

Enclosure 1 to Document Control Desk letter  
November 26, 1990  
Page 1 of 5

PROPOSED TECHNICAL SPECIFICATION CHANGE - TSP 890016  
VIRGIL C. SUMMER NUCLEAR STATION

LIST OF AFFECTED PAGES

<u>Page</u>	<u>Description</u>
3/4 8-1	3.8.1.1 Action a.1 and b.1 Editorial change
3/4 8-2	3.8.1.1 Action c.1 Editorial change
3/4 8-2a	3.8.1.1 Action e.1 and 4.8.1.1.1.2 Editorial change
3/4 8-3	4.8.1.1.1.b Deleted

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent Emergency Diesel Generators (EDG), each with:
  1. A separate day fuel tank containing a minimum volume of 300 gallons of fuel,
  2. A separate fuel storage system containing a minimum volume of 47,100 gallons of fuel, and
  3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable:
  1. Demonstrate the OPERABILITY of the remaining offsite A.C. sources by performing Surveillance Requirement 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter, and
  2. If either EDG has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.3 separately for each such EDG within 24 hours unless the diesel is already operating, and
  3. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one EDG of 3.8.1.1.b inoperable:
  1. Demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter, and
  2. If the EDG became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining EDG by performing Surveillance Requirements 4.8.1.1.2.a.3 within 24 hours\*, and

\*This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

- 3. Within 2 hours, verify that required systems, subsystems, trains components and devices that depend on the remaining EDG as a source of emergency power are also OPERABLE and in MODE 1, 2, or 3, that the Turbine Driven Emergency Feed Pump is OPERABLE. If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- 4. Restore the EDG to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
  - c. With one offsite circuit and one EDG inoperable:
    - 1. Demonstrate the OPERABILITY of the remaining offsite A.C. source by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter, and
    - 2. If the EDG became inoperable due to any cause other than unplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining EDG by performing Surveillance Requirement 4.8.1.1.2.a.3 within 8 hours<sup>a</sup>, and
    - 3. Within 2 hours, verify that required systems, subsystems, trains, components and devices that depend on the remaining EDG as source of emergency power are also OPERABLE and in MODE 1, 2, or 3, that the Turbine Driven Emergency Feed Pump is OPERABLE. If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
    - 4. Restore one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
    - 5. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statement a. or b., as appropriate, with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A. C. power source.

<sup>a</sup>This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

SUMMER - UNIT 1

3/4 8-2

AMENDMENT NO. 77

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

3. Within 2 hours, verify that required systems, subsystems, trains components and devices that depend on the remaining EDG as a source of emergency power are also OPERABLE and in MODE 1, 2, or 3, that the Turbine Driven Emergency Feed Pump is OPERABLE. If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
4. Restore the EDG to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one offsite circuit and one EDG inoperable:
  1. Demonstrate the OPERABILITY of the remaining offsite A.C. source by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter, and
  2. If the EDG became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining EDG by performing Surveillance Requirement 4.8.1.1.2.a.3 within 8 hours<sup>a</sup>, and
  3. Within 2 hours, verify that required systems, subsystems, trains, components and devices that depend on the remaining EDG as source of emergency power are also OPERABLE and in MODE 1, 2, or 3, that the Turbine Driven Emergency Feed Pump is OPERABLE. If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
  4. Restore one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
  5. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provision of Section 3.8.1.1 Action Statement a. or b., as appropriate, with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A. C. power source.

<sup>a</sup>This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

- d. With two of the required offsite A. C. circuits inoperable:
1. Demonstrate the OPERABILITY of the two EDG's by sequentially performing Surveillance Requirement 4.8.1.1.2.a.3 on both within 8 hours, unless the EDG's are already operating, and
  2. Restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours.
  3. Following restoration of one offsite source, follow Action Statement a. with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.
- e. With two of the above required EDG's inoperable:
1. Demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter, and
  2. Restore one of the inoperable EDG's to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
  3. Following restoration of one EDG, follow Action Statement b. with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be

*Determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indication of power availability, and for each Class 1E bus and its preferred offsite power source.*

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

DELETE →

~~b. Demonstrated OPERABLE at least once every 18 months by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.~~

4.8.1.1.2 Each EDG shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in the day tank and fuel storage tank.
  2. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
  3. Verifying the diesel generator can start\* and accelerate to synchronous speed (504 rpm) with generator voltage and frequency at  $7200 \pm 720$  volts and  $60 \pm 1.2$  Hz.
  4. Verifying the generator is synchronized, gradually loaded\* to an indicated 4150-4250 kW\*\* and operates for at least 60 minutes.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by removing accumulated water from the day tank.
- c. By obtaining a sample of fuel oil in accordance with ASTM-D270-1975 at least once per 92 days and prior to the addition of new fuel oil to the storage tanks and verifying that the sample meets the following minimum requirements and is tested within the specified time limits:
  1. As soon as sample is taken (or prior to adding new fuel to the storage tank) verify in accordance with the tests specified in ASTM-D975-77 that the sample has:
    - a) A water and sediment content of less than or equal to 0.05 volume percent.
    - b) A kinematic viscosity @ 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes.
    - c) A specific gravity as specified by the manufacturer @ 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity @ 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.

