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Senior Vice President, Nuclear Operations
803.345.4622



August 7, 2001
RC-01-0144

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

Attention: K. R. Cotton

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
TECHNICAL SPECIFICATION CHANGE REQUEST TSP 01-0006
REVISION OF TABLE 3.3-2, REACTOR TRIP SYSTEM
INSTRUMENTATION RESPONSE TIMES

Reference: Westinghouse Nuclear Safety Advisory Letter, NSAL-00-016,
December 4, 2000

South Carolina Electric & 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 add a response time requirement for the Source Range Neutron Flux Reactor Trip since, as identified in the referenced NSAL, it is implicitly credited in the accident analysis for the Uncontrolled Rod Cluster Control Assembly Bank Withdrawal from Subcritical (RWFS) event during Modes 3, 4, and 5.

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 |

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No change to the Bases section is required.

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 by March 1, 2002, in order to implement during refueling outage 13.

There are no other TS changes in process that will affect or be affected by this change request.

There are no significant changes to any FSAR or FPER sections. FSAR Sections 7 and 15 were reviewed. Changes to the Sections will be implemented, as appropriate, upon approval of this request. The FPER was reviewed but was not affected.

A copy of this application and associated attachments is being provided to the designated South Carolina State official in accordance with 10 CFR 50.91.

I certify under penalty of perjury that the foregoing is true and correct.

Should you have questions, please call Mr. Jim Turkett at (803) 345-4047 or Mr. Lou Cartin at (803) 345-4728.

Very truly yours,



Stephen A. Byrne

JT/SAB
Attachment(s): 4

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o Attachments)
R. J. White
L. A. Reyes
W. R. Higgins
NRC Resident Inspector

P. Ledbetter
K. M. Sutton
T. P. O'Kelley
RTS (TSP 01-0006)
File (813.20)
DMS (RC-01-0144)

STATE OF SOUTH CAROLINA :
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COUNTY OF FAIRFIELD :
 :

TO WIT :

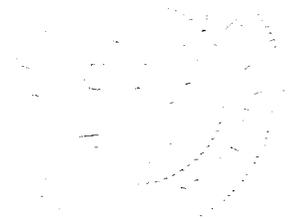
I hereby certify that on the 7th day of AUGUST 2001, before me, the subscriber, a Notary Public of the State of South Carolina personally appeared Stephen A. Byrne, being duly sworn, and states that he is Senior Vice President, Nuclear Operations of the South Carolina Electric & Gas Company, a corporation 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

James W. Turbett, Jr.
Notary Public

My Commission Expires

OCTOBER 12, 2010
Date



Attachment To License Amendment No. XXX
To Facility Operating License No. NPF-12
Docket No. 50-395

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

3/4 3-9

Insert Pages

3/4 3-9

SCE&G -- EXPLANATION OF CHANGES

<u>Page</u>	<u>Affected Section</u>	<u>Bar #</u>	<u>Description of Change</u>	<u>Reason for Change</u>
3/4 3-9	Table 3.3-2	1	Revise functional unit 6 from "N/A" to " ≤ 0.5 seconds (1)".	To periodically validate safety analysis response time assumption for the RWFS event while in Modes 3, 4, and 5.

TABLE 3.3-2REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
1. Manual Reactor Trip	Not Applicable
2. Power Range, Neutron Flux	≤ 0.5 seconds ⁽¹⁾
3. Power Range, Neutron Flux, High Positive Rate	Not Applicable
4. Deleted	
5. Intermediate Range, Neutron Flux	Not Applicable
6. Source Range, Neutron Flux	Not Applicable 20.5 seconds (1)
7. Overtemperature ΔT	≤ 8.5 seconds ⁽¹⁾⁽²⁾
8. Overpower ΔT	≤ 8.5 seconds ⁽¹⁾⁽²⁾
9. Pressurizer Pressure--Low	≤ 2.0 seconds
10. Pressurizer Pressure--High	≤ 2.0 seconds
11. Pressurizer Water Level--High	Not Applicable

- (1) Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input of first electronic component in channel.
- (2) The 8.5 second response time includes a 5.0 second delay for the RTDs mounted in thermowells.

TABLE 3.3-2

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

<u>FUNCTIONAL UNIT</u>	<u>RESPONSE TIME</u>
1. Manual Reactor Trip	Not Applicable
2. Power Range, Neutron Flux	≤ 0.5 seconds ⁽¹⁾
3. Power Range, Neutron Flux, High Positive Rate	Not Applicable
4. Deleted	
5. Intermediate Range, Neutron Flux	Not Applicable
6. Source Range, Neutron Flux	≤ 0.5 seconds ⁽¹⁾
7. Overtemperature ΔT	≤ 8.5 seconds ⁽¹⁾⁽²⁾
8. Overpower ΔT	≤ 8.5 seconds ⁽¹⁾⁽²⁾
9. Pressurizer Pressure--Low	≤ 2.0 seconds
10. Pressurizer Pressure--High	≤ 2.0 seconds
11. Pressurizer Water Level--High	Not Applicable

(1) Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input of first electronic component in channel.

