

2.5 Electrical Power

2.5.1 Class 1E Emergency Power Supply System

1.0 Description

The emergency power supply system (EPSS) provides electrical power for systems that are essential to reactor shutdown, containment isolation and heat removal, reactor core cooling, and preventing a significant release of radioactive material to the environment. The EPSS distributes power to safety-related and non-safety-related plant loads during normal and abnormal operations.

EPSS divisions are independent and physically separated during normal bus alignments. An alternate feed is provided between EPSS divisions 1 and 2, and between divisions 3 and 4 to provide the normal and standby source of power to required safety systems, safety support systems, or components that do not have the required redundancy when certain electrical components, including emergency diesel generators, are out of service. With an alternate feed installed, independence is maintained between the EPSS divisions with the alternate feed installed and the divisions without an alternate feed installed. The divisions without the alternate feed installed are independent of each other.

2.0 Arrangement

2.1 The functional arrangement of EPSS equipment is shown on Figure 2.5.1-1—Class 1E Emergency Power Supply System Functional Arrangement.

2.2 Equipment identified as Class 1E in Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design are located as listed in Table 2.5.1-1—Class 1E Emergency Power Supply System Electrical Equipment Location.

2.3 There are four EPSS divisions.

2.4 Equipment identified as Class 1E in Table 2.5.1-2 and located in a Safeguard Building as listed in Table 2.5.1-1 are located above elevation 0' 0".

3.0 Mechanical Design Features, Electrical and Seismic Classifications

3.1 Equipment listed as Class 1E in Table 2.5.1-2 are qualified as Seismic Category I and can withstand seismic design basis loads without loss of safety function.

4.0 I&C Design Features, Alarms, Displays and Controls

4.1 Displays listed in Table 2.5.1-2 are retrievable in the main control room (MCR) and remote shutdown station (RSS) as listed in Table 2.5.1-2.

4.2 EPSS equipment controls are provided in the MCR and RSS as listed in Table 2.5.1-2.

5.0 Electrical Considerations

5.1 Physical separation exists between EPSS Class 1E equipment listed in Table 2.5.1-2 and non-Class 1E equipment.

- 5.2 Non-safety-related loads connected to the EPSS are electrically isolated from the EPSS by an isolation device.
- 5.3 Without the alternate feed installed, independence is maintained between the four EPSS divisions.
- 5.4 With the alternate feed installed from EPSS division 1 to division 2; independence is maintained between the load group created by divisions 1 and 2, and divisions 3 and 4. EPSS divisions 3 and 4 are independent of each other.
- 5.5 With the alternate feed installed from EPSS division 2 to division 1; independence is maintained between the load group created by divisions 1 and 2, and divisions 3 and 4. EPSS divisions 3 and 4 are independent of each other.
- 5.6 With the alternate feed installed from EPSS division 3 to division 4; independence is maintained between the load group created by divisions 3 and 4, and divisions 1 and 2. EPSS divisions 1 and 2 are independent of each other.
- 5.7 With the alternate feed installed from EPSS division 4 to division 3; independence is maintained between the load group created by divisions 3 and 4, and divisions 1 and 2. EPSS divisions 1 and 2 are independent of each other.
- 5.8 Control power for EPSS switchgear and load centers listed in Table 2.5.1-2 is provided by the Class 1E emergency uninterruptible power supply (EUPS) system from the respective division.
- 5.9 Deleted.
- 5.10 Deleted.
- 5.11 EPSS switchgear, load centers, motor control centers (MCC), and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breakers are sized to supply their load requirements.
- 5.12 EPSS cables and buses are sized to supply their assigned load requirements.
- 5.13 EPSS interrupting devices (e.g., circuit breakers and fuses) are coordinated so that the circuit interrupting device closest to the fault open before other devices.
- 5.14 EPSS switchgear, load centers, MCCs, and transformers listed in Table 2.5.1-2 are rated to withstand fault currents for the time required to clear the fault from its power source.
- 5.15 The feeder and load circuit breakers for EPSS switchgear, load centers and MCCs are rated to interrupt fault currents.
- 6.0 Equipment and System Performance**
- 6.1 Each EPSS division has an assigned EDG that provides power if there is a loss of offsite power.
- 6.2 Each EPSS 6.9 kV switchgear offsite power supply circuit breaker is opened by a protection system LOOP signal.

