SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE BOX 764

COLUMBIA, S. C. 29218

May 24, 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Virgil C. Summer Nuclear Station
Docket No. 50/395
Technical Specifications

Dear Mr. Denton:

Attached are miscellaneous changes to the Proof and Review Copy of the Technical Specifications for the Virgil C. Summer Nuclear Station.

The following is a brief explanation of the reasons for the requested changes:

PAGE	EXPLANATION
3/4 3-48 and 3/4 3-49	The position of the triaxial peak accelograph (item 2.b) has been relocated as described in our May 3, 1982, letter to Mr. Denton.
3/4 3-58 and 3/4 3-60	Position switches have been installed in each pressurizer safety valve to provide valve position indication.
3/4 8-13	Vital buses 5907 and 5908 are not required to be backed by an inverter connected to a D.C. bus because the momentary loss of these panels will not violate any analysis or detract from the safety of the plant. These panels feed control channels 1 and 3 and the auxiliary relay racks. An analysis of loss of power to control systems was included in our February 26, 1982, letter to Mr. Denton.
B3/4 3-1	This statement is added to the bases to clarify that although listed in Table 3.3-3, Items 3.c.3, 5.a, 6.g, 6.h, and 8. are not Engineered Safety Features.

Please contact Mr. L. D. Shealy if you have any questions.

Very truly yours,

T. C. Nichols, Jr.

T. C. Nichols, Jr.
Senior Vice-President
Power Operations

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LDS/vtw

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Attachments
cc: Page 2

cc: V. C. Summer (w/o attach.)
G. H. Fischer (w/o attach.)
H. N. Cyrus
T. C. Nichols, Jr. (w/o attach.)
O. W. Dixon, Jr.
M. B. Whitaker, Jr.
J. P. O'Reilly
H. T. Babb
D. A. Nauman
C. L. Ligon (NSRC)
W. A. Williams, Jr.
R. B. Clary
O. S. Bradham
L. D. Shealy
A. R. Koon
M. N. Browne
G. J. Braddick
M. J. Virgilio
J. L. Skolds
J. B. Knotts, Jr.
B. A. Bursey
NPCF
File

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	MINIMUM INSTRUMENTS OPERABLE
1. Triaxial Time-History Accelerographs System, including the following components:		
a. Reactor Building Foundation Mat Accelerometer	0.1 to 40 Hz 0.01 to 1.0g	1
b. Reactor Building Ring Girder Accelerometer	0.1 to 40 Hz 0.01 to 1.0g	1
c. Reactor Building Foundation Mat Trigger	1 to 10 Hz 0.005 to 0.02g	1*
2. Triaxial Peak Accelographs		
a. Top of Steam Generator	0-32 Hz -5g to +5g	1
b. Pressurizer Surge Line ~~Bottom of Reactor Vessel~~	0-32 Hz -5 to +5g	1
c. RHR System Heat Exchanger	0-20 Hz -2g to +2g	1
3. Triaxial Seismic Switches		
a. Reactor Building Foundation Mat	0.1 to 30 Hz 0.01 to 0.25 g	1*
4. Triaxial Response-Spectrum Recorders		
a. Reactor Building Foundation Mat	(1)	1*
b. Steam Generator Support	(1)	1
c. Intermediate Bldg., Elev. 463	(1)	1
d. Auxiliary Bldg. Foundation	(1)	1

*With control room, indication and/or alarm.

(1) Range varies for the multiple elements of the instrument, i.e., 1.6g at 2 Hz, 10g at 5 Hz, 34g at 10 Hz, 12g at 16 Hz.

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TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST
1. Triaxial Time-History Accelerographs, including the following components:			
a. Reactor Building Foundation Mat Accelerometer	M	R	SA
b. Reactor Building Ring Girder Accelerometer	M	R	SA
c. Reactor Building Foundation Mat Trigger*	M	R	SA
2. Triaxial Peak Accelerographs			
a. Top of Steam Generator	NA	R	NA
b. ~~Bottom of Reactor Vessel~~ Pressurizer Surge Line	NA	R	NA
c. RHR System Heat Exchanger	NA	R	NA
3. Triaxial Seismic Switches			
a. Reactor Building Foundation Mat*	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. Reactor Building Foundation Mat*	M	R	SA
b. Steam Generator Support	NA	R	NA
c. Intermediate Bldg. Elev. 463'	NA	R	NA
d. Auxiliary Bldg. Foundation	NA	R	NA

*With control room indications and/or alarm.

TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL OF CHANNELS	MINIMUM CHANNELS OPERABLE
13. Reactor Building RHR Sump Level	2	1
14. Reactor Building Level	2	1
15. Condensate Storage Tank Level	2	1
16. Reactor Building Cooling Unit Service Water Flow	2	1
17. Service Water Temperature-Reactor Building Cooling Unit (Inlet and Discharge)	2 pairs	1 pair
18. NaOH Storage Tank Level	2	1
19. Reactor Coolant System Subcooling Margin Monitor	2	1
20. PORV Position Indicator	1/valve*	1/valve*
21. PORV Block Valve Position Indicator	1/valve	1/valve
22. Safety Valve ~~Acoustical Monitor~~ Position Indicator	1/valve	1/valve
23. In-Core Thermocouples	4/core quadrant	2/core quadrant
24. Reactor Vessel Level	2	1

*Not required when the associated block valve is closed per Specification 3.4.4.

