

March 5, 2002

Mr. Stephen A. Byrne  
Senior Vice President, Nuclear Operations  
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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 TO TECHNICAL SPECIFICATION TABLE 3.3-3, ENGINEERED  
SAFETY FEATURE INSTRUMENTATION - FOOTNOTE (TAC NO. MB2777)

Dear Mr. Byrne:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 156 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 August 20, 2001.

This amendment revises Technical Specifications (TS) Table 3.3-3 by adding a footnote regarding the operability requirements for the main steam line isolation valves (MSIVs) and the engineered safety feature actuation system (ESFAS) functions when the average reactor coolant temperature is below the P-12 interlock setpoint (i.e., 552° F). This exception facilitates surveillance testing and channel calibration of the MSIV and ESFAS steam line isolation instrumentation functions while maintaining the plant in a safe condition.

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. MB2052.

Sincerely,

/RA/

Gordon E. Edison, Sr. 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. 156 to NPF-12
2. Safety Evaluation

cc w/encls: See next page

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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. 156  
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 August 20, 2001, 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. 156 , 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

***/RA by Leonard N. Olshan for/***

Richard J. Laufer, Acting 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: March 5, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 156

TO FACILITY OPERATING LICENSE NO. NPF-12

DOCKET NO. 50-395

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

3/4 3-19  
3/4 3-20  
3/4 3-22  
3/4 3-23

Insert Pages

3/4 3-19  
3/4 3-20  
3/4 3-22  
3/4 3-23

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 156 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 August 20, 2001, South Carolina Electric & Gas Company, the licensee for the Virgil C. Summer Nuclear Station (VCSNS), requested NRC's approval to amend its operating license NPF-12. This proposed amendment will add a footnote (i.e., footnote ####) to Technical Specification (TS) Table 3.3-3 regarding the operability requirements for the main steam line isolation valves (MSIVs) and the engineered safety feature actuation system (ESFAS) functions when the average reactor coolant temperature is below the P-12 interlock setpoint (i.e., 552° F). This exception facilitates surveillance testing and channel calibration of the MSIV and ESFAS steam line isolation instrumentation functions while maintaining the plant in a safe condition. The TS Bases are unaffected by the changes proposed in this amendment request.

On January 9, 2002, the licensee informed the NRC that NUREG-1431, Revision 2, April 2001, is the proper reference for this amendment request. The licensee had correctly referenced Revision 2 in its cover letter dated August 20, 2001, but in its introductory description of the safety evaluation, it had inadvertently referenced Revision 1, April 1995. The NRC used Revision 2 as the basis for its review after receiving confirmation from the licensee.

## 2.0 EVALUATION

The proposed revision will add a footnote #### to TS Table 3.3-3 for Functions 4.a through 4.e (the Steam Line Isolation Functional Unit) and to Function 9.b (the ESFAS Low-Low  $T_{avg}$ , P-12 Interlock) regarding the applicable modes for the operability. ( $T_{avg}$  is the average temperature of the reactor coolant). This revision will allow V.C. Summer to exclude ESFAS steam line isolation instrumentation operability in Mode 3 when the main steam isolation valves, along with associated bypass valves, are closed and disabled, and eases the restriction of Specification 3.0.4 when performing reactor coolant system (RCS) resistance temperature device (RTD) cross calibrations at temperatures below the ESFAS P-12 Interlock for Low-Low  $T_{avg}$ . The proposed TS footnote #### states, "Except when below P-12 with all MSIVs and bypasses closed and disabled."

## 2.1 Evaluation of the Changes for Functions 4.a through 4.e

The addition of footnote ### to Functions 4.a through 4.e will allow the licensee to exclude the ESFAS steam line isolation instrumentation operability requirements in Mode 3 when the MSIVs, along with associated bypass valves, are closed and disabled. This footnote applied to Functions 4.a through 4.e provides an exception to the requirements for operability of the ESFAS main steam isolation functions in Mode 3. These functions cause the MSIVs to close, isolating the main steam lines. This exception is reasonable because main steam isolation has already been accomplished at this point.

