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

Attention: Ms. K. R. Cotton

Gentlemen:

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Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
TECHNICAL SPECIFICATION AMENDMENT REQUEST
TSP 00-0032 REVISION TO ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TABLES

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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). This request is being submitted pursuant to 10 CFR 50.90.

The proposed changes will add an allowed outage time for the following Engineered Safety Features Actuation System Instrumentation channels to be out of service in a bypassed state. These are the channels that are energized to actuate and are permitted by TS to be placed in a bypassed state. Specifically, these are the level channels for the Refueling Water Storage Tank (RWST) that initiate the semi-automatic swap-over to the Reactor Building recirculation sumps; the pressure channels in the suction piping to the Emergency Feedwater pumps (EFW) that initiate the swap-over to the safety-related source of water; and the Reactor Building Pressure channels that initiate the containment spray system.

The purpose for requesting this change is to resolve a condition where, due to a newly determined single failure consideration, the above functions may not automatically occur when needed. This would only occur if one or more functions had one channel in bypass with a coincident Design Basis Accident and a specific direct current power failure. Currently, the VCSNS TS permit the placing of one inoperable channel per function in bypass, for an indefinite period of time. This condition was identified in Licensee Event Report 50/395 2000-004-00.

A001

This amendment request will provide a limitation on the amount of time any of the above channels may be placed in bypass. Page 3/4 3-23, Action Statements 16 will state that an inoperable channel may be placed in bypass for no more than 72 hours, otherwise the channel would have to be placed in the tripped condition or the plant would have to shut down.

This proposed amendment will also revise TS 3/4.3.2 Tables 3.3-3 and 3.3-4 to incorporate consistent applicability and action for Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Functional Unit 5.b. (Automatic Actuation Logic and Actuation Relay) Turbine Trip and Feedwater Isolation. This change will provide consistency between Tables 3.3-3, 3.3-4 and 4.3-2 and will be similar to the equivalent requirement in NUREG 1431, Revision1.

Additionally, Table 3.3-4, ESFAS Instrumentation Trip Setpoints, Functional Unit 4.e. (Steam Line Isolation - Steamline Pressure - Low) does not have a corresponding functional unit on Table 4.3-2, to assure that the surveillance requirements are being met. This administrative change to Functional Unit 4.e. is added to Table 4.3-2, to provide consistency with the surveillance requirements. The surveillance requirement is met by Functional Unit 1.f., however, this administrative change provides a one-for-one correlation between Tables 3.3-3, 3.3-4, and 4.3-2. SCE&G determined that an administrative change to add the surveillance requirements for Functional Unit 4.e. to Table 4.3-2 would resolve this discrepancy.

No change to the Bases section is required.

SCE&G desires that this amendment request be approved at your earliest convenience. Currently these conditions are being prevented by use of administrative controls.

FSAR Section 7.2 may be affected by this change and will be reviewed for necessary revisions prior to implementation of this change.

No commitments are being proposed in association with this change.

The TS amendment request is contained in the following attachments:

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

This proposed amendment has been reviewed and approved by the Plant Safety Review Committee and the Nuclear Safety Review Committee.

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

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

Should you have questions, please call Mr. Philip A. Rose at (803) 345-4052.

Very truly yours,

Stephen A. Byrne

PAR/SAB/dr
Attachments (3)

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o Attachment)
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RTS (TSP 00-0032)
File (813.20)
DMS (RC-00-0376)

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

I hereby certify that on the 28th day of DECEMBER 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 13th, 2005
Date

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

Remove Page	Insert Page
3/4 3-20	3/4 3-20
3/4 3-23	3/4 3-23
3/4 3-24	3/4 3-24
3/4 3-28	3/4 3-28
3/4 3-37	3/4 3-37

