

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and  
 When the associated diesel generator is required to be  
 OPERABLE by LCO 3.8.2, "AC Sources—Shutdown."

ACTIONS

-----NOTE-----  
 Separate Condition entry is allowed for each channel.  
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| CONDITION  | REQUIRED ACTION  | COMPLETION TIME |
|--|--|-----------------|
| A. One or more required channels inoperable for reasons other than Condition B.  | A.1 Enter the Condition referenced in Table 3.3.8.1-1 for the channel. | Immediately     |
| B. One or more required channels associated with Unit 1 4.16 kV ESS Buses in one Division inoperable for the performance of Unit 1 SR 3.8.1.19 | B.1 Restore the inoperable channels                                    | 8 hours         |
| C. As required by Required Action A.1 and referenced in Table 3.3.8.1-1.   | C.1 Place channel in trip.   | 1 hour          |

(continued)

**ACTIONS (continued)**

| CONDITION  | REQUIRED ACTION  | COMPLETION TIME |
|--|--|-----------------|
| D. As required by Required Action A.1 and referenced in Table 3.3.8.1-1.           | D.1 Restore the inoperable Channel.                      | 1 hour          |
| E. Required Action and associated Completion Time of Condition B, C, or D not met. | E.1 Declare associated diesel generator (DG) inoperable. | Immediately     |

**SURVEILLANCE REQUIREMENTS**

-----NOTES-----

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.
  2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains DG initiation capability.
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| SURVEILLANCE                                       | FREQUENCY |
|--|-----------|
| SR 3.3.8.1.1 Perform CHANNEL CHECK.                | 12 hours  |
| SR 3.3.8.1.2 Perform CHANNEL FUNCTIONAL TEST.      | 31 days   |
| SR 3.3.8.1.3 Perform CHANNEL CALIBRATION.          | 24 months |
| SR 3.3.8.1.4 Perform LOGIC SYSTEM FUNCTIONAL TEST. | 24 months |

Table 3.3.8.1-1 (page 1 of 1)  
 Loss of Power Instrumentation

| FUNCTION  | REQUIRED CHANNELS PER BUS | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS                                    | ALLOWABLE VALUE                               |
|---|---------------------------|--|--|---|
| <b>1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage &lt; 20%)</b>         |                           |  |  |   |
| a. Bus Undervoltage   | 1                         | D  | SR 3.3.8.1.3<br>SR 3.3.8.1.4                                 | ≥ 780.4V<br>and ≤<br>899.6V                   |
| b. Time Delay   | 1                         | D  | SR 3.3.8.1.3<br>SR 3.3.8.1.4                                 | ≥ 0.4sec<br>and<br>≤ 0.6 sec                  |
| <b>2. 4.16 kV Emergency Bus Undervoltage Low Setting (Degraded Voltage 65%)</b> |                           |  |  |   |
| a. Bus Undervoltage   | 2                         | C  | SR 3.3.8.1.1<br>SR 3.3.8.1.2<br>SR 3.3.8.1.3<br>SR 3.3.8.1.4 | ≥ 2503V<br>and<br>≤ 2886V                     |
| b. Time Delay   | 1                         | D  | SR 3.3.8.1.2<br>SR 3.3.8.1.3<br>SR 3.3.8.1.4                 | ≥ 2.7sec<br>and<br>≤ 3.3sec                   |
| <b>3. 4.16 kV Emergency Bus Undervoltage LOCA (Degraded Voltage 93%)</b>        |                           |  |  |   |
| a. Bus Undervoltage   | 2                         | C  | SR 3.3.8.1.1<br>SR 3.3.8.1.2<br>SR 3.3.8.1.3<br>SR 3.3.8.1.4 | ≥ 3801V<br>and<br>≤ 3935V                     |
| b. Time Delay (LOCA)  | 1                         | D  | SR 3.3.8.1.3<br>SR 3.3.8.1.4                                 | ≥ 9 sec<br>and<br>≤ 11 sec                    |
| c. Time Delay (Non LOCA)  | 1                         | D  | SR 3.3.8.1.2<br>SR 3.3.8.1.3<br>SR 3.3.8.1.4                 | ≥ 4 min<br>30 sec<br>and<br>≤ 5 min<br>30 sec |

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems—Operating

LCO 3.8.7 The electrical power distribution subsystems in Table 3.8.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

| CONDITION  | REQUIRED ACTION  | COMPLETION TIME  |
|--|--|--|
| <p>A. -----NOTE-----<br/>           Not applicable to DG E DC Bus 0D597<br/>           -----</p> <p>One or more Unit 2 AC electrical power distribution subsystems inoperable.</p> | <p>-----Note-----<br/>           Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC source(s) made inoperable by inoperable power distribution subsystem(s).<br/>           -----</p> <p>A.1 Restore Unit 2 AC electrical power distribution subsystem(s) to OPERABLE status.</p> | <p>8 hours</p> <p><u>AND</u></p> <p>16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F or G</p> |
| <p>B. -----NOTE-----<br/>           Not applicable to DG E DC Bus 0D597<br/>           -----</p> <p>One or more Unit 2 DC electrical power distribution subsystems inoperable.</p> | <p>B.1 Restore Unit 2 DC electrical power distribution subsystem(s) to OPERABLE status.</p>  | <p>2 hours</p> <p><u>AND</u></p> <p>16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F or G</p> |
| <p>C. One Unit 1 AC electrical power distribution subsystem inoperable.</p>  | <p>C.1 Restore Unit 1 AC electrical power distribution subsystem to OPERABLE status.</p>   | <p>72 hours</p>  |

(continued)

ACTIONS (continued)

| CONDITION   | REQUIRED ACTION   | COMPLETION TIME |
|---|---|-----------------|
| D. Two Unit 1 AC electrical power distribution subsystems on one Division inoperable for performance of Unit 1 SR 3.8.1.19. | D.1 Restore at least one Unit 1 AC electrical power distribution subsystems to OPERABLE status. | 8 hours         |
| E. Required Action and Associated Completion Time of Condition A, B or C not met.   | E.1 Be in MODE 3.<br><u>AND</u>   | 12 hours        |
|   | E.2 Be in MODE 4.   | 36 hours        |
| F. Diesel Generator E DC electrical power subsystem inoperable, while not aligned to the Class 1E distribution system.      | F.1 Verify that all ESW valves associated with Diesel Generator E are closed.                   | 2 hours         |
| G. Diesel Generator E DC electrical power subsystem inoperable, while aligned to the Class 1E distribution system.          | G.1 Declare Diesel Generator E inoperable.  | 2 hours         |
| H. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.                | H.1 Enter LCO 3.0.3.  | Immediately     |

(continued)