This request is also consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Volume 1, Revision 2, April 2001 (STS). The STS provide a footnote (i.e., footnote h) for STS Table 3.3.2-1, which excludes operability of the steam line isolation function in Modes 1, 2, or 3 if the MSIVs are closed. This exception allows surveillance testing of the ESFAS instrumentation associated with the various isolation functions while maintaining the plant in a safe condition. Also, STS Table 3.3.2-1 for Function 4.e, High Steam Flow in Two Steam Lines, indicates that operability is required for the coincident low-low  $T_{avg}$  above the P-12 setpoint.

On the basis of the foregoing, the staff concludes that the addition of footnote ### to Functions 4.a through 4.e is acceptable.

## 2.2 Evaluation of the Changes for Function 9.b

The addition of footnote ### to Function 9.b will ease the restriction of Specification 3.0.4 when performing RCS RTD cross calibrations at temperatures below the ESFAS P-12 Interlock for Low-Low  $T_{avg}$ . This proposed amendment allows the RCS narrow range temperature channels to remain in test, with test equipment installed, while the reactor heats up through the threshold from Mode 4 to 3 (i.e., at 350° F). This eases the restriction of Specification 3.0.4 when performing RCS RTD cross calibrations at temperatures below the P-12 interlock setpoint (i.e., 552° F) for Low-Low  $T_{avg}$ .

With the RCS temperature channels in test, the P-12 interlock becomes inoperable due to the loss of automatic reset capability. As is discussed in Section B 3/4.3 of the TS, the ESFAS P-12 interlock performs the following functions:

On increasing primary loop temperature, P-12 automatically reinstates safety injection actuation and steam line isolation on low steam line pressure, and removes a blocking signal from the steam dump system. On decreasing primary coolant loop temperature, P-12 allows the manual block of safety injection actuation and steam line isolation on low steam line pressure and automatically provides a blocking signal to the steam dump system.

These functions are not compromised by the proposed change since:

1. The steam line isolation function is already in effect under these conditions.
2. With the steam lines isolated, steam dump is effectively isolated from the primary system.
3. The Steam Line Pressure - Low SAFETY INJECTION function, per existing footnote ## to TS Table 3.3-3, is permitted to be blocked in Mode 3 below the P-12 setpoint.

Via administrative controls, the RCS RTD cross calibrations will be conducted below the P-12 interlock setpoint, thus allowing the P-12 interlock to be returned to an operable status prior to operation at or above the P-12 setpoint. Therefore, the proposed change does not result in an adverse impact on the ESFAS functions.

Following a plant outage, the RTDs in the RCS, both narrow range and wide range, are cross calibrated during isothermal plant conditions to verify proper operation. Typically, test circuitry is installed during Mode 4 and RCS temperature data is collected at several temperature plateaus (e.g., 345° F, 450° F, and 550° F) below the P-12 interlock setpoint (i.e., 552° F) while the plant heats up. Narrow range RCS RTD temperature indications will not be functioning while the test circuitry is connected for this test. Data is taken simultaneously for all the narrow range RTDs in order to optimize the cross calibration procedure. The wide range RTD temperature indication will be momentarily interrupted, one RTD at a time, during data collection.

The proposed qualifying footnote ###, when applied to Function 9.b, supports continuous performance of RTD cross calibration on all narrow range RCS temperature channels associated with  $T_{avg}$ . As indicated above, the testing is initiated in Mode 4 and is not accomplished until after the transition (i.e., at 350° F) into Mode 3. Incorporation of this footnote will allow all narrow range channels to remain in test, with test circuitry installed, through the heating up from Mode 4 to Mode 3.

On the basis of the foregoing, the staff concludes that the addition of footnote ### to Function 9b is acceptable.

### 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

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 (66 FR 64301). 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: K. Mortensen

Date: March 5, 2002

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

**VIRGIL C. SUMMER NUCLEAR STATION**

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