

3/4.8.1 A.C. SOURCESOPERATINGLIMITING 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 to the switchyard and two physically independent circuits from the switchyard to the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generator sets (Set A: DG 1-2A and DG-1C, Set B: DG-2B and DG-2C) each with:
 1. Separate day tanks containing a minimum volume of 900 gallons of fuel for the 4075 kw diesel generators and 700 gallons of fuel for the 2850 kw diesel generator.
 2. A separate fuel transfer pump for each diesel.
- c. A fuel storage system consisting of four, independent storage tanks each containing a minimum of 25,000 gallons of fuel.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With an offsite circuit 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.4 within one hour and at least once per 8*** hours thereafter; restore at least two offsite circuits 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 diesel generator set 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.4 within one hour and at least once per 8 hours* thereafter. Restore both diesel generator sets to OPERABLE status within 72* hours or comply with the following:
 - 1) Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*One inoperable fuel storage tank is equivalent to one inoperable diesel generator set.

**One time only exception for repair of Diesel 2C - the 72 hour action statement for operability of Diesel 2C may be extended to a period of 17 days provided Diesel 2C is returned to OPERABLE status as soon as maintenance is completed. The provisions of specification 3.0.4 are not applicable for this one time change.

***One time only exception during repair of Diesel 2C - the 8 hour interval test is extended to 72 hours.

- 2) One diesel generator set may be made inoperable for up to 14 days to perform scheduled maintenance and testing on diesel generators 1C (or 2C) provided all the following are satisfied:
 - a) Unit 1 is in MODE 5 or 6 and appropriate technical specifications covering the diesel generator sets are satisfied.
 - b) The remaining Unit 2 diesel generators 1-2A, 2B, 1C (or 2C) are OPERABLE.
 - c) The service water system is recirculated to the pond and surveillance requirement 4.7.6.2.1 is verified prior to removing 1C (or 2C) from service and once per 8 hours thereafter.
 - d) Diesel Generator 1C (or 2C) is returned to OPERABLE status as soon as maintenance is completed.

Otherwise, 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 diesel generator set 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.4 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 within the following 30 hours. Restore at least two offsite circuits and both diesel generator sets 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.
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of both diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 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 both 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.

*One time only exception for repair of Diesel 2C - the 72 hour action statement for operability of Diesel 2C may be extended to a period of 17 days provided Diesel 2C is returned to OPERABLE status as soon as maintenance is completed. The provisions of specification 3.0.4 are not applicable for this one time change

**One time only exception during repair of Diesel 2C - the 8 hour interval test is extended to 72 hours.

ELECTRICAL POWER SYSTEMS

ACTION: (Continued)

- e. With both of the above required diesel generator sets inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.a within 1 hour and at least once per 8 hours* thereafter; restore at least one of the inoperable diesel generator sets 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 both diesel generator sets 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 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring unit power supply from the normal circuit to the alternate circuit.

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 the day tank,
 2. Verifying the fuel level in the fuel storage tanks,
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank,
 4. Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm, for the 2850 kw generator and 514 rpm for the 4075 kw generators, in less than or equal to 10 seconds. The generator voltage and frequency shall be ≥ 3952 volts and ≥ 57 Hz within 10 seconds after the start signal.
 5. Verifying the generator is synchronized, loaded to greater than or equal to its continuous rating, and operates for greater than or equal 60 minutes,

* - One time only exception for repair of Diesel 2C - 72 hour action statement for operability of Diesel 2C may be extended to a period of 17 days provided Diesel 2C is returned to OPERABLE status as soon as maintenance is completed. The provisions of specification 3.0.4 are not applicable for this one time change.

** - One time only exception during repair of Diesel 2C - the 8 hour interval test is extended to 72 hours.

*** - One time only exception for repair of Diesel 1C during the current refueling outage of Unit 1 - the 2 hour action statement for operability of the diesel set which contains Diesel 1C may be extended to a period of 8 days (coincident with the return to operable status of Diesel 1C as provided in Section 3.8.1.1.b.2) of Unit 2 Technical Specifications.) The provisions of specification 3.0.4 are not applicable for this one time change.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.
- c. At least once per 18 months 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 the capability to reject a load of greater than or equal to the largest single load associated with that diesel generator, while maintaining voltage between 3120 and 4910 volts and speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint and verifying recovery to 4160 ± 420 volts and 60 ± 1.2 Hz within 2 seconds.
 3. Verifying the generator capability to reject a load equal to its continuous rating without tripping. The generator voltage shall not exceed 120% during and following the load rejection.
 4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 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. After energization of all 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.
5. Verifying that on an Safety Injection 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 ≥ 3952 volts and > 57 Hz within 10 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained between 4160 ± 420 volts and 60 ± 1.2 Hz during this test.

