January 27, 1999

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. 141 TO FACILITY OPERATING LICENSE NO. NPF-12 REGARDING REMOVING SNUBBER TESTING "DURING SHUTDOWN" TECHNICAL SPECIFICATIONS (TS) REQUIREMENTS, VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. MA3502)

Dear Mr. Taylor:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 141 to Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The amendment changes TS Surveillance Requirement (SR) 4.7.7.e to remove the "during shutdown" condition from the specified test interval in response to your July 1, 1998, request. The amendment also makes administrative changes to SR 4.7.7.g, and BASES 3/4.2.2 and 3/4.2.3 to correct typographical errors.

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. MA3502.

Sincerely,
Original signed by:
L. Mark Padovan, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosures: 1. Amendment No. 141 to NPF-12
2. Safety Evaluation

cc w/enclosures: See next page

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

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2. Safety Evaluation

cc w/enclosures: See next page

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

cc:

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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. 141
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 July 1, 1998, 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.

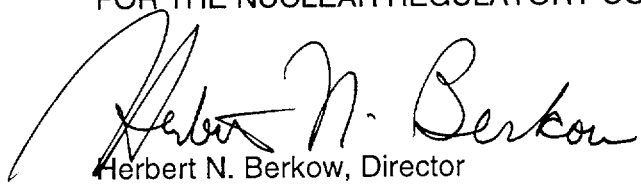
2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-12 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 141, 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 27, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 141

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 areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 7-17	3/4 7-17
3/4 7-19	3/4 7-19
B3/4 2-3	B3/4 2-3

(i) manually induced snubber movement; (ii) evaluation of in-place snubber piston setting; or (iii) stroking the mechanical snubber through its full range of travel.

d. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubbers to the component and to the snubber anchorage are functional. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that (i) the cause for being classified as unacceptable is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (ii) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.7.f. When a fluid port of a hydraulic snubber is found to be uncovered the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing unless the test is started with the piston in the as found setting, extending the piston rod in the tension mode direction. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable and may be reclassified as acceptable for determining the next inspection interval provided that criterion (i) and (ii) above are met. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements of 3.7.7 shall be met.

e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter, a representative sample of either: (1) At least 10% of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.7.f , an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested, or (2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7-1, "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.7.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7-1. If at any time the point plotted falls in the "Accept" region, testing of that type of snubber may be terminated.

g. Functional Test Failu e Analysis (Continued)

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in Specification 4.7.7.e for snubbers not meeting the functional test acceptance criteria.

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. These snubbers shall have met the acceptance criteria subsequent to their most recent service, and the functional test must have been performed within 12 months before being installed in the unit.

i. Snubber Seal Replacement Program

The seal service life of hydraulic snubbers shall be monitored to ensure that the seals service life is not exceeded between surveillance inspections. The maximum expected service life for the various seals, seal materials, and applications shall be determined and established based on engineering information and the seals shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The seal replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.2.

3/4.2.2 and 3/4.2.3 HEAT FLUX HOT CHANNEL FACTOR and RCS FLOWRATE AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

The limits on heat flux hot channel factor, RCS flowrate, and nuclear enthalpy rise hot channel factor ensure that 1) the design limits on peak local power density and minimum DNBR are not exceeded and 2) in the event of a LOCA the peak fuel clad temperature will not exceed the 2200°F ECCS acceptance criteria limit.

Each of these is measurable but will normally only be determined periodically as specified in Specifications 4.2.2 and 4.2.3. This periodic surveillance is sufficient to insure that the limits are maintained provided:

a. Control rods in a single group move together with no individual rod insertion differing by more than ± 12 steps, indicated, from the group demand position.

b. Control rod groups are sequenced with overlapping groups as described in Specification 3.1.3.6.

c. The control rod insertion limits of Specifications 3.1.3.5 and 3.1.3.6 are maintained.

d. The axial power distribution, expressed in terms of AXIAL FLUX DIFFERENCE, is maintained within the limits.

$F^{N}_{\Delta H}$ will be maintained within its limits provided conditions a. through d. above are maintained. As noted on the RCS Total Flow Rate Versus R figure in the CORE OPERATING LIMITS REPORT (COLR), RCS flow rate and power may be "traded off" against one another (i.e., a low measured RCS flow rate is acceptable if core power is also low) to ensure that the calculated DNBR will not be below the design DNBR value. The relaxation of $F^{N}_{\Delta H}$ as a function of THERMAL POWER allows changes in the radial power shape for all permissible rod insertion limits.

