SCE&G SM
A SCANA COMPANY

April 6, 2000
RC-00-0205

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: K. R. Cotton

Gentlemen:

Stephen A. Byrne
Vice President
Nuclear Operations
803.345.4622

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
TECHNICAL SPECIFICATION CHANGE REQUEST
TSP 99-0281
REVISION OF VCSNS TECHNICAL SPECIFICATION
SURVEILLANCE REQUIREMENT 4.8.1.1.i.2

South Carolina Electric and Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority, hereby requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) in accordance with 10CFR50.90. This proposed amendment will revise the surveillance specified by TS 4.8.1.1.2.i.2 to perform a pressure test on ASME Code portions of the diesel fuel oil system.

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TS 4.8.1.1.2 requires that *Each EDG shall be demonstrated OPERABLE*:

i. At least once per 10 years by:

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III subsection ND of the ASME Code at a test pressure equal to 110 percent of the system design pressure.

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Other than the diesel fuel oil system, all other Code Class systems at VCSNS are pressure tested in accordance with ASME Section XI per TS 4.0.5. Regulatory Guide 1.147, Revision 12, states that Code Case N-498-1 is acceptable for utilization by licensees. This Code Case substitutes a pressure test at normal operating pressure in lieu of a hydrostatic pressure test performed at elevated pressure.

This Amendment request seeks to remove the prescriptive testing requirements of TS 4.8.1.1.2.i.2. The system pressure testing of the diesel fuel oil system would then be performed in accordance with ASME Code, Section XI per TS 4.0.5 incorporating the surveillance methodology allowed by Code Case N-498-1.

No change to the Bases section is required

The amendment request is contained in the following documents:

Attachment I	Explanation of Changes Summary Marked-up Technical Specification Pages Revised Technical Specification Pages
Attachment II	Safety Evaluation
Attachment III	No Significant Hazards Determination
Attachment IV	Environmental Impact Determination

This proposed TS amendment request has been reviewed by both the Plant Safety Review Committee and the Nuclear Safety Review Committee.

SCE&G requests NRC review and approval of this change to the VCSNS TS six months from the date of this letter. This will allow necessary updates to the Inservice Testing program at VCSNS to facilitate the ASME requirements for the diesel fuel oil system, including Code Case N-498-1 prior to our twelfth refueling outage (RF12) currently scheduled for October 2000.

I declare that these statements and matters set forth herein are true and correct to the best of my knowledge, information and belief.

Should you have questions, please call Mr. Jim Turkett at (803) 345-4047.

Very truly yours,

Stephen A. Byrne

JT/SAB

Attachment(s): 4

c: J. L. Skolds
J. J. Galan (w/o Attachment)
R. J. White
L. A. Reyes
N. M. Smith
NRC Resident Inspector
P. Ledbetter
J. B. Knotts, Jr.
T. P. O'Kelley
RTS (TSP 99-0281)
File (813.20)
DMS (RC-00-0205)

STATE OF SOUTH CAROLINA :
: **TO WIT** :
COUNTY OF FAIRFIELD :

I hereby certify that on the 6th day of April 2000, before me, the subscriber, a Notary Public of the State of South Carolina personally appeared Stephen A. Byrne, being duly sworn, and states that he is Vice President, Nuclear Operations of the South Carolina Electric & Gas Company, a corporation of the State of South Carolina, that he provides the foregoing response for the purposes therein set forth, that the statements made are true and correct to the best of his knowledge, information, and belief, and that he was authorized to provide the response on behalf of said Corporation.

WITNESS my Hand and Notarial Seal

Notary Public

My Commission Expires July 13, 2005
Date

SCE&G -- EXPLANATION OF CHANGES

Page	Affected Section	Bar #	Description of Change	Reason for Change
3/4 8-6a	4.8.1.1.2.i.2	1	Modify Surveillance Requirement to reference Section XI per TS 4.0.5 for pressure testing.	To allow the ASME Code portions of the diesel fuel oil system to be pressure tested in accordance with TS 4.0.5 and utilize the Accepted Code Case N-498-1.

SURVEILLANCE REQUIREMENTS (Continued)

within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer, and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.

h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 504 rpm in less than or equal to 10 seconds.

i. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution or its equivalent, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III subsection ND of the ASME Code ~~at a test pressure equal to 110 percent of the system design pressure.~~ in accordance with Specification 4.0.5

SURVEILLANCE REQUIREMENTS (Continued)

within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer, and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 7200 ± 720 volts and 60 ± 1.2 Hz.