SCE&G -- EXPLANATION OF CHANGES

Page	Affected Section	Bar #	Description of Change	Reason for Change
3/4 3-20	Table 3.3-3	1	Added Functional Unit 5.b., "Automatic Actuation Logic and Actuation Relay" to TURBINE TRIP AND FEEDWATER ISOLATION Unit.	Determined that Table 3.3-3 will be conservatively considered to include Functional Unit 5.b., to provide consistency with Tables 3.3-4 and 4.3-2, similar to NUREG 1431, Revision 1.
3/4 3-23	Table 3.3-3 Action Statement 16	1	Adding Allowed Outage Time to Action 16.	LER 2000-004-00 commitment.
	Action Statement 19.b	2	Removed "s" from requirement.	Typographical error made in original issuance of TS.
3/4 3-24	Action Statement 24	1	Removed "s" from requirement.	Typographical error made in TS Amendment 101.
	Table 3.3-3	2	Added ACTION STATEMENT 25 to describe action for inoperable channels of Functional Unit 5.b.	Same reason for change as Page 3/4 3-20 above.
3/4 3-28	Table 3.3-4	1	Added Functional Unit 5.b., "Automatic Actuation Logic and Actuation Relay" to TURBINE TRIP AND FEEDWATER ISOLATION Unit.	Same reason for change as Page 3/4 3-20 above.
3/4 3-37	Table 4.3-2	1	Added Functional Unit 4.e.,"Steam Line Pressure Low" to STEAMLINE ISOLATION.	Identified that this Surveillance Requirement is missing from Table 4.3-2, even though the requirement is being performed under the Surveillance Requirement for Functional Unit 1.f.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
e. Steam Line Pressure-Low	1 pressure/loop	1 pressure any 2 loops	1 pressure any 2 loops	1, 2, 3##	24*
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2	24*
b. Automatic Actuation Logic and Actuation Relay	2	1	2	1,2	25

TABLE 3.3-3 (Continued)

TABLE NOTATION

#Trip function may be blocked in this MODE below the P-11 (Pressurizer Pressure Interlock) setpoint.

##Trip function may be blocked in this MODE below the P-12 (Low-Low Tavg Interlock) setpoint.

*The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1, provided the other channel is OPERABLE.

ACTION 15 - DELETED

replace with Insert 1 →

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels operation may proceed provided the inoperable channel is placed in the bypassed condition and the Minimum Channels OPERABLE requirement is met. One additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE requirement, operation may continue provided the containment purge supply and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 1 hour.

b. The Minimum Channels OPERABLE requirements is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels per Specification 4.3.2.1.

TABLE 3.3-3 (Continued)

ACTION STATEMENTS (Continued)

ACTION 20 - With less than the Minimum Number of Channels OPERABLE, within one hour determine by observation of the associated permissive annunciator window(s) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.

ACTION 21 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channels to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 22 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ACTION 24 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.2.1.

INSERT 2 →

Insert 1

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may continue provided the inoperable channel is placed in bypass and the Minimum Channels OPERABLE requirement is met. Restore the inoperable channel to OPERABLE status within 72 hours otherwise;

Place the affected channel in trip within the following hour

Or

Be in at least HOT STANDBY within the next 6 hours and IN COLD SHUTDOWN within the following 30 hours

One additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

Insert 2

ACTION 25 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable Channels to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1, provided the other channel is OPERABLE.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

	Functional Unit	Trip Setpoint	Allowable Value
5.	TURBINE TRIP AND FEEDWATER ISOLATION		
	a. Steam Generator Water Level - High-High Barton Transmitter Rosemount Transmitter	 ≤79.2% of span ≤79.2% of span	 ≤81.0% of span ≤81.0% of span
6.	EMERGENCY FEEDWATER		
	a. Manual	NA	NA
	b. Automatic Actuation Logic	NA	NA
	c. Steam Generator Water Level - Low-Low Barton Transmitter Rosemount Transmitter	 ≥27.0% of span ≥27.0% of span	 ≥26.1% of span ≥25.7% of span
	d. & f. Undervoltage-ESF Bus	≥5760 Volts with a ≤0.25 second time delay ≥6576 Volts with a ≤3.0 second time delay	≥5652 Volts with a ≤0.275 second time delay ≥6511 Volts with a ≤3.3 second time delay

