

March 6, 2003

Mr. Stephen A. Byrne
Senior 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 1 - ISSUANCE OF
AMENDMENT RE: DESIGN BASIS RADIOLOGICAL ANALYSES FOR STEAM
GENERATOR TUBE RUPTURE AND MAIN STEAM LINE BREAK ACCIDENTS
(TAC NO. MB4651)

Dear Mr. Byrne:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 162 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 March 20, 2002.

This amendment will revise TS Section 1.10, "Definitions, Dose Equivalent I-131," in accordance with Westinghouse Nuclear Safety Advisory Letter (NSAL)-00-004, "Nonconservatisms in Iodine Spiking Calculations" and NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 2, April 2001.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* notice. This completes the staff's efforts on TAC No. MB4651.

Sincerely,

/RA/

Karen R. 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. 162 to NPF-12
2. Safety Evaluation

cc w/enclosures: See next page

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Distribution: See next page

** No legal objection

* SE dtd 1/3/02

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AMENDMENT NO. 162 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER,
UNIT NO. 1

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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. 162
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 March 20, 2002, 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. 162, 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/

John A. Nakoski, 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 6, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 162

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

1-2

Insert Page

1-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 162 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 March 20, 2002, South Carolina Electric and Gas Company (the licensee) requested an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TSs). The proposed amendment would change TS Section 1.10, "Definitions, Dose Equivalent I-131," to allow the use of the thyroid dose conversion factors listed in the International Commission on Radiological Protection Publication No. 30 (ICRP-30), "Limits for Intakes of Radionuclides by Workers," 1979, in determining the iodine-131 dose equivalent reactor coolant activity in TS Section 3/4.4.8 and in calculating the radiological consequences from postulated design basis accidents (DBAs).

The licensee stated that the proposed amendment was initiated to address Westinghouse Nuclear Advisory Letter (NSAL)-00-004, "Non-conservatism in Iodine Spiking Calculations," dated March 7, 2000. The Westinghouse letter identified non-conservative assumptions used in calculating the equilibrium iodine release rate and the accident-initiated iodine appearance rate for certain DBAs. The affected DBAs for VCSNS are the steam generator tube rupture (SGTR) accident, the main steam line break (MSLB) accident, and Chemical and Volume Control System (CVCS) line rupture.

2.0 REGULATORY EVALUATION

The proposed change will revise the iodine dose conversion factors from the values in Technical Information Document (TID) 14844, "Calculation of Distance Factors for Power and Test Reactor Sites," 1962, to those in ICRP-30. This change is consistent with Section 1.1, "Definition" of NUREG-1431, Revision 2, "Standard Technical Specifications - Westinghouse Plants," and the staff technical position stated in Regulatory Issue Summary (RIS) 01-019, "Deficiencies in the Documentation of Design Basis Radiological Analyses Submitted in Conjunction with License Amendment Requests."

3.0 TECHNICAL EVALUATION

The NUREG-1431 states that the iodine dose conversion factors shall be based on either TID-14844 or ICRP-30. In its RIS 01-019, the staff endorsed the use of iodine dose conversion factors listed in ICRP-30, which are the same as those tabulated in Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."

Westinghouse NSAL identified the following five areas of potential non-conservatisms in calculating the iodine appearance rates:

- Letdown flow rate
- Letdown demineralizer iodine removal efficiency
- Primary coolant leakage
- Letdown flow uncertainty
- Primary coolant mass

Of these five, the letdown rate and the primary coolant mass are not affected at VCSNP as they are properly addressed in the original analyses. The following three remaining parameters are corrected in response to the Westinghouse letter:

- Letdown demineralizer iodine removal efficiency to complete removal
- Primary coolant leakage to 11 gallons per minute (gpm) from zero
- Letdown flow uncertainty to 12 gpm from zero

The licensee concluded in its submittal that the above corrections in the iodine release rate assumptions in conjunction with the use of the iodine dose conversion factors listed in ICRP-30 resulted in lower offsite dose consequences than those currently presented in the Updated Final Safety Analysis Report (UFSAR) for the SGTR, MSLB, and CVCS line rupture accidents. To verify the licensee's conclusion, the staff performed its confirmatory radiological consequence analyses. The staff's analyses also resulted in lower offsite dose consequences than those currently presented in the V.C. Summer UFSAR. The proposed changes do not involve any physical plant changes or changes in operation of the plant.

4.0 CONCLUSION

Based on the above evaluation, the staff concludes that the proposed use of the iodine dose conversion factors in ICRP-30 and the corrections made for nonconservatisms identified in the Westinghouse letter for affected DBAs in the VCSNS UFSAR are acceptable.

5.0 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.

6.0 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. 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 (67 FR 53991). 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.

7.0 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: Jay Lee

Date: March 6, 2003

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

VIRGIL C. SUMMER NUCLEAR

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