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i. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution or its equivalent, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III subsection ND of the ASME Code in accordance with Specification 4.0.5.

SAFETY EVALUATION
FOR REVISING SPECIFICATION
4.8.1.1.2.i.2
OF THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Description of Amendment Request

South Carolina Electric & Gas Company (SCE&G) proposes to revise the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) Surveillance Requirement 4.8.1.1.2.i.2.

The proposed TS change request (TSCR) seeks to remove the prescriptive testing requirements of TS 4.8.1.1.2.i.2 to allow the ASME Code Class 3 portions of the diesel fuel oil system to be pressure tested in accordance with Section XI of the ASME Boiler and Pressure Vessel Code as required by TS 4.0.5. This will permit the use of Code Case N-498-1 as accepted by Regulatory Guide 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity.

This Amendment request is based on experience gained from previous inservice inspections and the acknowledgement of the NRC, industry and ASME that hydrostatic testing of Code Class 1, 2, and 3 systems is not intended to be a test of structural integrity but, rather, an enhanced leakage test. Hence, Code Case N-498-1 was developed and approved by the ASME and was accepted by the NRC through publication of Regulatory Guide 1.147, Revision 12, and as such should be acceptable for the Code portions of the diesel fuel oil system and therefore provides an acceptable level of quality and safety.

The recent Rule change to 10CFR50.55a (64FR51370, dated September 22, 1999) approves the 1995 Edition (including 1996 Addenda) of ASME Code, Section XI that has removed the 10 year hydrostatic pressure test.

Additionally, NUREG-1431, *Standard Technical Specifications, Westinghouse Plants,* Revision 1, April 1995, does not prescribe a hydrostatic test as part of the 10 year surveillance requirements for the Diesel Fuel Oil System.

Safety Evaluation

The existing TS 4.8.1.1.2.i.2 was developed from Regulatory Guide 1.137, Revision 1, 1979. SCE&G addressed this regulatory guide in the VCSNS FSAR, Appendix 3A, with the position that inspection and testing would be in accordance with ASME Code, Section XI. Currently the 1989 Edition of the ASME Code is applicable to VCSNS. This Edition requires that a hydrostatic test be performed on all Class 1, 2 and 3 systems once each 10-year interval of the inservice inspection plan. Even at the higher hydrostatic test pressures, the contribution of the pressure component to the overall design loads is relatively small. Based on this, the ASME, industry, and the NRC have concluded that the hydrostatic test is not intended to be a test of structural integrity, but rather, an enhanced leakage test. A paper by S. H. Bush and R. R. Maccary, *"Development of In-Service Inspection Safety Philosophy for U.S.A. Nuclear Power Plants," ASME*, 1971, indicated that this was the original intent. Thus the value of hydrostatic testing in determining structural integrity is negligible.

The premise that leaks would be discovered when hydrostatic test pressures would cause a pre-existing flaw to propagate through-wall resulting in leakage has not been observed in industry experience. Instead, the industry experience shows that the majority of all leaks discovered were leaks that originated at normal operating pressures. Therefore, compared to a hydrostatic test, a normal pressure leakage test is equally effective for discovering through-wall flaws.

In general, licensees incur the cost of considerable time, potential radiation exposure and dollar resources carrying out hydrostatic test requirements. A significant effort may be necessary, depending on the system or plant configuration, system Code Class and other factors. It is often necessary to temporarily remove or disable Code safety and/or relief valves, placing the system in off normal configurations, to meet test pressure requirements. Therefore, the safety assurance sought for by a slight increase in system pressure during a hydrostatic test is offset by the potential hazards of having to gag or remove Code safety and/or relief valves, placing the system in an off-normal state, erecting temporary supports in certain systems (e.g., steam lines), possible extension of refueling outages and resource requirements to set up testing equipment and gages.

The operating pressure for the VCSNS Diesel Generator Fuel Oil System is well below the system design pressure. To perform the hydrostatic test prescribed by the existing TS requirements at 110% of system design pressure, the system is subjected to improbable conditions that do not provide meaningful data pertaining to the system integrity.

10CFR50.55a currently approves the 1995 Edition (including 1996 Addenda) of ASME Code, Section XI which has totally removed the hydrostatic test requirements as a form of leakage test.