-
- 6.3 The EPSS provides voltage at the supplied safety-related equipment during normal and accident conditions that exceed the minimum required operating voltage of that equipment.
- 6.4 EPSS loads are sequentially energized by the protection system during loss of offsite power (LOOP) or loss of coolant accident (LOCA) conditions.
- 6.5 Each EPSS division has a normal and alternate offsite power supply circuit connection.
- 6.6 EPSS loads that are sequenced by the protection system are shed by the protection system in an undervoltage condition prior to load sequencing.

7.0 Inspection, Tests, Analyses and Acceptance Criteria

Table 2.5.1-3 lists the EPSS ITAAC.

Table 2.5.1-1—Class 1E Emergency Power Supply Electrical Equipment Location (3 Sheets)

Description	Tag Number ⁽¹⁾	Location
6.9 kV Switchgear	31BDA	Division 1 Safeguard Building
6.9 kV Switchgear	32BDA	Division 2 Safeguard Building
6.9 kV Switchgear	33BDA	Division 3 Safeguard Building
6.9 kV Switchgear	34BDA	Division 4 Safeguard Building
6.9 kV Switchgear	31BDB	Division 1 Safeguard Building
6.9 kV Switchgear	32BDB	Division 2 Safeguard Building
6.9 kV Switchgear	33BDB	Division 3 Safeguard Building
6.9 kV Switchgear	34BDB	Division 4 Safeguard Building
6.9 kV Switchgear	31BDC	Division 1 Safeguard Building
6.9 kV Switchgear	34BDC	Division 4 Safeguard Building
6.9 kV Switchgear	31BDD	Division 1 ESW Pump Building
6.9 kV Switchgear	32BDD	Division 2 ESW Pump Building
6.9 kV Switchgear	33BDD	Division 3 ESW Pump Building
6.9 kV Switchgear	34BDD	Division 4 ESW Pump Building
480V Load Center	31BMB	Division 1 Safeguard Building
480V Load Center	32BMB	Division 2 Safeguard Building
480V Load Center	33BMB	Division 3 Safeguard Building
480V Load Center	34BMB	Division 4 Safeguard Building
480V Load Center	31BMC	Division 1 Safeguard Building
480V Load Center	34BMC	Division 4 Safeguard Building
480V Load Center	31BMD	Division 1 ESW Pump Building
480V Load Center	32BMD	Division 2 ESW Pump Building
480V Load Center	33BMD	Division 3 ESW Pump Building
480V Load Center	34BMD	Division 4 ESW Pump Building
480V MCC	31BNA01	Division 1 EDG Building
480V MCC	32BNA01	Division 2 EDG Building
480V MCC	33BNA01	Division 3 EDG Building
480V MCC	34BNA01	Division 4 EDG Building
480V MCC	32BNA02	Division 2 Safeguard Building
480V MCC	33BNA02	Division 3 Safeguard Building
480V MCC	31BNB01	Division 1 Safeguard Building
480V MCC	32BNB01	Division 2 Safeguard Building
480V MCC	33BNB01	Division 3 Safeguard Building

Table 2.5.1-1—Class 1E Emergency Power Supply Electrical Equipment Location (3 Sheets)