b. Automatic Actuation Logic NA NA

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
4. STEAM LINE ISOLATION								
a. Manual	N.A.	N.A.	NA.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Reactor Building Pressure-High-2	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident With T_{avg}--Low-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION								
a. Steam Generator Water Level--High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2
b. Automatic Actuation Logic and Actuation Relay	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2
6. EMERGENCY FEEDWATER								
a. Manual	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Steam Generator Water Level--Low-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Line Pressure Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
e. Steam Line Pressure-Low	1 pressure/ loop	1 pressure any 2 loops	1 pressure any 2 loops	1, 2, 3##	24*
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level-- High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2	24*
b. Automatic Actuation Logic and Actuation Relay	2	1	2	1, 2	25

TABLE 3.3-3 (Continued)

TABLE NOTATION

Trip function may be blocked in this MODE below the P-11 (Pressurizer Pressure Interlock) setpoint.

Trip function may be blocked in this MODE below the P-12 (Low-Low T_{avg} Interlock) setpoint.

* The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1, provided the other channel is OPERABLE.

ACTION 15 - DELETED

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may continue provided the inoperable channel is placed in bypass and the Minimum Channels OPERABLE requirement is met. Restore the inoperable channel to OPERABLE status within 72 hours otherwise;

Place the affected channel in trip within the following hour
or
Be in at least HOT STANDBY within the next 6 hours and
IN COLD SHUTDOWN within the following 30 hours

One additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE requirement, operation may continue provided the containment purge supply and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 1 hour.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 2 hours for surveillance testing of other channels per Specification 4.3.2.1.

TABLE 3.3-3 (Continued)

ACTION STATEMENTS (Continued)

ACTION 20 - With less than the Minimum Number of Channels OPERABLE, within one hour determine by observation of the associated permissive annunciator window(s) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.

ACTION 21 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channels to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 22 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ACTION 24 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.2.1.

ACTION 25 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable Channels to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1, provided the other channel is OPERABLE.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

	Functional Unit	Trip Setpoint	Allowable Value
5.	TURBINE TRIP AND FEEDWATER ISOLATION		
	a. Steam Generator Water Level - High-High Barton Transmitter Rosemount Transmitter	 ≤79.2% of span ≤79.2% of span	 ≤81.0% of span ≤81.0% of span
	b. Automatic Actuation Logic	NA	NA
6.	EMERGENCY FEEDWATER		
	a. Manual	NA	NA
	b. Automatic Actuation Logic	NA	NA
	c. Steam Generator Water Level - Low-Low Barton Transmitter Rosemount Transmitter	 ≥27.0% of span ≥27.0% of span	 ≥26.1% of span ≥25.7% of span
	d. & f. Undervoltage-ESF Bus	≥ 5760 Volts with a ≤0.25 second time delay ≥ 6576 Volts with a ≤3.0 second time delay	≥ 5652 Volts with a ≤0.275 second time delay ≥ 6511 Volts with a ≤3.3 second time delay

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
4. STEAM LINE ISOLATION								
a. Manual	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Reactor Building Pressure-High-2	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident with T_{avg}-- Low-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Line Pressure Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION								
a. Steam Generator Water Level--High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2
b. Automatic Actuation Logic and Actuation Relay	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2
6. EMERGENCY FEEDWATER								
a. Manual	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Steam Generator Water Level--Low-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3

SAFETY EVALUATION FOR REVISING ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TABLES IN THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

The Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS), are being revised to add an Allowed Outage Time (AOT) to Table 3.3-3, Engineered Safety Features Actuation System (ESFAS) instrumentation, Action Statement 16. Licensee Event Report 50/395 2000-004-00 described a scenario where a condition could occur that would prevent the automatic actuation of the "energize to actuate" functions. This condition is, in part caused by the current action statement that allows specific instrumentation channels to be placed in bypass for an indefinite period of time. Establishing an AOT will assure the channels remain operable and permit single failure requirements to be satisfied. An option to follow a shut down requirement or a requirement to place the inoperable channel in trip is being added to protect the plant in the event that a channel becomes inoperable and cannot be restored within the allotted time.

