SURVEILLANCE REQUIREMENTS (Continued)

10. Verifying that with the diesel generator operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by (1) returning the diesel generator to standby operation, and (2) automatically energizes the emergency loads with offsite power.

11. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the engine-mounted day tank of each diesel via the installed cross connection lines.

12. Verifying that each diesel generator loading sequence timer shown in Table 4.8.1.1.2-2 is OPERABLE with its setpoint within ± 10% of its design setpoint.

13. Verifying that the following diesel generator lockout features prevent diesel generator starting and/or operation only when required:

    a) Engine overspeed.
    b) Generator differential.
    c) Engine low lube oil pressure.

e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously, during shutdown, and verifying that all diesel generators accelerate to at least 600 rpm in less than or equal to 10 seconds.

f. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite or equivalent solution, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section XI Article IWD-5000.

SEE INSERT A ← 4.8.1.1.3

4.8.1.1.4 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests, on a per nuclear unit basis, is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

INSERT A

4.8.1.1.3 Diesel generator E when not aligned to the Class IE System shall be domonstrated OPERABLE by:

a. Verifying in accordance with the frequency specified in Table 4.8.1.1.2-1:

1. The fuel level in the engine-mounted day fuel tank.

2. The fuel level in the fuel storage tank.

3. The fuel transfer pump starts and transfers fuel from the storage system to the engine-mounted day fuel tank.

4.* The diesel manually starts from ambient condition and accelerates to at least 600 rpm in less than or equal to 10 seconds. The generator voltage and frequency are 4160 ± 400 volts and 60 ± 3.0 Hz within 10 seconds after the start signal.

5.* The diesel generator is synchronized, loaded to greater than or equal to 4000 kw in less than or equal to 90 seconds, and operates with this load for at least 60 minutes.

6. The pressure in the diesel generator air start receivers to be greater than or equal to 240 psig.

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 from the engine-mounted day fuel tanks.

c. Verifying at least once per 92 days and from new fuel oil prior to addition to the storage tanks that a sample obtained in accordance with ASTM-D270-1975 has a water and sediment content of less than or equal to .05 volume percent and a kinematic viscosity @ 40°C of greater than or equal to 1.3 but less than or equal to 2.4 for 1D oil or 1.9 but 4.1 for 2D oil when tested in accordance with ASTM-D975-77, and an impurity level of less than 2 mg. of insolubles per 100 ml. when tested in accordance with ASTM-D2274-70.

d. Verifying at least once per 18 months if Specification 4.8.1.1.2.d has not been performed:

1. An inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service is performed.

2.* The diesel generators capability to reject a load of greater than or equal to 1425 kw while maintaining voltage at 4160 ± 400 volts and frequency at 60 ± 3.0 Hz.

3.* The diesel generators capability to reject a load of 4000 kw without tripping. The generator voltage shall not exceed 4560 volts during and following the load rejection.

4.* The diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 4700 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to 4000 kW. The generator voltage and frequency shall be 4160 ± 400 volts and 60 ± 3.0 Hz within 10 seconds after the start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.

5. The following diesel generator lockout features do not prevent diesel generator starting and/or operation when not required:

   a) Engine overspeed.
   b) Generator differential.
   c) Engine low lube oil pressure.

6. Either:

   a) On a rotational basis substitute diesel generator E for diesel generator A, B, C or D and

      i) Simulate a loss of offsite power by itself, and:

         a) Verify deenergization of the emergency bus and load shedding from the emergency bus

         b) Verify diesel generator E starts on the auto-start signal, energizes the emergency bus with permanently connected loads within 10 seconds 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 bus shall be maintained at 4160 ± 400 volts and 60 ± 3.0 Hz during this test, and

      ii) Verify that on an ECCS actuation test signal, without loss of off-site power, diesel generator E 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 ± 400 volts and 60 ± 3.0 Hz within 10 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test, and

      iii) Simulate a loss-of-offsite power in conjunction with an ECCS actuation test signal, and

         a) verify deenergization of the emergency bus and load shedding from the emergency bus.

b) verify diesel generator E starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected loads through the load timers and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 400 volts and 60 ± 3.0 Hz during this test.

c) Verify that all automatic diesel generator trips, except engine overspeed, generator differential and engine low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus concurrent with an ECCS actuation signal, and

iv) Verify the diesel generator E's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status, and

v) Verify that with diesel generator E operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by (1) returning diesel generator E to standby operation, and (2) automatically energizes the emergency loads with offsite power, or

b) On a test facility

i) Simulate a loss-of-offsite power by itself and verify diesel generator E starts on the auto-start signal, energizes the simulated emergency bus with simulated permanently connected loads within 10 seconds and operates for greater than or equal to 5 minutes while its generator is loaded with the simulated shutdown loads. After energization, the steady state voltage and frequency of the simulated emergency bus are maintained at 4160 ± 400 volts and 60 ± 3.0 Hz during this test and

ii) Simulate an ECCS actuation test signal, without loss of offsite power and verify that diesel generator E 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 ± 400 volts and 60 ± 3.0 Hz within 10 seconds after the auto-start signal, the steady state generator voltage and frequency shall be maintained within these limits during this test,

and

iii) Simulate a loss-of-offsite power in conjunction with an ECCS actuation test signal and verify diesel generator E starts on the auto-start signal, energizes the simulated emergency bus with simulated permanently connected loads within 10 seconds, energizes the simulated auto-connected loads and operates for greater than or equal to 5 minutes while its generator is loaded with the simulated emergency loads. After energization, the steady state voltage and frequency of the simulated emergency bus are maintained at 4160 ± 400 volts and 60 ± 3.0 Hz during this test, and

a) Verify that all automatic diesel generator trips, except engine overspeed, generator differential and engine low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus concurrent with an ECCS actuation signal, and

iv) On a rotational basis, substitute diesel generator E for diesel generator A, B, C or D and verify diesel generator E energizes the appropriate emergency bus, and