Description	Tag Number ⁽¹⁾	Location
480V MCC	34BNB01	Division 4 Safeguard Building
480V MCC	31BNB02	Division 1 Safeguard Building
480V MCC	32BNB02	Division 2 Safeguard Building
480V MCC	33BNB02	Division 3 Safeguard Building
480V MCC	34BNB02	Division 4 Safeguard Building
480V MCC	31BNB03	Division 1 Safeguard Building
480V MCC	32BNB03	Division 2 Safeguard Building
480V MCC	33BNB03	Division 3 Safeguard Building
480V MCC	34BNB03	Division 4 Safeguard Building
480V MCC	31BNC01	Division 1 Safeguard Building
480V MCC	34BNC01	Division 4 Safeguard Building
480V MCC	31BND01	Division 1 ESW Pump Building
480V MCC	32BND01	Division 2 ESW Pump Building
480V MCC	33BND01	Division 3 ESW Pump Building
480V MCC	34BND01	Division 4 ESW Pump Building
Transformer	31BMT01	Division 1 EDG Building
Transformer	32BMT01	Division 2 EDG Building
Transformer	33BMT01	Division 3 EDG Building
Transformer	34BMT01	Division 4 EDG Building
Transformer	31BMT02	Division 1 Safeguard Building
Transformer	32BMT02	Division 2 Safeguard Building
Transformer	33BMT02	Division 3 Safeguard Building
Transformer	34BMT02	Division 4 Safeguard Building
Transformer	31BMT03	Division 1 Safeguard Building
Transformer	32BMT03	Division 2 Safeguard Building
Transformer	33BMT03	Division 3 Safeguard Building
Transformer	34BMT03	Division 4 Safeguard Building
Transformer	31BMT04	Division 1 ESW Pump Building
Transformer	32BMT04	Division 2 ESW Pump Building
Transformer	33BMT04	Division 3 ESW Pump Building
Transformer	34BMT04	Division 4 ESW Pump Building
Transformer	31BNT01	Division 1 Safeguard Building
Transformer	32BNT01	Division 2 Safeguard Building

**Table 2.5.1-1—Class 1E Emergency Power Supply Electrical
Equipment Location (3 Sheets)**

Description	Tag Number ⁽¹⁾	Location
Transformer	33BNT01	Division 3 Safeguard Building
Transformer	34BNT01	Division 4 Safeguard Building

1) Equipment tag numbers are provided for information only and are not part of the certified design.

**Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design
(5 Sheets)**

Description	Tag Number ⁽¹⁾	IEEE Class 1E	MCR / RSS Displays	MCR / RSS Controls
6.9 kV Switchgear	31BDA	Yes	Bus Voltage / Bus Voltage	Incoming Source Breaker Open-Close / Incoming Source Breaker Open-Close
6.9 kV Switchgear	32BDA	Yes	Bus Voltage / Bus Voltage	Incoming Source Breaker Open-Close / Incoming Source Breaker Open-Close
6.9 kV Switchgear	33BDA	Yes	Bus Voltage / Bus Voltage	Incoming Source Breaker Open-Close / Incoming Source Breaker Open-Close
6.9 kV Switchgear	34BDA	Yes	Bus Voltage / Bus Voltage	Incoming Source Breaker Open-Close / Incoming Source Breaker Open-Close
6.9 kV Switchgear	31BDB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	32BDB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	33BDB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	34BDB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	31BDC	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	34BDC	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	31BDD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	32BDD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close

**Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design
(5 Sheets)**

Description	Tag Number ⁽¹⁾	IEEE Class 1E	MCR / RSS Displays	MCR / RSS Controls
6.9 kV Switchgear	33BDD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
6.9 kV Switchgear	34BDD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	31BMB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	32BMB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	33BMB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	34BMB	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	31BMC	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	34BMC	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	31BMD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	32BMD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	33BMD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V Load Center	34BMD	Yes	Bus Voltage / Bus Voltage	Feeder Breaker Open-Close / Feeder Breaker Open-Close
480V MCC	31BNA01	Yes	N/A / N/A	N/A / N/A

**Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design
(5 Sheets)**

Description	Tag Number ⁽¹⁾	IEEE Class 1E	MCR / RSS Displays	MCR / RSS Controls
480V MCC	32BNA01	Yes	N/A / N/A	N/A / N/A
480V MCC	33BNA01	Yes	N/A / N/A	N/A / N/A
480V MCC	34BNA01	Yes	N/A / N/A	N/A / N/A
480V MCC	32BNA02	Yes	N/A / N/A	N/A / N/A
480V MCC	33BNA02	Yes	N/A / N/A	N/A / N/A
480V MCC	31BNB01	Yes	N/A / N/A	N/A / N/A
480V MCC	32BNB01	Yes	N/A / N/A	N/A / N/A
480V MCC	33BNB01	Yes	N/A / N/A	N/A / N/A
480V MCC	34BNB01	Yes	N/A / N/A	N/A / N/A
480V MCC	31BNB02	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	32BNB02	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	33BNB02	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	34BNB02	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	31BNB03	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	32BNB03	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	33BNB03	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	34BNB03	Yes	Bus Voltage / Bus Voltage	N/A / N/A
480V MCC	31BNC01	Yes	N/A / N/A	N/A / N/A
480V MCC	34BNC01	Yes	N/A / N/A	N/A / N/A
480V MCC	31BND01	Yes	N/A / N/A	N/A / N/A
480V MCC	32BND01	Yes	N/A / N/A	N/A / N/A
480V MCC	33BND01	Yes	N/A / N/A	N/A / N/A

**Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design
(5 Sheets)**

Description	Tag Number ⁽¹⁾	IEEE Class 1E	MCR / RSS Displays	MCR / RSS Controls
480V MCC	34BND01	Yes	N/A / N/A	N/A / N/A
Transformer	31BMT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	32BMT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	33BMT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	34BMT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	31BMT02	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	32BMT02	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	33BMT02	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	34BMT02	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	31BMT03	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	32BMT03	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	33BMT03	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	34BMT03	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close

**Table 2.5.1-2—Class 1E Emergency Power Supply System Electrical Equipment Design
(5 Sheets)**

Description	Tag Number ⁽¹⁾	IEEE Class 1E	MCR / RSS Displays	MCR / RSS Controls
Transformer	31BMT04	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	32BMT04	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	33BMT04	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Transformer	34BMT04	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Voltage Regulating Transformer	31BNT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Voltage Regulating Transformer	32BNT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Voltage Regulating Transformer	33BNT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close
Voltage Regulating Transformer	34BNT01	Yes	N/A / N/A	Feeder Breaker Open-Close / Feeder Breaker Open-Close

1) Equipment tag numbers are provided for information only and are not part of the certified design.

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the EPSS is as shown on Figure 2.5.1-1.	An inspection of the as-built system will be performed.	The as-built EPSS conforms to the functional arrangement as shown on Figure 2.5.1-1.
2.2	Equipment identified as Class 1E in Table 2.5.1-2 is located as listed in Table 2.5.1-1.	An inspection will be performed.	The equipment listed as Class 1E in Table 2.5.1-2 is located as listed in Table 2.5.1-1.
2.3	There are four EPSS divisions.	An inspection will be performed.	The EPSS four divisions are configured as shown in Figure 2.5.1-1.
2.4	Equipment identified as Class 1E in Table 2.5.1-2 and located in a Safeguard Building as listed in Table 2.5.1-1 are located above elevation 0' 0".	An inspection will be performed.	Equipment identified as Class 1E in Table 2.5.1-2 and located in a Safeguard Building as listed in Table 2.5.1-1 are located above elevation 0' 0".
3.1	Equipment listed as Class 1E in Table 2.5.1-2 are qualified as Seismic Category I and can withstand seismic design basis loads without loss of safety function.	<p>a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment listed as Class 1E in Table 2.5.1-2 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.</p> <p>b. Inspections will be performed of the as-built Class 1E equipment listed in Table 2.5.1-2 to verify that the equipment including anchorage is installed as specified on the construction drawings.</p>	<p>a. Tests/analysis reports exist and conclude that the equipment listed as Class 1E in Table 2.5.1-2 can withstand seismic design basis loads without loss of safety function.</p> <p>b. Inspection reports exist and conclude that the as-built Class 1E equipment listed in Table 2.5.1-2 including anchorage is installed as specified on the construction drawings.</p>
4.1	Displays listed in Table 2.5.1-2 are retrievable in the MCR and RSS as listed in Table 2.5.1-2.	Tests will be performed.	<p>a. Displays listed in Table 2.5.1-2 as being retrieved in the MCR can be retrieved in the MCR.</p> <p>b. Displays listed in Table 2.5.1-2 as being retrieved in the RSS can be retrieved in the RSS.</p>