This proposed amendment will revise the VCSNS TS 3/4 3.2 to incorporate consistent applicability and action for Functional Unit 5.b., Automatic Actuation Logic and Actuation Relay for Turbine Trip and Feedwater Isolation (P-14). This change adds ACTION STATEMENT 25 to help provide consistency. Currently, Table 4.3-2 has this Functional Unit, whereas Tables 3.3-3 and 3.3-4 do not identify this same Functional Unit. Additionally, an administrative change to Functional Unit 4.e. is added to Table 4.3-2, to provide consistency with the surveillance requirements. These requirements are currently met by Functional Unit 1.f., however, this administrative change provides a one-for-one correspondence between Tables 3.3-3, 3.3-4, and 4.3-2. No change to the Bases section is required.

Background

LER 2000-004-00 provided written notification of single failure vulnerability due to a deficiency in the current Limiting Condition for Operability for Engineered Safety Feature Actuation System (ESFAS) instrumentation. For one inoperable channel in the Emergency Feedwater suction swap-over on low suction pressure, Refueling Water Storage Tank (RWST) to Reactor Building Recirculation sump swap-over on lo-lo level, or Containment Spray actuation on High-3 building pressure, the Technical Specification (TS) requirement is to place the channel in bypass. There is no completion or restoration time specified.

During a design basis accident, a single failure involving a loss of power to the opposite train instrumentation, while one or more of these channels were in bypass would prevent the safety function from automatically occurring. This condition is the result of the safety related 120 VDC power supply configuration of the plant. VCS only has two 120 VDC power sources, one for each channel. In this configuration, a loss of a 120 VDC bus will disable its associated train. Since these instrument loops are energize to actuate (to prevent spurious actuation) the available logic will not be satisfied and the automatic actuation will not occur. The logic scheme is 2 out of 4 (2 out of 3 with a channel in bypass). This is not a concern with other instrument loops in the plant, as they fail in the safe position.

Administrative controls were established to prevent or minimize the amount of time one of these channels would be in the bypassed condition, with 72 hours being the Allowed Outage Time (AOT). Additionally, the administrative control specifies that the operating crew must notify the plant management duty supervisor should any of the above listed functions require placing a channel in bypass. This assures that plant management is aware of the plant configuration and associated risk.

Evaluations stemming from Generic Letter 96-01determined that there was no functional unit in Tables 3.3-3 and 3.3-4 to correspond to 5.b. in Table 4.3-2. This meant that if the surveillance performed indicated an unsatisfactory condition, there was no action statement to provide guidance to the plant. Administrative controls were enacted to provide guidance should the plant ever be in this situation. ACTION STATEMENT 25 is being added to this Table per the guidance located in NRC Administrative Letter 98-10.

Similarly, a discrepancy was discovered between these same tables for Functional Unit 4.e., STEAM LINE ISOLATION – Steam Line Pressure Low. In this case, the discrepancy was identified on a Condition Evaluation Report. Functional Unit 4.e. was located in Tables 3.3-3 and 3.3-4 but had no corresponding Surveillance Requirement in Table 4.3-2. This was not a concern since an identical Surveillance Requirement is located in Functional Unit 1.f. Administrative controls were also enacted to assure consistency and provide the redundant requirement with this Functional Unit

Safety Evaluation

Normally, when a TS required system or component is inoperable, there is a specific time period that it is permitted to remain inoperable before other actions are required to be performed to assure the plant can satisfy the design basis. During this time period, a licensee does not have to postulate a single failure coincident with the design basis accident (DBA) due to the limited time the system is inoperable and the low probability of the DBA occurring. This philosophy follows the guidance of Generic Letter 80-30, IEEE 279-1979, and ANSI 58.9-1981. Without the established time period, this guidance should not be applied.

Providing a specified time period will bring the plant into conformance with the design basis. An AOT of 72 hours was determined to be an acceptable time period based on guidance found in WCAP 14333-P-A, Revision 1 and the Plant specific Probability Safety Assessment (PSA) calculation performed for LER 2000-004-00. Additionally, there is never a loss of operator action from the control room to manually actuate the required component(s). Procedural guidance located in Emergency Operating Procedures requires that all expected automatic Engineered Safety Features actuations be verified or be manually actuated if the automatic actuation does not occur as expected.