\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

\*\*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band shall not invalidate the test.

PROPOSED TECHNICAL SPECIFICATION CHANGE TSP 890016

VIRGIL C. SUMMER NUCLEAR STATION

DESCRIPTION AND SAFETY EVALUATION

**DESCRIPTION OF CHANGE**

SCE&G proposes to modify the VCSNS technical specifications (TS) to revise TS 4.8.1.1.1. The proposed change deletes surveillance requirement 4.8.1.1.1.b. The intent of the surveillance requirement is to demonstrate operability of the offsite, preferred power sources. This surveillance requirement is not applicable to VCSNS based on the design configuration and mode of operation of the offsite power supply system.

**SAFETY EVALUATION**

Two separate and physically independent sources of offsite power (normal circuit) provide preferred AC power to the class 1E electric power system. One source, the 230KV transmission grid, normally supplies power to bus B, and the second source, the 115KV transmission line from the Parr generating complex, supplies power to bus A. (Reference FSAR Figure 8.2-3, "Balance of Plant Power System," and Figure 8.2-4, "Engineered Safety Features Power System.")

Either independent source is capable of providing power to both buses by manually switching the breakers connecting the class 1E buses to the transmission line. The connection of the safety buses to a single offsite power source is intended as a maintenance feature to service the breakers, rather than an operational feature.

The two independent power supply sources (normal circuit) are continuously connected to provide power to their designated bus through an Engineered Safety Feature (ESF) transformer or an emergency auxiliary transformer. In the event of a loss of one of the offsite power sources, the onsite diesel generator for the affected class 1E bus will automatically start, and after the bus is isolated from its offsite power source, it will supply emergency power to that bus. The other class 1E bus remains continually fed from its independent source without interruption. The installed offsite power supply system does not have an "alternate" power supply circuit.

The two offsite power sources have adequate separation and isolation such as to preclude degradation of one source upon the loss or failure of the other. Adequate indication on the main control board is provided to monitor the class 1E buses operating levels.

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DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

**DESCRIPTION OF CHANGE**

SCE&G proposes to modify the VCSNS technical specifications (TS) to revise TS 4.8.1.1.1. The proposed change deletes surveillance requirement 4.8.1.1.1.b. The intent of the surveillance requirement is to demonstrate operability of the offsite, preferred power sources. This surveillance requirement is not applicable to VCSNS based on the design configuration and mode of operation of the offsite power supply system.

**SIGNIFICANT HAZARDS EVALUATION**

SCE&G has evaluated the proposed technical specification change and has determined that it does not represent a significant hazard consideration based on the criteria established in 10 CFR 50.92. Operation of Virgil C. Summer Nuclear Station in accordance with the proposed amendment will not:

- (1) involve a significant increase in the probability or consequences of an accident previously evaluated.

The function of the offsite power supply system as described in the FSAR section 8.2 and the function of the onsite A-C power system as described in FSAR section 8.3.1 remain unchanged. The two independent offsite power supply sources normally supply preferred AC power to the class 1E ESF buses through stepdown transformers. These two sources have adequate separation and isolation to preclude any single failure from degrading the ESF AC power system. The intent of the surveillance requirement to demonstrate operability of the offsite power sources is met on a continuous basis. VCSNS does not have an "alternate" offsite power supply source. Therefore, the requirement to transfer the unit power supply to the alternate circuit is not applicable. The proposed TS change does not affect the probability or consequences of a previously evaluated accident.

- (2) create the possibility of a new or different kind of accident from any previously analyzed.

The as-built electrical distribution system does not physically change, or change its operation, as a result of the proposed TS change. Offsite power supply automatic transfer from a normal circuit to an alternate circuit was never intended since the offsite power system normally and continuously supplies power to the ESF buses. Therefore, the proposed change will not create the possibility of a new or different accident.

- (3) involve a significant reduction in a margin of safety.

Deletion of surveillance requirement 4.8.1.1.1.b does not affect the configuration or operation of the offsite power supply system. The offsite AC power supply system, designed to provide sufficient capacity, redundancy and reliability to ensure availability of power to the ESF system, remains unchanged. The basis of the system design, "provide at least one single offsite circuit capable of powering the ESF loads," is not affected by the proposed change. The proposed change does not reduce the margin of safety.