

ATTACHMENT A

NPF-38-158

9409190067 940909
PDR ADDCK 05000382
P PDR

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verify the other properties specified in Table 1 of ASTM-D975-1977 and Regulatory Guide 1.137, Revision 1, October 1979, Position 2.a., when tested in accordance with ASTM-D975-1977; analysis shall be completed within 14 days after obtaining the sample but may be performed after the addition of new fuel oil. Failure to meet this requirement shall not affect diesel generator OPERABILITY; however, corrective action shall be initiated within 72 hours to return the fuel oil supply to within acceptable limits.

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

1. Verifying the generator capability to reject a load of greater than or equal to 498 kW (HPSI pump) while maintaining voltage at 4160 ± 420 , -240 volts and frequency at 60 ± 4.5 , -1.2 Hz.
2. Verifying the generator capability to reject a load of 4400 kW without tripping. The generator voltage shall not exceed 5023 volts during and following the load rejection.
3. Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization 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 after the auto-start signal, 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, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 , -240 volts and 60 ± 1.2 , -0.3 Hz during this test.
4. Verifying that on an SIAS 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 steady-state generator voltage and frequency shall be 4160 ± 420 , -240 volts and 60 ± 1.2 Hz within 10 seconds after the auto-start signal; the generator voltage and frequency shall be maintained within these limits during this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

5. Simulating a loss-of-offsite power in conjunction with an SIAS actuation test signal, and
 - a) Verifying deenergization 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 after the auto-start signal, energizes the auto-connected emergency loads through the load sequencer and operates for greater than or equal to 5 minutes. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at $4160 \pm 420, -240$ volts and $60 \pm 1.2, -0.3$ Hz during this test.
 - c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a safety injection actuation signal.
6. Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 4700 to 4900 Kw* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 4200 to 4400 Kw.* The generator voltage and frequency shall be $4160 \pm 420, -240$ volts and 60 ± 1.2 Hz within 10 seconds after the start signal; the steady-state generator voltage and frequency shall be 4160 ± 420 volts and $60 \pm 1.2, -0.3$ Hz during this test. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.3b.**
7. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 4400 kw.

*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variation due to changing bus loads shall not invalidate the test.

**If Surveillance Requirement 4.8.1.1.2d.3b is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at an indicated 4200-4400 kw* for 1 hour or until internal operating temperatures have stabilized.

ATTACHMENT B

NPF-38-158

3. Verify the other properties specified in Table 1 of ASTM-D975-1977 and Regulatory Guide 1.137, Revision 1, October 1979, Position 2.a., when tested in accordance with ASTM-D975-1977; analysis shall be completed within 14 days after obtaining the sample but may be performed after the addition of new fuel oil. Failure to meet this requirement shall not affect diesel generator OPERABILITY; however, corrective action shall be initiated within 72 hours to return the fuel oil supply to within acceptable limits.
- d. At least once per 18 months during shutdown by:
 1. Verifying the generator capability to reject a load of greater than or equal to 498 kW (HPSI pump) while maintaining voltage at $4160 + 420, -240$ volts and frequency at $60 + 4.5, -1.2$ Hz.
 2. Verifying the generator capability to reject a load of 4400 kW without tripping. The generator voltage shall not exceed 5023 volts during and following the load rejection.
 3. Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization of the emergency busses and loadshedding from the emergency busses. # SEE NOTE
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds after the auto-start signal, 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, the steady-state voltage and frequency of the emergency busses shall be maintained at $4160 + 420, -240$ and $60 + 1.2, -0.3$ Hz during this test. # SEE NOTE
 4. Verifying that on an SIAS 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 steady-state generator voltage and frequency shall be $4160 + 420, -240$ volts and 60 ± 1.2 Hz within 10 seconds after the auto-start signal; the generator voltage and frequency shall be maintained within these limits during this test.

5. Simulating a loss-of-offsite power in conjunction with an SIAS actuation test signal, and
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses. # SEE NOTE
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds after the auto-start signal, energizes the auto-connected emergency loads through the load sequencer and operates for greater than or equal to 5 minutes. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at $4160 + 420$, - 240 volts and $60 + 1.2$, -0.3 Hz during this test. # SEE NOTE
 - c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a safety injection actuation signal.
6. Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 4700 to 4900 Kw* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 4700 to 4900 Kw.* The generator voltage and frequency shall be 4160 420 volts and 60 1.2 Hz within 10 seconds after the start signal; the steady-state generator voltage and frequency shall be $4160 + 420$, - 240 volts and $60 + 1.2$, -0.3 Hz during this test. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.3b.**
7. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 4400 kW.

NOTE:

UNTIL STARTUP FOLLOWING REFUEL 7 In lieu of the prescribed integrated tests (i.e., actual demonstration of shedding, connection, and loading of loads) testing and analysis that shows the capability of the diesel generator to perform these functions will be considered acceptable for train AB A.C. ESF busses. This provision will apply to the associated train AB ESF loads with the exception of Motor Control Center 3AB311-S that has been verified acceptable via analysis. The testing will include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variation due to changing bus loads shall not invalidate the test.

**If Surveillance Requirement 4.8.1.1.2d.3b is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at an indicated 4200-4400 kw* for 1 hour or until internal operating temperatures have stabilized.