The justification for 72 hours in WCAP 14333-P-A, Revision 1 addresses the low probability for a DBA during the AOT, while minimizing the time period that the channel is in bypass. A review of plant operating logs had shown that there have not been any of these channels in bypass for longer than 20 hours within the last 7 years.

The plant specific PSA calculation performed for LER 2000-004-00 evaluated the probability and consequences of this condition and concluded that this event has a very low probability of occurrence. The following assumptions were made and documented in this calculation:

- A Condition IV DBA coincident with a loss of offsite power.
- One channel from each of the "energize to actuate" functions were bypassed for greater than one year.
- A loss of the opposite train DC power prior to the start of its associated Emergency Diesel Generator.

The PSA model for VCSNS takes no credit for the Emergency Feedwater suction swap-over; meaning that this is not a contributor to core damage from a risk significance view point. However, the other two functions are modeled and the resulting core damage frequency change is 2.4 E-8 with the associated Large Early Release Frequency change being 1.7 E-10. These numbers demonstrate that there is a very low probability of the DBA occurring while the plant is in this configuration and the consequences are non-significant. Therefore, 72 hours is more than adequate to ensure that the plant is maintained in a safe configuration.

Table 4.3-2, Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements, applicability, and action for Functional Unit 5.b., Automatic Actuation Logic and Actuation Relay are not reflected in Tables 3.3-3 and 3.3-4. This is a conservative change, to reflect the consistent application of Functional Unit 5.b. Tables 3.3-3 and 3.3-4 will include Functional Unit 5.b.; which is also consistent with the Improved Technical Specifications, NUREG-1431, Rev. 1.

There were no physical or procedural changes to reflect the addition of Functional Unit 5.b., Automatic Actuation Logic and Actuation Relay associated with the Turbine Trip & Feedwater Isolation ESFAS Instrumentation. There are no changes made by additional conservative actions taken in the event of a loss this functional unit.

The change provides consistent control by including an AOT limit for TS 3/4 3.2, Table 3.3-3, Functional Unit 5.b. through adding action statement 25. This is a more conservative application of the actions taken in the event of an inoperable functional unit. The AOT limit of 24 hours follows the guidance of WCAP 14333-P-A, Revision1. The basis for the 24 hour AOT is based on the other train being operable and the low probability of an event occurring during this interval.

These actions provide an additional conservatism to the existing TS by placing a further restriction on the ESFAS Instrumentation, Instrumentation Trip Setpoints and Instrumentation Surveillance Requirements: TS 3/4 3.2, Table 3.3-3, by adding items 5.b. and Action 25, Table 3.3-4, by adding item 5.b., and Table 4.3-2, by adding item 4.e.

Since the LCO and Setpoint requirements are identical for both pressure transmitter functional units and are initiated by the "A" bistable in each instrument loop, the addition of Functional Unit 4.e. to Table 4.3-2 is merely a repetition of the surveillance requirements and is therefore an administrative change only.

The addition of Functional Unit 4.e is administrative in that there already exists a TS requirement that assures this function is tested at the correct frequency. The Surveillance Test Procedure for Functional Unit 1.f verifies the correct response for both functional units. This change is to preclude confusion when comparing the setpoint Table (3.3-4) and the Surveillance Requirements Table (4.3-2).

Additionally, Table 3.3-3, Engineered Safety Feature Actuation System Instrumentation applicability, action, and surveillance requirements for Functional Unit 1.f., Steam Line Pressure - Low are duplicated in Functional Unit 4.e., Steam Line Pressure - Low.

Table 3.3-4, Engineered Safety Feature Actuation System Instrumentation Trip Setpoints specify identical Trip Setpoints of ≥675 psig and Allowable Values of ≥635 psig for these same functional units, respectively. Table 4.3-2, Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements, Functional Unit 1.f., Steam Line Pressure Low, specifies the functional parameters to be tested and the intervals for test performance.

