

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.1.1 Verify correct breaker alignment and indicated power availability for each required offsite circuit.	7 days
SR 3.8.1.2 -----NOTES----- 1. Performance of SR 3.8.1.7 satisfies this SR. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified DG start involving gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. ----- Verify each DG starts from standby conditions and achieves: a. For DG 1A and DG 1B, steady state voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. b. For DG 1C: 1. Maximum of 5400 V, and 66.75 Hz, and 2. Steady state voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. <p>-----</p> <p>Verify each DG operates for ≥ 60 minutes at a load ≥ 3000 kW and ≤ 3100 kW for DG 1A and DG 1B, and ≥ 2500 kW and ≤ 2600 kW for DG 1C.</p>	<p>31 days</p>
<p>SR 3.8.1.4 Verify each day tank contains ≥ 316.3 gal of fuel oil.</p>	<p>31 days</p>
<p>SR 3.8.1.5 Check for and remove accumulated water from each day tank.</p>	<p>31 days</p>
<p>SR 3.8.1.6 Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank.</p>	<p>31 days</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.7 -----NOTE----- All DG starts may be preceded by an engine prelube period. -----</p> <p>Verify each DG starts from standby conditions and achieves:</p> <p>a. For DG 1A and DG 1B, steady state voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz, in ≤ 10 seconds.</p> <p>b. For DG 1C:</p> <p>1. Maximum of 5400 V, and 66.75 Hz, and</p> <p>2. Steady state voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz, in ≤ 13 seconds.</p>	<p>184 days</p>
<p>SR 3.8.1.8 -----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 manual transfer of unit power supply from the normal offsite circuit to required alternate offsite circuit.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.9 -----NOTES-----</p> <p>1. 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>2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9.</p> <p>-----</p> <p>Verify each DG rejects a load greater than or equal to its associated single largest post accident load and following load rejection, the engine speed is maintained less than nominal plus 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is lower.</p>	<p>18 months</p>
<p> SR 3.8.1.10 -----NOTE-----</p> <p>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>-----</p> <p>Verify each DG operating at a power factor ≤ 0.9 does not trip and voltage is maintained ≤ 4784 V for DG 1A and DG 1B and ≤ 5400 V for DG 1C during and following a load rejection of a load ≥ 3030 kW and ≤ 3130 kW for DGs 1A and 1B and ≥ 2500 kW and ≤ 2600 kW for DG 1C.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions I and II; and c. DG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 10 seconds for DG 1A and DG 1B and ≤ 13 seconds for DG 1C, 2. energizes auto-connected shutdown loads. 3. maintains steady state voltage ≥ 3740 V and ≤ 4580 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes. 	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.12 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. 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> <p>Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> a. For DG 1C during the auto-start maintains voltage ≤ 5400 V and frequency ≤ 66.75 Hz; b. In ≤ 10 seconds for DG 1A and DG 1B and ≤ 13 seconds for DG 1C after auto-start and during tests, achieves voltage ≥ 3740 V and ≤ 4580 V; c. In ≤ 10 seconds for DG 1A and DG 1B and ≤ 13 seconds for DG 1C after auto-start and during tests, achieves frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and d. Operates for ≥ 5 minutes. 	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.13 -----NOTE----- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----- Verify each DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except:</p> <ul style="list-style-type: none"> a. Engine overspeed; and b. Generator differential current. 	<p>18 months</p>
<p> SR 3.8.1.14 -----NOTES----- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. ----- Verify each DG operating at a power factor ≤ 0.9, operates for ≥ 24 hours:</p> <ul style="list-style-type: none"> a. For DG 1A and DG 1B loaded ≥ 3030 kW and ≤ 3130 kW; and b. For DG 1C: <ul style="list-style-type: none"> 1. For ≥ 2 hours loaded ≥ 2750 kW and ≤ 2850 kW, and 2. For the remaining hours of the test loaded ≥ 2500 kW and ≤ 2600 kW. 	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.15 -----NOTES-----</p> <p>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated \geq 1 hour loaded \geq 3000 kW and \leq 3100 kW for DG 1A and DG 1B, and \geq 2500 kW and \leq 2600 for DG 1C, or operating temperatures have stabilized, which ever is longer.</p> <p> Momentary transients outside of the load range do not invalidate this test.</p> <p>2. All DG starts may be preceded by an engine prelube period.</p> <p>-----</p> <p>Verify each DG starts and achieves, in \leq 10 seconds for DG 1A and DG 1B and \leq 13 seconds for DG 1C, voltage \geq 3740 V and \leq 4580 V and frequency \geq 58.8 Hz and \leq 61.2 Hz.</p>	<p>18 months</p>
<p> SR 3.8.1.16 -----NOTE-----</p> <p>This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each DG:</p> <p>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</p> <p>b. Transfers loads to offsite power source; and</p> <p>c. Returns to ready-to-load operation.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.17 -----NOTE----- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by:</p> <ul style="list-style-type: none"> a. Returning DG to ready-to-load operation; and b. Automatically energizing the emergency loads from offsite power. 	<p>18 months</p>
<p> SR 3.8.1.18 -----NOTE----- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ----- Verify sequence time is within $\pm 10\%$ of design for each load sequencer timer.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.19 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. <p>-----</p> <p>Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ol style="list-style-type: none"> a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions I and II; and c. DG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 10 seconds for DG 1A and DG 1B and ≤ 13 seconds for DG 1C. 2. energizes auto-connected emergency loads. 3. achieves steady state voltage ≥ 3740 V and ≤ 4580 V. 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes. 	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p> SR 3.8.1.20 -----NOTE----- All DG starts may be preceded by an engine prelube period. -----</p> <p>Verify, when started simultaneously from standby condition, each DG achieves, in ≤ 10 seconds for DG 1A and DG 1B and ≤ 13 seconds for DG 1C, voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.</p>	<p>10 years</p>