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.2	EPSS equipment controls are provided in the MCR and RSS as listed in Table 2.5.1-2.	A test will be performed.	<ul style="list-style-type: none"> a. Controls listed in Table 2.5.1-2 as being in the MCR exist in the MCR. b. Controls listed in Table 2.5.1-2 as being in the RSS exist in the RSS.
5.1	Physical separation exists between EPSS Class 1E equipment listed in Table 2.5.1-2 and non-Class 1E equipment.	An inspection will be performed.	The EPSS Class 1E equipment listed in Table 2.5.1-2 is separated from non-Class 1E equipment by at least 3 feet horizontally and at least 5 feet vertically.
5.2	Non-safety-related loads connected to the EPSS are electrically isolated from the EPSS by an isolation device.	<ul style="list-style-type: none"> a. Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed. b. An inspection will be performed. 	<ul style="list-style-type: none"> a. The isolation devices used between the EPSS and non-safety-related loads provide electrical isolation. b. An inspection report exists and concludes there is an electrical isolation device between non-safety-related loads connected to the EPSS, and the EPSS.
5.3	Without an alternate feed installed, independence is maintained between the four EPSS divisions.	Testing will be performed by providing a test signal in each EPSS division, one division at a time.	Without an alternate feed installed, the test signal exists only in the EPSS division under test when a test signal is applied in each EPSS division.
5.4	With the alternate feed installed from EPSS division 1 to division 2; independence is maintained between the load group created by divisions 1 and 2, and divisions 3 and 4. EPSS divisions 3 and 4 are independent of each other.	Testing will be performed by providing a test signal in each EPSS division; one division at a time while the alternate feed is installed from EPSS division 1 to division 2.	<ul style="list-style-type: none"> a. A test signal exists only in the load group created by Class 1E divisions 1 and 2 when the test signal is provided in Class 1E division 1 or 2. b. A test signal exists only in the division under test when the test signal is provided in Class 1E division 3 or 4.

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.5	With the alternate feed installed from EPSS division 2 to division 1; independence is maintained between the load group created by divisions 1 and 2, and divisions 3 and 4. EPSS divisions 3 and 4 are independent of each other.	Testing will be performed by providing a test signal in each EPSS division; one division at a time while the alternate feed is installed from EPSS division 2 to division 1.	<ul style="list-style-type: none"> a. A test signal exists only in the load group created by Class 1E divisions 1 and 2 when the test signal is provided in Class 1E division 1 or 2. b. A test signal exists only in the division under test when the test signal is provided in Class 1E division 3 or 4.
5.6	With the alternate feed installed from EPSS division 3 to division 4; independence is maintained between the load group created by divisions 3 and 4, and divisions 1 and 2. EPSS divisions 1 and 2 are independent of each other.	Testing will be performed by providing a test signal in each EPSS division; one division at a time while the alternate feed is installed from EPSS division 3 to division 4.	<ul style="list-style-type: none"> a. A test signal exists only in the load group created by Class 1E divisions 3 and 4 when the test signal is provided in Class 1E division 3 or 4. b. A test signal exists only in the division under test when the test signal is provided in Class 1E division 1 or 2.
5.7	With the alternate feed installed from EPSS division 4 to division 3; independence is maintained between the load group created by divisions 3 and 4, and divisions 1 and 2. EPSS divisions 1 and 2 are independent of each other.	Testing will be performed by providing a test signal in each EPSS division; one division at a time while the alternate feed is installed from EPSS division 4 to division 3.	<ul style="list-style-type: none"> a. A test signal exists only in the load group created by Class 1E divisions 3 and 4 when the test signal is provided in Class 1E division 3 or 4. b. A test signal exists only in the division under test when the test signal is provided in Class 1E division 1 or 2.
5.8	Control power for EPSS switchgear and load centers listed in Table 2.5.1-2 is provided by the EUPS system from the respective division.	Tests are conducted by providing a test signal in each Class 1E division separately.	A test signal exists only in the EPSS division under test for EPSS switchgear and load centers listed in Table 2.5.1-2.
5.9	Deleted.	Deleted.	Deleted.
5.10	Deleted.	Deleted.	Deleted.