FSAR Sections 6.2. 6.3, 7.3, and 8.3 were reviewed. The FPER was reviewed but not applicable. These reviews demonstrated there are no changes made to the facility by further restricting the actions taken in the event of a loss of Functional Units 5.b. or 4.e. These changes provide an administrative control for consistency and conservatism and do not make any changes as described in the FSAR/FPER.

The proposed changes impose more restrictive operating limitations, and their use provides increased assurance that the ESFAS Instrumentation remains operable.

NO SIGNIFICANT HAZARDS EVALUATION FOR REVISING ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TABLES IN THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

The Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS), are being revised to add an Allowed Outage Time (AOT) to Table 3.3-3, Engineered Safety Features Actuation System (ESFAS) instrumentation, Action Statement 16. Licensee Event Report 50/395 2000-004-00 described a scenario where a condition could occur that would prevent the automatic actuation of the "energize to actuate" functions. This condition is, in part caused by the current action statement that allows specific instrumentation channels to be placed in bypass for an indefinite period of time. Establishing an AOT will assure the channels remain operable and permit single failure requirements to be satisfied. An option to follow a shut down requirement or a requirement to place the inoperable channel in trip is being added to protect the plant in the event that a channel becomes inoperable and cannot be restored within the allotted time.

This proposed amendment will revise the VCSNS TS 3/4 3.2 to incorporate consistent applicability and action for Functional Unit 5.b., Automatic Actuation Logic and Actuation Relay for Turbine Trip and Feedwater Isolation (P-14). This change adds ACTION STATEMENT 25 to help provide consistency. Currently, Table 4.3-2 has this Functional Unit, whereas Tables 3.3-3 and 3.3-4 do not identify this same Functional Unit. Additionally, an administrative change to Functional Unit 4.e. is added to Table 4.3-2, to provide consistency with the surveillance requirements. These requirements are currently met by Functional Unit 1.f., however, this administrative change provides a one-for-one correspondence between Tables 3.3-3, 3.3-4, and 4.3-2. No change to the Bases section is required.

Background

LER 2000-004-00 provided written notification of single failure vulnerability due to a deficiency in the current Limiting Condition for Operability for Engineered Safety Feature Actuation System (ESFAS) instrumentation. For one inoperable channel in the Emergency Feedwater suction swap-over on low suction pressure, Refueling Water Storage Tank (RWST) to Reactor Building Recirculation sump swap-over on lo-lo level, or Containment Spray actuation on High-3 building pressure, the Technical Specification (TS) requirement is to place the channel in bypass. There is no completion or restoration time specified.

During a design basis accident, a single failure involving a loss of power to the opposite train instrumentation, while one or more of these channels were in bypass would prevent the safety function from automatically occurring. This condition is the result of the safety related 120 VDC power supply configuration of the plant. VCS only has two 120 VDC power sources, one for each channel. In this configuration, a loss of a 120 VDC bus will disable its associated train. Since these instrument loops are energize to actuate (to prevent spurious actuation) the available logic will not be satisfied and the automatic actuation will not occur. The logic scheme is 2 out of 4 (2 out of 3 with a channel in bypass). This is not a concern with other instrument loops in the plant, as they fail in the safe position.

Administrative controls were established to prevent or minimize the amount of time one of these channels would be in the bypassed condition, with 72 hours being the AOT. Additionally, the administrative control specifies that the operating crew must notify the plant management duty supervisor should any of the above listed functions require placing a channel in bypass. This assures that plant management is aware of the plant configuration and associated risk.

Evaluations stemming from Generic Letter 96-01determined that there was no functional unit in Tables 3.3-3 and 3.3-4 to correspond to 5.b. in Table 4.3-2. This meant that if the surveillance performed indicated an unsatisfactory condition, there was no action statement to provide guidance to the plant. Administrative controls were enacted to provide guidance should the plant ever be in this situation. ACTION STATEMENT 25 is being added to this Table per the guidance located in NRC Administrative Letter 98-10.