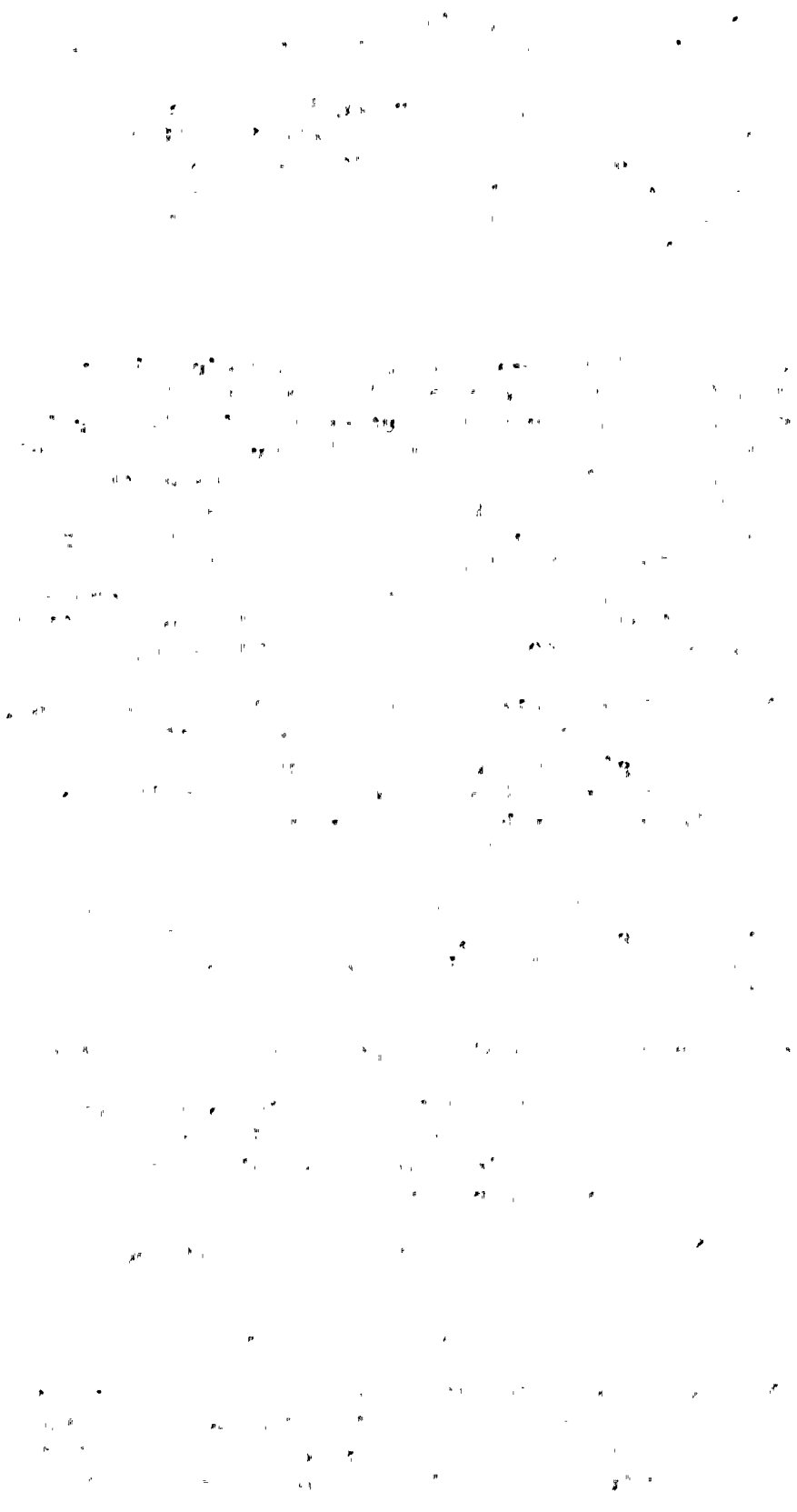
a) (**) Verify the diesel generator E's capability to:

1) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

2) Transfer its loads to the offsite power source, and

3) Be restored to standby status, and

b) Verify that with diesel generator E operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by (1) returning the diesel generator to standby



operation and (2) automatically energizes the emergency loads with offsite power.

e. Verifying that once per 10 years if Specification 4.8.1.1.2f has not been performed:

1. The fuel oil storage tank has been drained, removing the accumulated sediment and cleaned using a sodium hypochlorite or equivalent solution, and

2. A pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section II Article IWD-5000 has been performed.

* These tests may be conducted utilizing the test facility.

** Test not required to be performed during initial startup of diesel generator E.

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