydrostatic test be performed on all Class 1, 2 and 3 systems once each 10-year interval of the inservice inspection plan.

Section 50.55a of Title 10 of the *Code of Federal Regulations* (10 CFR 50.55a) currently approves the 1995 Edition (including 1996 Addenda) of the ASME Code, Section XI, which removed the requirement to perform a 10-year hydrostatic pressure test as a form of leakage test.

### 3.0 EVALUATION

The information provided by SCE&G in support of the TS change request has been evaluated. The staff accepts the licensee's conclusion that hydrostatic testing of ASME Code Class 1, 2, and 3 systems was intended to be an enhanced leakage test as opposed to a test for structural integrity. The assumption that any leakage would be discovered when hydrostatic test pressures cause a pre-existing flaw to propagate through-wall has not been observed in previous inservice inspections. Industry experience has shown that the majority of all leaks discovered originated at normal operating pressures. Therefore, a pressure test at normal operating pressure is effective for discovering through-wall flaws.

It is important to note that the operating pressure for the VCSNS diesel generator fuel oil system is well below the system design pressure. Therefore, in order to perform the hydrostatic test prescribed by the existing TS requirement at 110% of system design pressure, the system is subjected to pressures high above the normal operating pressure without a meaningful increase in data pertaining to system integrity. The staff concurs with the licensee's conclusion that a pressure test at normal operating pressure is effective for discovering through-wall flaws, and industry experience supports this assessment. In addition, this request is in accordance with the recent rule change to 10 CFR 50.55a. The September 1999 rule change approved the 1995 Edition (including 1996 Addenda) of the ASME Code, Section XI, which removed the requirement to perform a 10-year hydrostatic pressure test as a form of leakage test.

### 4.0 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.

### 5.0 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 a surveillance requirement. 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 (65 FR 25768). 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.

## 6.0 CONCLUSION

The staff concludes that the proposed TS amendment to test ASME Code Class 3 portions of the diesel fuel oil system in accordance with Section XI of the Code, as required by TS 4.0.5, is acceptable. The amendment will permit the use of Code Case N-498-1 as accepted by RG 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity. Therefore, the proposed revision may be incorporated into the VCSNS TS.

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: Andrea Lee

Date: August 29, 2000