ATTACHMENT II
SAFETY EVALUATION FOR CHANGE
TO THE A.C. SOURCES - OPERATION
TECHNICAL SPECIFICATION

I. BACKGROUND

On September 27, 1981, at 9:05 A.M. while performing surveillance tests on diesel generator 2C, it was determined that jacket cooling water had been introduced into the cylinders. At this time, diesel generator 2C was declared inoperable and the applicable ACTION statement was invoked. Investigations reveal that an excess of the time allowed by the ACTION statement will be required to return diesel generator 2C to OPERABLE status.

II. REFERENCE

Technical Specification 3.8.1.1.b for Unit 2.

III. BASES

A. Introduction

The onsite emergency ac power supply for Units 1 and 2 consists of five diesel generators which supply standby power for 4160V emergency service buses F, G, H, J, K, and L of each unit. These buses provide power to the emergency loads.

The emergency loads are divided between the emergency buses of each unit in two balanced, redundant load groups so that the failure of a redundant group does not prevent the safe shutdown of both reactors.

The 4160V emergency buses, F, H and K of each unit and their associated loads are designated as the redundant load group Train A.

The 4160V emergency buses G, J and L of each unit and their associated loads are designated as the redundant load group Train B.

Diesel generators 1-2A and 1C are assigned to the redundant load group Train A, while diesel generators 1B, 2B and 2C are assigned to the redundant load group Train B.

Diesel generator 1B is uniquely assigned to Unit 1, while diesel generator 2B is uniquely assigned to Unit 2. Diesel generators 1-2A, 1C and 2C are shared between the two units. See FSAR Figure 8-3.3.

The capacity of the diesel generators ensures that sufficient power will be available to provide for the functioning of required emergency loads during the worst loading situations.

With Unit 1 in cold shutdown, diesel generator 1-2A is aligned to Unit 2 and can supply both Unit 2 Train A LOCA and loss of power loads. Diesel generators 1B and 2B will supply the Train B LOCA and loss of power loads for Units 1 and 2 respectively.

The only cases to be considered, since Unit 1 is in cold shutdown and is not scheduled to be returned to power until January 1982, is loss of site power for Units 1 and 2 coincident with a pond dam failure and loss of site power for both units coincident with a LOCA on Unit 2. For the first case, six river water pumps can be powered from available diesels and are sufficient to reach and maintain cold shutdown. For the second case, diesels 1-2A and 2B are available to supply the required emergency loads for Unit 2. In addition, diesel 1B is available to supply the Train B loads for Unit 1. Unit 1 has been in cold shutdown for approximately two weeks; therefore, the required emergency loads are reduced since the decay heat load has been significantly reduced.

In addition, Alabama Power Company proposes to demonstrate the operability of the remaining A.C. sources by performing surveillance requirements of Section 4.8.1.1.2.a.4 within one hour and at least once per 72 hours rather than within one hour and at least once per 8 hours thereafter. Due to expected time required to repair diesel generator 2C, approximately 90 starts on the remaining diesels would be required by Specification 4.8.1.1.2.a.4. The diesel manufacturer does not recommend the testing frequency required during the period required to repair diesel generator 2C due to potential accelerated wear. In addition, all transmission lines feeding the Farley Nuclear Plant switchyard are currently operable with no interruption scheduled during this repair. Currently diesel 1C is undergoing a maintenance outage as allowed by Unit 2 Technical Specification Section 3.8.1.1.b.2.

During the time period of this Technical Specification, the frequency of testing of the three remaining diesels will be modified to be performed on a staggered basis. To implement the staggered testing, plant procedures will be modified to ensure that operators are aware of such conditions while diesel 2C is being repaired. SROs and Shift Technical Advisors will be briefed of such conditions.

Based on a risk assessment performed by the NRC on July 8, 1981, the probability of core meltdown during a similar technical specification extension would be approximately 3×10^{-5} . Based on the extension period and the improved diesel reliability, such probability would be significantly lessened.

IV. CONCLUSION

The proposed change to Technical Specification 3.8.1.1 does not involve an unreviewed safety question as defined by 10CFR50.59.

This one time Technical Specification change however will not significantly affect the safe operation of the Farley Nuclear Plant Unit 2.