

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE-----            This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.            -----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal except:</p> <ul style="list-style-type: none"> <li>a. Engine overspeed;</li> <li>b. Generator differential current; and</li> <li>c. Low lube oil pressure;</li> </ul>	<p>18 months</p>
<p>SR 3.8.1.13 -----NOTES-----</p> <ul style="list-style-type: none"> <li>1. Momentary transients outside the kW and kVAR load ranges do not invalidate this test.</li> <li>2. Credit may be taken for unplanned events that satisfy this SR.</li> </ul> <p>-----</p> <p>Verify each DG operates for <math>\geq 24</math> hours while maintaining voltage <math>\leq 4330</math> V:</p> <ul style="list-style-type: none"> <li>a. For <math>\geq 2</math> hours loaded <math>\geq 6900</math> kW and <math>\leq 7700</math> kW and operating as close as practicable to 3390 kVAR; and</li> <li>b. For the remaining hours of the test loaded <math>\geq 6500</math> kW and <math>\leq 7000</math> kW and operating as close as practicable to 3390 kVAR.</li> </ul>	<p>24 months</p>

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**BASES**

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SR 3.8.1.12 (continued)

2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

SR 3.8.1.13

This Surveillance Requirement demonstrates that the DGs can start and run continuously at loads in excess of the maximum expected loading for an interval of not less than 24 hours,  $\geq 2$  hours of which is at a load equivalent to  $\geq 105\%$  of the maximum expected loading and the remainder of the time at a load equivalent to the maximum expected loading of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a kVAR load as close as practicable to 3390 kVAR while loaded  $\geq 6500$  kW and maintaining voltage  $\leq 4330$  V. This kVAR load is chosen to be representative of the actual design basis inductive loading that the DG would experience. The voltage limit of 4330 V is required to prevent operation of any loads at or above the maximum design voltage. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The 24 month Frequency allows SR 3.8.1.13 to be scheduled following a teardown inspection. The teardown inspections are performed at 24 month intervals in accordance with manufacturer recommendations. The 24 month Frequency is consistent with the regulatory guidance of Generic Letter 91-04 (Ref. 12).

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SR 3.8.1.13 (continued)

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary kVAR load transients above the limit will not invalidate the test. Note 2 acknowledges that credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available.

SR 3.8.1.14

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within 11.4 seconds. The 11.4 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot

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SR 3.8.1.18 (continued)

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available; and
2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

SR 3.8.1.19

This surveillance demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from its associated storage tank to the other train's associated day tank via installed crossconnect lines. This capability is required to support continuous operation of standby power sources. This surveillance provides assurance that the fuel oil transfer pump is OPERABLE and the fuel oil transfer crossconnect piping is intact and not obstructed. The Frequency of every 18 months is adequate to verify the crossconnect piping is intact and the system is capable of supplying fuel oil to the other train's day tank. This Frequency takes into consideration the additional monthly testing required of each fuel oil transfer system train to automatically supply its own day tank and the passive nature of the crossconnect piping.

SR 3.8.1.20

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

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### SURVEILLANCE REQUIREMENTS

#### SR 3.8.1.20 (continued)

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

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### REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
  2. FSAR, Chapter 8.
  3. Regulatory Guide 1.9, Rev. 3, July 1993.
  4. FSAR, Chapter 6.
  5. FSAR, Chapter 15.
  6. Regulatory Guide 1.93, Rev. 0, December 1974.
  7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.
  8. 10 CFR 50, Appendix A, GDC 18.
  9. Regulatory Guide 1.108, Rev. 1, August 1977.
  10. Regulatory Guide 1.137, Rev. 1, October 1979.
  11. IEEE Standard 308-1978.
  12. Generic Letter 91-04, "Changes in Technical Specification Intervals to Accommodate a 24-Month Fuel Cycle," April 2, 1991.
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