Also, the NRC has accepted Code Case N-498-1 through publication of Regulatory Guide 1.147, Revision 12. This Code Case relieves licensees, committed to earlier Editions of the Code, from the burden of performing hydrostatic testing of Code Class systems. The system pressure testing requirements of the diesel fuel oil system would be performed in accordance with ASME Code, Section XI per TS 4.0.5.

Pursuant to the above information, the proposed TSCR does not involve a significant reduction in the margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION FOR REVISING SPECIFICATION 4.8.1.1.2.i.2 OF THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

South Carolina Electric & Gas Company (SCE&G) proposes to revise the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) Surveillance Requirement 4.8.1.1.2.i.2.

The proposed TS change request (TSCR) seeks to remove the prescriptive testing requirements of TS 4.8.1.1.2.i.2 to allow the ASME Code Class 3 portions of the diesel fuel oil system to be pressure tested in accordance with Section XI of the ASME Boiler and Pressure Vessel Code as required by TS 4.0.5. This will permit the use of Code Case N-498-1 as accepted by Regulatory Guide 1.147, Revision 12, for assessment of the diesel fuel oil system pressure boundary integrity.

This Amendment request is based on experience gained from previous inservice inspections and the acknowledgement of the NRC, industry and ASME that hydrostatic testing of Code Class 1, 2, and 3 systems is not intended to be a test of structural integrity but, rather, an enhanced leakage test. Hence, Code Case N-498-1 was developed and approved by the ASME and was accepted by the NRC through publication of Regulatory Guide 1.147, Revision 12, and as such should be acceptable for the Code portions of the diesel fuel oil system and therefore provides an acceptable level of quality and safety.

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Additionally, NUREG-1431, *Standard Technical Specifications, Westinghouse Plants,* Revision 1, April 1995, does not prescribe a hydrostatic test as part of the 10 year surveillance requirements for the Diesel Fuel Oil System.

Basis for No Significant Hazards Consideration Determination

South Carolina Electric & Gas Company (SCE&G) has evaluated the proposed changes to the VCSNS TS described above against the significant Hazards Criteria of 10CFR50.92 and has determined that the changes do no involve any significant hazard. The following is provided in support of this conclusion.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Industry experience has shown that an inservice leak test conducted at normal operating temperature and pressure is just as effective at finding leakage as a hydrostatic test conducted at 110% of the design pressure. Therefore, there is no increase in the probability or consequences of previously evaluated accidents.

   Also note that the Diesel Generator Fuel Oil System is not specifically modeled in the VCSNS Probability Risk Assessment. It is contained in the diesel generator fail to run event that has a probability of 5.8E-2. If the diesel generator fuel oil system had been modeled, pipe ruptures would not have been included because they would be dominated by failure of other components such as check valves which have failure probabilities several orders of magnitude higher.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed TSCR provides an alternative method of leak detection for the required 10-year inservice inspection. It does not result in an operational condition different from that which has already been considered by TS. Therefore, the change does not create the possibility of a new or different kind of accident or malfunction.

3. Does this change involve a significant reduction in margin of safety?

   The alternative method of leak detection has no impact on the consequences of any analyzed accident and does not significantly change the failure probability of equipment which provides protection for the health and safety of the public. Therefore, there is no significant decrease in the margin of safety.

Pursuant to 10 CFR 50.91, the preceding analyses provides a determination that the proposed Technical Specifications change poses no significant hazard as delineated by 10 CFR 50.92.

**ENVIRONMENTAL IMPACT DETERMINATION
FOR REVISING SPECIFICATION
4.8.1.1.2.i.2
OF THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS**

Environmental Assessment

This proposed Technical Specification change has been evaluated against criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed change meets the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed Technical Specification change meets the criteria for categorical exclusion.

10 CRF 51.22(c)(9): Although the proposed change involves change to requirements with respect to pressure testing for the diesel fuel oil system,

(I) the proposed change involves No Significance Hazards Consideration (refer to No Significance Hazards Evaluation);

(ii) there are no significant changes in the types or significant increase in the amounts of any effluents that may be released offsite since the proposed change does not affect the generation of any radioactive effluents nor does it affect any of the permitted release paths; and

(iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned information and pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement need be prepared in connection with issuance of an amendment to the Technical Specifications incorporating the proposed change.