SURVEILLANCE REQUIREMENTS

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<p>SR 3.8.2.1 -----NOTE----- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19. -----</p> <p>For AC sources required to be OPERABLE, the following SRs are applicable:</p> <table border="0"> <tr> <td>SR 3.8.1.1</td> <td>SR 3.8.1.7</td> <td>SR 3.8.1.14</td> </tr> <tr> <td>SR 3.8.1.2</td> <td>SR 3.8.1.9</td> <td>SR 3.8.1.15</td> </tr> <tr> <td>SR 3.8.1.3</td> <td>SR 3.8.1.10</td> <td>SR 3.8.1.16</td> </tr> <tr> <td>SR 3.8.1.4</td> <td>SR 3.8.1.11</td> <td>SR 3.8.1.18</td> </tr> <tr> <td>SR 3.8.1.5</td> <td>SR 3.8.1.12</td> <td>SR 3.8.1.19</td> </tr> <tr> <td>SR 3.8.1.6</td> <td>SR 3.8.1.13</td> <td></td> </tr> </table>	SR 3.8.1.1	SR 3.8.1.7	SR 3.8.1.14	SR 3.8.1.2	SR 3.8.1.9	SR 3.8.1.15	SR 3.8.1.3	SR 3.8.1.10	SR 3.8.1.16	SR 3.8.1.4	SR 3.8.1.11	SR 3.8.1.18	SR 3.8.1.5	SR 3.8.1.12	SR 3.8.1.19	SR 3.8.1.6	SR 3.8.1.13		<p>In accordance with applicable SRs</p>
SR 3.8.1.1	SR 3.8.1.7	SR 3.8.1.14																	
SR 3.8.1.2	SR 3.8.1.9	SR 3.8.1.15																	
SR 3.8.1.3	SR 3.8.1.10	SR 3.8.1.16																	
SR 3.8.1.4	SR 3.8.1.11	SR 3.8.1.18																	
SR 3.8.1.5	SR 3.8.1.12	SR 3.8.1.19																	
SR 3.8.1.6	SR 3.8.1.13																		