

August 11, 1995

Mr. Gary J. Taylor  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
Post Office Box 88  
Jenkinsville, South Carolina 29065

SUBJECT: ISSUANCE OF AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE  
NO. NPF-12 REGARDING LOW TEMPERATURE OVERPRESSURE PROTECTION -  
VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. M89173)

Dear Mr. Taylor:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 125 to Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The amendment changes the Technical Specifications in response to your application dated March 11, 1994.

The proposed amendment would decrease the allowable time for operation with one inoperable residual heat removal (RHR) relief valve from 7 days to 72 hours. This amendment request has been submitted in response to Generic Issue 94 as discussed in Generic Letter 90-06 (GL 90-06). In a related matter, you submitted a June 30, 1995 letter regarding Generic Issue 70 (GI-70). GI-70 was also discussed in GL 90-06. Your response to GI-70 will be addressed in a separate safety evaluation.

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 Nos. M77459 and M89173.

Sincerely,

ORIGINAL SIGNED BY:

Stephen Dembek, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-395

- Enclosures: 1. Amendment No. 125 to NPF-12
- 2. Safety Evaluation

cc w/enclosures: See next page

DOCUMENT NAME: G:\SUMMER\SUM89173.AMD

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Mr. Gary J. Taylor  
South Carolina Electric & Gas Company

VIRGIL C. SUMMER NUCLEAR STATION

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AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE NO. NPF-12 - SUMMER, UNIT NO. 1

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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. 125  
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 11, 1994, 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. 125 , 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



Frederick J. Hebdon, 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: August 11, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 125  
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

3/4 4-34

B3/4 5-2

Insert Pages

3/4 4-34

B3/4 5-2

REACTOR COOLANT SYSTEM

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

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- 3/4.9.3 At least one of the following overpressure protection systems shall be OPERABLE:
- a. Two RHR relief valves with:
    1. A lift setting of less than or equal to 450 psig, and
    2. The associated RHR relief valve isolation valves open; or
  - b. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 2.7 square inches.

APPLICABILITY:

MODE 4 when the temperature of any RCS cold leg is less than or equal to 300°F, MODE 5, and MODE 6 with the reactor vessel head on.

ACTION:

- a. With one RHR relief valve inoperable, restore the inoperable valve to OPERABLE status within 72 hours or depressurize and vent the RCS through a greater than or equal to 2.7 square inch vent within the next 8 hours.
- b. With both RHR relief valves inoperable, within 8 hours either:
  1. Restore at least one RHR relief valve to OPERABLE status, or
  2. Depressurize and vent the RCS through a greater than or equal to 2.7 square inch vent.
- c. In the event an RHR relief valve or RCS vent is used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the RHR relief valves or vent on the transient and any corrective action necessary to prevent recurrence.
- d. The provisions of Specification 3.0.4 are not applicable.

## EMERGENCY CORE COOLING SYSTEMS

### BASES

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#### ECCS SUBSYSTEMS (Continued)

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE charging pump to be inoperable below 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR suction relief valve.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

#### 3/4.5.4 REFUELING WATER STORAGE TANK

The OPERABILITY of the Refueling Water Storage Tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of either a LOCA, a steamline break or inadvertent RCS depressurization. The limits of RWST minimum volume and boron concentration ensure 1) that sufficient water is available within containment to permit recirculation cooling flow to the core, 2) that the reactor will remain subcritical in the cold condition (68 to 212 degrees-F) following a small break LOCA assuming complete mixing of the RWST, RCS, Spray Additive Tank (SAT), containment spray system piping and ECCS water volumes with all control rods inserted except the most reactive control rod assembly (ARI-1), 3) that the reactor will remain subcritical in the cold condition following a large break LOCA (break flow area  $\geq 3.0$  sq. ft.) assuming complete mixing of the RWST, RCS, ECCS water and other sources of water that may eventually reside in the sump post-LOCA with all control rods assumed to be out (ARO), 4) long term subcriticality following a steamline break assuming ARI-1 and preclude fuel failure.

The maximum allowable value for the RWST boron concentration forms the basis for determining the time (Post-LOCA) at which operator action is required to switch over the ECCS to hot leg recirculation in order to avoid precipitation of the soluble boron.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 125 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 March 11, 1994, South Carolina Electric & Gas Company (the licensee), submitted a request for changes to the Virgil C. Summer Nuclear Station, Unit No. 1, (Summer Station) Technical Specifications (TS). The proposed amendment would decrease the allowable time for operation with one inoperable residual heat removal (RHR) relief valve from 7 days to 72 hours. This amendment request has been submitted in response to Generic Issue 94 (GI-94) as discussed in Generic Letter 90-06 (GL 90-06), "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection for Light-Water Reactors,' Pursuant to 10 CFR 50.54(f)."

2.0 EVALUATION

Generic Issue 94 (GI-94) dealt with concerns over the adequacy of low temperature overpressure protection (LTOP) for pressurized water reactors. In its discussion of GI-94 in GL 90-06, the staff recommended that licensees adopt a 24-hour allowable outage time (AOT) for reactor operation with one RHR relief valve inoperable. This is consistent with AOTs for other systems and components with similar mitigation functions.

The licensee evaluated the guidance of GL 90-06 and proposed that a 72-hour allowable outage time would be more appropriate for a single RHR relief valve since system design provides for two trains, each with 100 percent relief capability.

The NRC staff has reviewed the licensee's proposed change and finds that it meets the intent of GL 90-06 in dealing with GI-94 to improve the reliability of the LTOP system. Therefore, the staff finds the proposed change acceptable. This completes the staff's review of GI-94 for Summer Station.

Generic Letter 90-06 also dealt with the issue of power operated relief valve reliability (Generic Issue 70 (GI-70)). In a June 30, 1995 letter, the licensee requested a license amendment to address GI-70. The staff's

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ENCLOSURE 2

evaluation of the licensee's request will be addressed in a separate safety evaluation.

### 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. 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 (59 FR 32236). 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: S. Dembek

Date: August 11, 1995