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.11	EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breakers are sized to supply their load requirements.	<p>a. An analysis will be performed.</p> <p>b. An inspection will be performed.</p>	<p>a. Equipment sizing studies for the specified EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2, and their feeder breakers and load breakers, concludes their ratings are greater than their analyzed load requirements.</p> <p>b. The ratings of the installed EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breakers meet the analysis criteria.</p>
5.12	EPSS cables and buses are sized to supply their assigned load requirements.	<p>a. An analysis will be performed.</p> <p>b. An inspection will be performed.</p>	<p>a. Equipment sizing studies for the specified EPSS cables and buses concludes they are sized to supply analyzed load requirements.</p> <p>b. The ratings of the installed EPSS cables and buses meet the analysis criteria.</p>
5.13	EPSS interrupting devices (e.g., circuit breakers and fuses) are coordinated so that the circuit interrupting device closest to the fault open before other devices.	<p>a. An analysis will be performed.</p> <p>b. An inspection will be performed.</p>	<p>a. Equipment protection and coordination studies for the EPSS interrupting devices (e.g., circuit breakers and fuses) concludes they are coordinated so that the circuit interrupting device closest to the fault open before other devices.</p> <p>b. The ratings of the installed EPSS interrupting devices (e.g., circuit breakers and fuses) meet the analysis criteria.</p>

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
5.14	EPSS switchgear, load centers, MCCs, and transformers listed in Table 2.5.1-2 are rated to withstand fault currents for the time required to clear the fault from its power source.	a. An analysis will be performed. b. An inspection will be performed.	a. Short-circuit studies for the specified EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 concludes the equipment current capability is greater than the analyzed fault currents for the time required to clear the fault from its power source as determined by circuit interrupting device coordination analysis. b. The ratings of the installed EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 meet the analysis criteria.
5.15	The feeder and load circuit breakers for EPSS switchgear, load centers and MCCs are rated to interrupt fault currents.	a. An analysis will be performed. b. An inspection will be performed.	a. Short-circuit studies for the specified EPSS switchgear, load center, and MCC feeder and load circuit breakers, concludes the current interrupting capability is greater than the analyzed fault currents. b. The ratings of the installed EPSS switchgear, load centers, MCCs feeder and load circuit breakers meet the analysis criteria.
6.1	Each EPSS division has an assigned EDG that provides power if there is a loss of offsite power.	Tests will be performed.	Each EPSS division has an assigned EDG that provides power if there is a loss of offsite power.
6.2	Each EPSS 6.9 kV switchgear offsite power supply circuit breaker is opened by a protection system LOOP signal.	Tests will be performed.	Each EPSS division automatically separates from the offsite power supply on a signal from the protection system.

**Table 2.5.1-3—Class 1E Emergency Power Supply System
ITAAC (6 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
6.3	The EPSS provides voltages at the supplied safety-related equipment during normal and accident conditions that exceed the minimum required operating voltage of that equipment.	<p>a. An analysis will be performed.</p> <p>b. A test will be performed.</p>	<p>a. The analysis concludes the voltage at the supplied safety-related equipment during normal and accident conditions exceed the minimum required operating voltage of that equipment.</p> <p>b. EPSS bus voltage measurements verify analyzed safety-related terminal voltages.</p>
6.4	EPSS loads are sequentially energized by the protection system during LOOP or LOCA conditions.	<p>a. A test will be performed on each EPSS division without the alternate feed installed.</p> <p>b. A test will be performed on each EPSS division with the alternate feed installed.</p>	<p>a. EPSS loads are sequentially energized by the protection system during LOOP, LOCA, and LOOP/LOCA conditions without the alternate feed installed.</p> <p>b. EPSS loads are sequentially energized by the protection system during LOOP, LOCA and LOOP/LOCA conditions with the alternate feed installed.</p>
6.5	Each EPSS division has a normal and alternate offsite power supply circuit connection.	A test will be performed.	Each EPSS division transfers from the normal offsite circuit to the alternate offsite circuit from a simulated emergency auxiliary transformer failure signal.
6.6	EPSS loads that are sequenced by the protection system are shed by the protection system in an undervoltage condition prior to load sequencing.	A test will be performed.	EPSS loads that are sequenced by the protection system are shed by the protection system in an undervoltage condition.

[Next File](#)