## 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 (vital bus system), and

b. Three separate and independent diesel generators with:

1. Separate day tanks containing a minimum volume of 130 gallons of fuel, and

2. A common fuel storage system consisting of two storage tanks, each containing a minimum volume of 20,000 gallons of fuel, and two fuel transfer pumps.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With either an offsite circuit or diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.2 within one hour and at least once per 8 hours thereafter; restore at least two offsite circuits and three diesel generators 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.

b. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.2 within one hour and at least once per 8 hours thereafter; restore at least 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

* One inoperable fuel transfer pump is equivalent to one inoperable diesel generator.

ACTION (Continued)

within the following 30 hours. Restore at least two offsite circuits and three diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. #

c. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within one hour and at least once per 8 hours thereafter, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With two or more of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least two of the inoperable diesel generators 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. Restore three diesel generators to OPERABLE status within 72 hours from time of initial loss or be in least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system) shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, power availability, and

b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) vital bus supply from one 13/4 kv transformer to the other 13/4 kv transformer.

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Notes To Actions 3.8.1.1.a and 3.8.1.1.b

** Perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours prior to each entry into Action Statement 3.8.1.1.a during the Unit 1 11th refueling outage for the installation of bus connections for 500/13.8 kv Station Power Transformers (SPT's). Repeat Surveillance Requirement 4.8.1.1.2.a.2 for each diesel within 72 hours of the diesel's last successful test, unless the affected 500/13.8 kv SPT has been restored to OPERABLE status. No additional diesel testing is required during entry into Action a. for installation of the 500/13.8 kv bus connections.

*** One offsite power circuit may be inoperable for 120 hours for installation of bus connections for 500/13.8 kv SPT T3 or T4 during the Unit 1 11th refueling outage.

# 120 hours if this Action Statement is entered during installation of bus connections for 500/13.8 kv SPT T3 or T4 during the Unit 1 11th refueling outage.

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SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator 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 its day tank.

2. Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 13 seconds after the start signal.

3. Verifying the generator is synchronized, loaded to greater than or equal to 2600 kw in less than or equal to 60 seconds, and operates for greater than or equal to 60 minutes.

4. Verifying the diesel generator is aligned to provide standby power to the associated vital busses.

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 checking for and removing accumulated water fom the day tanks.

c. At least once per 18 months during shutdown by:

1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

2. Verifying that, on rejection of a load of greater than or equal to 785 kw, the voltage and frequency are restored to within 4160 ± 420 volts and 60 ± 1.2 Hz within 4 seconds.

3. Simulating a loss of offsite power by itself, and:

a) Verifying de-energization of the vital busses and load shedding from the vital busses.

b) Verifying the diesel starts on the auto-start signal, energizes the vital busses with permanently connected loads within 13 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. The steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during this test.

4. Verifying that on an ESF actuation test signal (without loss of offsite power) the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 13 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.