

July 7, 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: MINIMUM CONDENSATE STORAGE TANK CONTAINED
VOLUME (TAC NO. MA5488)

Dear Mr. Taylor:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 145 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 May 17, 1999.

This amendment revises the required minimum contained volume of the condensate storage tank from 172,700 gallons of water to 179,850 gallons of water.

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. M5488.

Sincerely,

/RA by L. Mark Padovan Acting for/

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. to NPF-12
2. Safety Evaluation

cc w/encls: See next page

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AMENDMENT NO. 145 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

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Karen Cotton, Project Manager, Section 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. 145
License No. NPF-12

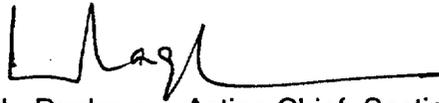
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by South Carolina Electric & Gas Company (the licensee), dated May 17, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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. 145, 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



L. Raghavan, 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: July 7, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 145

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 7-6

Insert Page

3/4 7-6

PLANT SYSTEMS

CONDENSATE STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.7.1.3 The condensate storage tank (CST) shall be OPERABLE with a contained volume of at least 179,850 gallons of water.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the condensate storage tank inoperable, within 4 hours either:

- a. Restore the CST to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours, or
- b. Demonstrate the OPERABILITY of the service water system as a backup supply to the emergency feedwater pumps and restore the condensate storage tank to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.3.1 The condensate storage tank shall be demonstrated OPERABLE at least once per 12 hours by verifying the contained water volume is within its limits when the tank is the supply source for the emergency feedwater pumps.

4.7.1.3.2 The service water system shall be demonstrated OPERABLE at least once per 12 hours by verifying service water system pressure whenever the service water system is the supply source for the emergency feedwater pumps.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 145 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 May 17, 1999, 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 revise the required minimum contained volume of the condensate storage tank (CST) from 172,700 gallons of water to 179,850 gallons of water. The additional water is required due to uprating the plant, installing larger replacement steam generators (SGs), and recalculating the amount of useable CST water.

2.0 BACKGROUND

By letter dated May 17, 1999, SCE&G requested an amendment to the VCSNS TS. This request proposes a change to TS 3.7.1.3 "Condensate Storage Tank Limiting Condition for Operation." The proposed change will revise the required minimum contained volume of the CST from 172,700 gallons of water to 179,850 gallons of water. The CST provides a safety-grade source of water to the SGs for removing decay and sensible heat from the reactor coolant system (RCS). The CST provides a passive flow of water, by gravity, to the emergency feedwater (EFW) system. The steam produced is released to the atmosphere by the main steam safety valves or the atmospheric dump valves. The EFW pumps operate with a continuous recirculation to the CST. When the main steam isolation valves are open, the preferred means of heat removal is to discharge steam to the condenser by the non-safety-grade path of the steam bypass valves. The condensed steam is returned to the CST by the condensate transfer pump. This has the advantage of conserving condensate while minimizing releases to the environment.

3.0 EVALUATION

The current TS minimum CST volume of 172,700 gallons includes 155,000 gallons dedicated to the EFW system. The 155,000 gallons was needed to maintain HOT STANDBY for 2 hours followed by a 4-hour cooldown period to 350°F. The licensee later determined that the 155,000 gallon inventory was large enough to also maintain HOT STANDBY for 11 hours.

The licensee reanalyzed minimum CST level to account for the uprated power rating as well as the replacement SGs. The reanalysis determined that 158,570 gallons were required to be dedicated to the EFW system to maintain HOT STANDBY for 11 hours. Since the replacement SGs were larger than those currently installed, they had different SG level setpoints. This impacted the analysis in two ways. The first is that there is additional stored energy in both the thick metal mass and in the secondary coolant water mass. The second impact is that additional condensate storage is required to refill the larger SG to the programmed no-load level from the low-low SG setpoint.

The original sizing calculation in 1972 used conservative numbers for the SG low-low level and refill volume. This resulted in a conservatively high volume requirement, so there is sufficient reserve volume in the CST design to accept the replacement SGs. Based on the limiting operating parameters under consideration for the uprated conditions, the results of the licensee's reanalysis show that the required CST volume is 152,550 gallons for 2 hours at HOT STANDBY followed by a 4-hour cooldown time to residual heat removal operation. However, the required volume to maintain HOT STANDBY for an 11-hour period was determined to be 158,570 gallons for the uprated conditions with the replacement SGs. The analysis for the replacement SGs assumed a trip from 95% of the SG low-low level in order to be consistent with current accident analysis assumptions.

A minimum volume of water in the CST is specified to ensure sufficient water is available to the EFW system to maintain either the RCS of HOT STANDBY for 2 hours followed by a 4-hour cooldown period to 350°F or the RCS at HOT STANDBY for 11 hours, whichever is greater with steam discharge to the atmosphere concurrent with total loss of offsite power. The contained water volume limit includes an allowance for water that is not useable by the EFW system because of the location of the tank discharge line or other physical characteristics.

The volume of CST water required by the current Limiting Condition for Operation 3.7.1.3 is 172,700 gallons. This includes 155,000 gallons dedicated to the EFW system. SCE&G proposes to increase the required HOT STANDBY for an 11-hour period from 155,000 to 158,570 gallons to account for uprated plant conditions with the replacement SGs. The maximum CST inventory that is available to the EFW system, based on nozzle locations, is 160,054 gallons, while the volume of water in the CST that is unuseable to the EFW system is 19,794. This proposed change to the TS changes the required volume of water in the CST to a total of 179,850 gallons. The sum of 160,054 gallons available plus 19,794 gallons unusable is 179,850 gallons (rounded up).

The staff has reviewed these proposed changes along with the assumptions and calculations used in justifying the changes. This change does not reduce any safety margin associated with the CST inventory available to the EFW. The sum of the maximum volume available to the EFW system and the volume that is unuseable to the EFW system is conservative.

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. 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 (64 FR 32290). 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 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: Karen Cotton

Date: July 7, 2000

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

VIRGIL C. SUMMER NUCLEAR STATION

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