R, as calculated in 3.2.3 and used in the RCS Total Flow Rate Versus R figure in the COLR, accounts for $F^{N}_{\Delta H}$ less than or equal to the $F^{RTP}_{\Delta H}$ limit specified in the COLR. This value is used in the various accident analyses where $F^{N}_{\Delta H}$ influences parameters other than DNBR, e.g., peak clad temperature and thus is the maximum "as measured" value allowed.

Margin is maintained between the safety analysis limit DNBR and the design limit DNBR. This margin is more than sufficient to offset any rod bow penalty and transition core penalty. The remaining margin is available for plant design flexibility.

When a F_Q measurement is taken, an allowance for both experimental error and manufacturing tolerance must be made. An allowance of 5% is appropriate for a full core map taken with the incore detector flux mapping system and a 3% allowance is appropriate for manufacturing tolerance.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 141 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 July 1, 1998, South Carolina Electric & Gas Company (SCE&G) requested NRC approval of changes to Virgil C. Summer Nuclear Station (VCSNS) Technical Specification (TS) Surveillance Requirement (SR) 4.7.7.e. The proposed amendment would revise the TS to remove the "during shutdown" condition from the specified test interval. Removing the "during shutdown" wording from the TS would allow VCSNS to perform on-line snubber testing, and would make the up-to-25 percent allowable interval extension in SR 4.0.2 apply to the specified snubber surveillance interval. The proposed amendment would also make administrative changes to SR 4.7.7.g, and BASES 3/4.2.2 and 3/4.2.3 to correct typographical errors.

2.0 EVALUATION

2.1 Snubber Functional Testing

Currently, VCSNS TS SR 4.7.7.e requires SCE&G to perform snubber functional testing at least once per 18 months "during shutdown." This TS amendment proposes to remove the "during shutdown" wording from the TS to allow SCE&G to perform on-line snubber testing.

The staff finds that this change conforms with Generic Letter (GL) 91-04 "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle." In GL 91-04, the NRC concluded that the TS need not restrict licensees to performing surveillances only during shutdown conditions. However, the NRC indicated that the licensee should postpone the surveillance until the plant is shut down for refueling (or in a condition or mode consistent with safe conduct of that surveillance), if performing a surveillance during plant operation would adversely affect safety. The staff believes that deleting the words "during shutdown" has no safety impact as long as the licensee conducts surveillances in any mode or condition without impacting plant safety. SCE&G installs, removes, repairs, and functionally tests VCSNS snubbers using approved procedures. SCE&G's Engineering group evaluates the removal of snubbers for maintenance or testing prior to unpinning a snubber. The engineering evaluations

typically consider system availability, plant configuration, and current plant operating mode. SCE&G indicated that surveillance practices at VCSNS usually permit removing only one snubber on a piping train at a time. This practice prevents damage to a piping system should an event occur while a system snubber is disconnected.

The American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), Section ISTD-5240, Test Frequency, states that "tests of snubbers from a facility shall be performed every fuel cycle. Snubber testing may begin no earlier than 60 days before a scheduled refueling outage."

The staff, therefore, concludes that deleting the phrase "during shutdown" from SR 4.7.7.e is acceptable. The SR 4.0.2 maximum allowable surveillance interval extension of up to 25 percent will now apply to the specified snubber surveillance interval.

2.2 Administrative Changes

SCE&G proposes administrative changes to SR 4.7.7.g and to BASES 3/4.2.2 and 3/4.2.3 to correct typographical errors. SCE&G proposes changes to the third paragraph of SR 4.7.7.g to correctly refer to 4.7.7.e instead of 4.7.6.e. SR 4.7.6.e incorrectly refers to the control room normal and emergency air handling system. SR 4.7.7.e addresses snubber functional testing.

SCE&G also proposes to modify the second paragraph in BASES 3/4.2.2 and 3/4.2.3 to change individual rod insertion differences from "± 13 steps" to "± 12 steps." These are administrative corrections to reflect the proper rod steps Westinghouse used in the original design analysis. This also makes the BASES 3/4.2.2 and 3/4.2.3 consistent with Movable Control Assemblies Group Height Limiting Condition for Operations (LCO) 3.1.3.1 and corresponding Action Statements b. and d. The LCO and the Action Statements indicate ± 12 steps. Accordingly, the staff concludes that the proposed administrative TS changes are 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 (63 FR 53955). 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: M. Padovan

Date: January 27, 1999