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TABLE 4.3-7 (continued)

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
12. Reactor Building Temperature	M	R
13. Reactor Building RHR Sump Level	M	R
14. Reactor Building Level	M	R
15. Condensate Storage Tank Level	M	R
16. Reactor Building Cooling Unit Service Water Flow	M	R
17. Service Water Temperature - Reactor Building Cooling Unit (Inlet and Discharge)	M	R
18. NaOH Storage Tank Level	M	R
19. Reactor Coolant System Subcooling Margin Monitor	M	R
20. PORV Position Indicator	M*	R*
21. PORV Block Valve Position Indicator	M	R
22. Safety Valve ~~Acoustical Monitor~~ Position Indicator	M	R
23. In-Core Thermocouples	M	R
24. Reactor Vessel Level	M	R

*Not required when the associated block valve is closed per Specification 3.4.4.

e. 120 volt A.C. Vital Bus #5907 energized.
f. 120 volt A.C. Vital Bus # 5908 energized.

3/4.8.3 ONSITE POWER DISTRIBUTION

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.3.1 The following electrical busses shall be energized in the specified manner with tie breakers open between redundant busses:

a. Train A A.C. Emergency Busses consisting of:
   1. 7200 volt Emergency Busses # 1DA and 1EA.
   2. 480 volt Emergency Busses # 1DA1, 1DA2 and 1EA1.
b. Train B A.C. Emergency Busses consisting of:
   1. 7200 volt Emergency Busses # 1DB and 1EB.
   2. 480 volt Emergency Busses # 1DB1, 1DB2, and 1EB1.
c. 120 volt A.C. Vital Busses # 5902, ~~5907~~ and 5901 energized from an associated inverter connected to D.C. Bus # 1HA*.
d. 120 volt A.C. Vital Busses # 5904, ~~5908~~ and 5903 energized from an associated inverter connected to D.C. Bus # 1HB*.
g. ~~e~~. 125 volt D.C. Bus 1HA energized from Battery Bank #1A.
h ~~f~~. 125 volt D.C. Bus 1HB energized from Battery Bank #1B.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

b. With one A.C. Vital Bus not energized re-energize the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

a. With one of the required trains of A.C. Emergency busses not fully energized, re-energize the division within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. ~~b~~. With one of A.C. Vital ~~Bus~~ Busses #5901, 5902, 5903, or 5904 either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus~~, (1) re-energize the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and (2)~~ re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. ~~c~~. With one D.C. Bus not energized from its associated Battery Bank, re-energize the D.C. bus from its associated Battery Bank within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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* ~~Three~~ The inverters may be disconnected from their D.C. Bus for up to 24 hours as necessary for the purpose of performing an equalizing charge on their associated battery bank provided (1) their vital buses are energized, and (2) the vital busses associated with the other battery bank are energized from their associated inverters and connected to their associated D.C. Bus.

3/4.3.1 and 3/4.3.2 REACTOR TRIP AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Protection System and Engineered Safety Feature Actuation System instrumentation and interlocks ensure that 1) the associated action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses. The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The measurement of response time at the specified frequencies provides assurance that the reactor trip and the engineered safety feature actuation associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite, or offsite test measurements or 2) utilizing replacement sensors with certified response times.

The Engineered Safety Features Actuation System senses selected plant parameters and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accidents, events, and transients. Once the required logic combination is completed, the system sends actuation signals to those engineered safety features components whose aggregate function best serves the requirements of the condition. As an example, the following actions may be initiated by the Engineered Safety Features Actuation System to mitigate the consequences of a steam line break or loss of coolant accident 1) safety injection pumps start and automatic valves position, 2) reactor trip, 3) feedwater isolation, 4) startup of the emergency diesel generators, 5) containment spray pumps start and automatic valves position, 6) containment isolation, 7) steam line isolation, 8) turbine trip, 9) auxiliary feedwater pumps start and automatic valve position, 10) containment cooling fans start and automatic valves position, 11) essential service water pumps start and automatic valves position, and 12) control room isolation and ventilation systems start.

INSERT A

INSERT A

Several automatic logic functions included in this specification are not necessary for Engineered Safety Feature System actuation but their functional capability at the specified setpoints enhances the overall reliability of the Engineered Safety Features functions. These automatic actuation systems are purge and exhaust isolation from high containment radioactivity, turbine trip and feedwater isolation from steam generator high-high water level, initiation of emergency feedwater on a trip of the main feedwater pumps, automatic transfer of the suctions of the emergency feedwater pumps to service water on low suction pressure, and automatic opening of the containment recirculation sump suction valves for the RHR and spray pumps on low-low refueling water storage tank level.