(2) The 8.5 second response time includes a 5.0 second delay for the RTDs mounted in thermowells.

**SAFETY EVALUATION
FOR REVISING SPECIFICATION
TABLE 3.3-2
OF THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS**

Description of Amendment Request

South Carolina Electric & Gas Company (SCE&G) proposes a change to Table 3.3-2 of the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) Surveillance Requirements to include a response time requirement of ≤ 0.5 seconds for the Source Range (SR) Neutron Flux Reactor Trip.

The proposed change results from SCE&G's review of Westinghouse Nuclear Safety Advisory Letter NSAL-00-016. This NSAL notified SCE&G that the SR Neutron Flux Reactor Trip is implicitly credited within the accident analyses for the Uncontrolled Rod Cluster Control Assembly Bank Withdrawal from Subcritical (RWFS) event during Modes 3, 4, and 5.

Safety Evaluation

This event is addressed in Section 15.2.1 of the VCSNS FSAR. The analysis is performed assuming bounding, Mode 2 initial conditions; and, primary protection is provided by the Power Range Neutron Flux-Low Setpoint. Within the VCSNS TS, this primary trip function is required to be operable during Modes 1 and 2 with a time response test requirement of 0.5 seconds consistent with the FSAR analyses. The Source Range (SR) reactor trip function is also discussed in the FSAR as being available to terminate this event; however, it is not explicitly credited in the analyses. Instead, as outlined in NSAL-00-016, it is assumed that a RWFS event occurring in Modes 3, 4, or 5 is bounded by the FSAR analysis performed in Mode 2, based on implicitly crediting the SR reactor trip function. Therefore, although not explicitly analyzed for a RWFS event from Modes 3, 4, or 5, the SR reactor function is implicitly credited as a primary protection function. Currently, the SR reactor trip is required to be operable in Modes 3, 4, or 5 when the Control Rod Drive System is capable of rod withdrawal, but it has no time response test requirement.

Since the Technical Specification currently requires the measurement of response time for each primary trip function, a response time requirement is proposed for the SR neutron flux trip. Consistent with current Technical Specification requirements which exempt the neutron detectors from response time testing, the proposed response corresponds to the time interval following generation of a detector output or input of first electronic component in the channel until loss of stationary gripper coil voltage (i.e., rods free to fall).

As discussed in Section 7.2.1.1.2 of the VCSNS FSAR, the SR neutron flux trip function trips the reactor when 1 of the 2 SR channels exceeds the trip setpoint (i.e., exceeds 10^5 cps). This trip provides protection during reactor startup and plant shutdown. Both channels of the SR trip are required to be operable during Mode 2 below the Intermediate Range Neutron Flux Interlock (P-6) of $\geq 7.5 \times 10^{-6}$ percent power and during Modes 3, 4, or 5 when the reactor trip system breakers are in the closed position and the control rod drive system capable of rod withdrawal. The SR trip function at VCSNS employs Gamma-Metric detectors; the detectors and channel circuitry are classified as 1E and Seismic Category 1.

Nuclear Safety Advisor Letter NSAL-00-016 was recently issued by Westinghouse. It addresses protection functions assumed for the RWFS event, which for VCSNS is addressed in Section 15.2.1 of the FSAR. As outlined in NSAL-00-016, the current FSAR analysis is performed assuming bounding, Mode 2 initial conditions, and primary protection is provided by the Power Range Neutron Flux–Low Setpoint assuming a 0.5 second response time. The Source Range (SR) reactor trip function is discussed in the FSAR as being available to terminate this event; however, it is not explicitly credited in the analyses. Instead, as identified in the NSAL-00-016, it is assumed that a RWFS event occurring in Modes 3, 4, or 5 is bounded by the FSAR analysis performed in Mode 2, based on implicitly crediting the SR reactor trip function. Therefore, although not explicitly analyzed for a RWFS event from Modes 3, 4, or 5, the SR reactor function is implicitly credited as a primary protection function.

