

September 17, 1997

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.138 TO FACILITY OPERATING
LICENSE NO. NPF-12 REGARDING TECHNICAL SPECIFICATION
1.9 "CORE ALTERATION" DEFINITION - VIRGIL C. SUMMER
NUCLEAR STATION, UNIT 1 (TAC NO. M98285)

Dear Mr. Taylor:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 138 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 26, 1997.

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. M98285.

Sincerely,

Original signed by:

Allen R. Johnson, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No 50-395

DF01/1

Enclosures:

- 1. Amendment No.138 to NPF-12
- 2. Safety Evaluation

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cc w/enclosures: See next page

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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. 138
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 26, 1997, 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. 138, 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



Gordon E. Edison, Acting 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: September 17, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 138

TO FACILITY OPERATING LICENSE NO. NPF-12

DOCKET NO. 50-395

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revision is indicated by a marginal line.

Remove Page

1-2

Insert Page

1-2

DEFINITIONS

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 - 1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 - 2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.4,
- b. All equipment hatches are closed and sealed,
- c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,
- d. The containment leakage rates are within the limits of Specification 6.8.4.g, and
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT

1.9a The CORE OPERATING LIMITS REPORT (COLR) is the unit specific document that provides core operating limits for the current operating reload cycle. The cycle specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these operating limits is addressed in individual specifications.

DOSE EQUIVALENT I-131

1.10 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 138 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 26, 1997, 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 change the Technical Specifications (TS) definition of Core Alteration. At present, the TS definition includes "movement or manipulation of any component within the reactor vessel" as Core Alterations. The licensee proposes to revise the current definition such that a Core Alteration would be limited to movement of any fuel, source, or reactivity control component.

2.0 BACKGROUND

The VCSNS TS define Core Alteration as follows: "Core Alteration shall be the movement or manipulation of any component within the reactor vessel with the vessel head removed and fuel in the vessel." The VCSNS TS require and will continue to require that containment integrity be established during Core Alterations. A literal interpretation of the TS definition results in containment integrity being required when conducting activities ranging from removal of the reactor vessel upper internals to placing lights or a TV camera in the reactor vessel. A literal interpretation thus results in more complex and correspondingly longer outages. To eliminate this problem without impacting on safety, the licensee proposes to adopt the definition of Core Alteration from NUREG-1431, "Standard Technical Specifications Westinghouse Plants." This definition states that "Core Alteration shall be the movement of any fuel, sources, or reactivity control components with the vessel head removed and fuel in the vessel." The proposed definition only addresses activities that impact on reactivity, and excludes movement of any other components in the reactor vessel. The staff has reviewed the licensee's proposal. The results of the staff review are discussed below.

3.0 EVALUATION

As discussed above, the focus of this TS change is to reduce the requirement for containment integrity by reducing the applicability of Core Alterations. The purpose of requiring containment integrity is to preclude the release of radioactivity into the environment. Such releases could be the result of 1) accidents such as dropping an irradiated fuel assembly (fuel handling accident) or dropping heavy loads on irradiated fuel in the reactor vessel, and 2) reactivity excursions within the reactor vessel. This evaluation addresses the

effect of the proposed definition change with respect to potential accidents. The proposed new definition does not impact on TS requirements associated with potential reactivity excursions.

At VCSNS, the heavy loads of concern are the reactor vessel upper internals. The current TS definition of Core Alteration includes handling of the upper internals. The proposed new definition, however, would not be applicable to this activity. In turn, the requirement to establish containment integrity during movement of the upper internals would also not be applicable. Heavy load handling at VCSNS is conducted in accordance with the guidance of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." By GL 85-11, dated 6/28/85, the staff concluded that implementation of the guidelines of NUREG-0612 provided sufficient protection such that the risk associated with heavy load drops is acceptably small. Based on this, the staff concludes that the proposed change to the definition of Core Alteration is acceptable with respect to moving the reactor vessel upper internals.

The proposed new definition would also not be applicable to movement of any other components in the reactor vessel with fuel in the vessel. At VCSNS, all movement of components within the reactor vessel that is not associated with the vessel internals or with reactivity control components is bounded by the fuel handling accident. At VCSNS, the fuel handling accident assumes an irradiated fuel assembly is dropped into the reactor core. The analysis shows that all damage is confined to the fuel assembly that was dropped. There is no damage to irradiated fuel in the core. All components that may be moved within the reactor vessel at VCSNS (other than as described above) weigh less than a fuel assembly (e.g., small tools, TV camera, lights, etc.). Therefore, dropping one of these components would not result in fuel damage or the possibility of a release of radioactivity. The staff, therefore, concludes that movement of such components without establishing containment integrity is acceptable.

The existing definition of Core Alteration addresses "movement or manipulation" of components. The proposed definition deletes the phrase "or manipulation." The terms "movement" and "manipulation" have the same meaning with respect to the definition of Core Alteration. Deleting the latter phrase removes one of two redundant terms along with any potential confusion, but there is no change in TS applicability and no impact on safety. The staff, therefore, concludes that this proposed change is also acceptable.

The current TS definition of Core Alteration also includes the following: "Suspension of Core Alterations shall not preclude completion of movement of a component to a safe conservative position." This statement is included in the proposed definition except that the word "conservative" is deleted. It is the staff's view that "safe" and "conservative" have the same meaning in the context of this definition, and deleting "conservative" will have no safety impact. Based on its review of the licensee's submittal and on information provided by the licensee, the staff concludes that changing the VCSNS current definition of Core Alteration to reflect the definition in NUREG-1431 will not have an adverse impact on safety and is, therefore, acceptable.

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 (62 FR 27800). 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 Contributors: Edward Tomlinson
A. Attard

Date: September 17, 1997