Similarly, a discrepancy was discovered between these same tables for Functional Unit 4.e., STEAM LINE ISOLATION – Steam Line Pressure Low. In this case, the discrepancy was identified on a Condition Evaluation Report. Functional Unit 4.e. was located in Tables 3.3-3 and 3.3-4 but had no corresponding Surveillance Requirement in Table 4.3-2. This was not a concern since an identical Surveillance Requirement is located in Functional Unit 1.f. Administrative controls were also enacted to assure consistency and provide the redundant requirement with this Functional Unit

Basis for No Significance 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 10 CFR 50.92 and has determined that the changes do not involve any significant hazard. The following is provided in support of this conclusion.

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

   The addition of an ACTION STATEMENT and the addition of an AOT (and its associated actions if not met) for a TS action statement are neither an accident initiator or precursor. The ESFAS actuates in response to an accident and has a mitigating function. Increasing the TS requirements for specific TS instrument loops provides additional assurance that the channels will be capable of performing their design function in the event of a DBA. The ability of the operations staff to respond to an evaluated accident or plant transient will not be hampered. This change provides conservative requirements to assure that the design basis of the plant is maintained.

   Addition of conservative changes to the Engineered Safety Feature Actuation System Instrumentation do not contribute to the initiation of any accident evaluated in the FSAR. Supporting factors are as follows:

   - The changes provide consistency between Tables 3.3-2, 3.3-3, and 4.3-2, resulting in a one-for-one correlation between the functional units in those tables. These changes are conservative and consistent with the Standard Technical Specifications, NUREG-1431, Rev. 1. There are no deletions from the Technical Specifications made by these changes, nor relaxation in any applicability, action, or surveillance requirements.

   - Overall plant performance and operation is not altered by the proposed changes. There are to be no plant hardware changes as a result of this proposed change and only minimal procedural changes.

   Therefore, since the Engineered Safety Feature Actuation System Instrumentation are treated more conservatively, the probability of occurrence or consequences of an accident evaluated in the VCSNS FSAR will be no greater than the original design basis of the plant.

Therefore, the change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed changes provide consistency between Tables 3.3-2, 3.3-3, and 4.3-2, resulting in a one-for-one correlation between the functional units in those tables. Additionally, the addition of an ACTION STATEMENT and an AOT with conservative requirements are intended to assure that the plant is in a safe configuration and can meet accident analyses assumptions. These changes are conservative and consistent with the Improved Technical Specifications, NUREG-1431, Rev. 1. No new accident initiator mechanisms are introduced since:

- No physical changes to the Engineered Safety Feature Actuation System Instrumentation are made.
- No deletions from the Technical Specifications are made.
- No relaxation in any applicability, action, or surveillance requirements are made.

Since the safety and design requirements continue to be met and the integrity of the reactor coolant system pressure boundary is not challenged, no new accident scenarios have been created. Therefore, the types of accidents defined in the FSAR continue to represent the credible spectrum of events to be analyzed which determine safe plant operation.

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

The proposed change requires that an instrument channel for an Engineered Safety Feature remain operable or be restored to operability within a reasonable time period, otherwise a controlled shutdown is required. This conforms to the safety analysis where the plant and its systems, structures and components must be capable of performing the safety function while a DBA is occurring, in the presence of a worst case single failure.

This is not a reduction in a margin of safety, since it restores the margin that was designed into the plant.

The proposed changes provide consistency between Tables 3.3-2, 3.3-3, and 4.3-2, resulting in a one-for-one correlation between the functional units in those tables. These changes are conservative and consistent with the Standard Technical Specifications, NUREG-0452, Rev. 5.

The proposed changes impose more restrictive operating limitations, and their use provides increased assurance that the Engineered Safety Feature Actuation System Instrumentation remains operable. Since the changes are conservative additions, it is concluded that the changes do not involve a significant reduction in the margin of safety. This is not a reduction in a margin of safety, since it restores the margin that was designed into 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 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): Although the proposed change involves change to requirements with respect to inspection, Surveillance, or Design Requirements,

(i) the proposed change involves No Significance Hazards Consideration (refer to the No Significance Hazards Consideration Determination section of this Technical Specification Change Request);

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned 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.