Given that the SR reactor trip is now recognized as a primary protection function for the RWFS in Modes 3, 4, or 5, a response time requirement of 0.5 seconds is proposed for use in Table 3.3-2 of the VCSNS TS. The 0.5 seconds response time was selected to be consistent with the delay time assumed for the Power Range Neutron Flux trip function and, given that the neutron detectors are exempt from response time testing, would be measured from detector output or input of first electronic component in the channel. A reactor trip on the SR reactor trip function with a response time of 0.5 seconds will ensure that a RWFS event in Modes 3, 4, or 5 would remain bounded by the current FSAR analysis by ensuring that the reactor is shutdown before any significant power is generated.

The proposed change enhances the operability requirements for the SR Neutron Flux channels. The required periodic time response testing of the SR reactor trip function will serve to ensure that the SR reactor trip function is completed within the time limit assumed in the accident analyses.

Since issuance of Nuclear Safety Advisor Letter NSAL-00-016, time response testing of the SR reactor trip function was conducted to support continued operation of the plant until approval of this TS change request. The measured time response for the two SR reactor trip channels was less than 0.3 seconds. This testing demonstrates that the SR Reactor Trip function can meet the proposed time response requirement with margin and, based on engineering judgement, provides reasonable assurance that had a RWFS event occurred previously in Modes 3, 4, or 5 the SR Reactor Trip function would have accomplished its required safety function.

**NO SIGNIFICANT HAZARDS DETERMINATION
FOR REVISING SPECIFICATION
TABLE 3.3-2
OF THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS**

Description of Amendment Request

South Carolina Electric & Gas Company (SCE&G) proposes a change to Table 3.3-2 of the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) Surveillance Requirements to include a response time requirement of ≤ 0.5 seconds for the Source Range (SR) Neutron Flux Reactor Trip.

The proposed change results from SCE&G's review of Westinghouse Nuclear Safety Advisory Letter NSAL-00-016. This NSAL notified SCE&G that the SR Neutron Flux Reactor Trip is implicitly credited within the accident analyses for the Uncontrolled Rod Cluster Control Assembly Bank Withdrawal from Subcritical (RWFS) event during Modes 3, 4, and 5.

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 not involve any significant hazard. The following is provided in support of this conclusion.

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

This change enhances the operability requirements of the SR Neutron Flux Instrumentation (NI) system by requiring response time testing. The performance of the required response time testing for the SR Neutron Flux Channels does not contribute to the initiation of any accident previously evaluated. Testing will be done during normal channel calibration when the SR Reactor Trip function is not required to be operable. During and following the required response time testing, there will be no adverse affect on the design and operation of the NSSS, BOP, and fluid and auxiliary system which are important to safety. Since the reactor coolant pressure boundary integrity and normally operating systems are not adversely impacted, the probability of occurrence of an accident evaluated in the VCSNS FSAR is no greater than the original design basis of the plant.

The availability of a reactor trip on the SR trip function with a defined response time of 0.5 seconds ensures that the event consequences of a RWFS event in Modes 3, 4, or 5 remain bounded by the current FSAR analysis. This is accomplished by ensuring that the reactor is shutdown before any significant power is generated.

With this change, periodic time response testing of the SR reactor trip function will be required to demonstrate that SR reactor trip function can be completed within the time limit assumed in the accident analyses. This enhanced operability requirement of the SR NI system provides additional assurance that the plant will be operated within its design and licensing basis. Any event that requires the mitigative function of this system will remain bounded by the analysis documented in Chapter 15 of the FSAR. No adverse hardware, software, setpoint or procedure changes are associated with this change. Furthermore, during and following the required response time testing, there will be no adverse affect on the design and operation of the NSSS, BOP, and fluid and auxiliary systems which are important to safety. Given the above, there is no potential for additional releases as a result of this activity. Therefore, no increase in any previously evaluated accident consequences will occur.

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

Enhancing the operability requirement for a Reactor Protection System input can not be considered an accident precursor. This change adds response time testing to the SR NI system which assures that the accident analysis, including assumptions, is maintained. No hardware, software, operational practices or instrumentation setpoints are being revised. No change to plant operating characteristics or philosophy result from this change. Therefore, the possibility of an accident of a different type is not being created.

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

TS Table 3.3-2 currently states that the response time for the SR NI is not applicable. However, the inherent assumption that this system will be the principal system to mitigate the rod withdrawal from subcritical accident is described in FSAR 15.2.1. The margin of safety is enhanced by the addition of an administrative requirement, to assure the safety analysis assumptions are satisfied. The maximum response time of 0.5 seconds is consistent with the maximum for Power Range and is conservative enough to limit the potential excursion to a safe value prior to tripping the plant.

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
TABLE 3.3-2
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 CFR 51.22(c)(9): The proposed change adds a response time requirement of ≤ 0.5 seconds for the Source Range Neutron Flux Reactor Trip.

- (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.