3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources-Operating

LCO 3.8.4 Division 11(21) and Division 12(22) DC electrical power subsystems shall be OPERABLE and not crosstied to the opposite unit.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One battery charger inoperable.	A.1	Crosstie opposite-unit bus with associated OPERABLE battery charger to the affected division.	2 hours
	AND		
	A.2	Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND		
	A.3	Verify battery float current $\leq$ 3 amps.	Once per 12 hours
	AND		
	A.4	Restore battery charger to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

B. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem that has an inoperable battery charger, while opposite unit is in MODE 1, 2, 3, or 4.	B.1	Open at least one crosstie breaker between the crosstied divisions.	204 hours
C. One DC electrical power division crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	C.1	---------NOTE-------- Only required when opposite unit has an inoperable battery. ---------- Verify opposite-unit DC bus load ≤ 200 amps.	Once per 12 hours
	AND		
	C.2	Open at least one crosstie breaker between the crosstied divisions.	7 days
D. One DC electrical power subsystem inoperable for reasons other than Condition A, B, or C.	D.1	Restore DC electrical power subsystem to OPERABLE status.	2 hours
E. Required Action and Associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.4.2	Verify each battery charger supplies a load equal to the manufacturer's rating at greater than or equal to the minimum established float voltage for ≥ 8 hours. OR Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest coincident demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	18 months
SR 3.8.4.3	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of the service test in SR 3.8.4.3. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ---------- Verify battery capacity is adequate to supply, and maintain OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	18 months

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources-Shutdown

LCO 3.8.5 One DC electrical power subsystem shall be OPERABLE.

---NOTE---
The required DC electrical power subsystem may be crosstied to the opposite unit, when the opposite unit is in MODE 1, 2, 3, or 4 with an inoperable battery charger.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required DC electrical power subsystem inoperable for reasons other than Condition B.	A.1 Declare affected required feature(s) inoperable. OR	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
	A.2.4 Initiate action to restore required DC electrical power subsystem to OPERABLE status.	Immediately
	AND	
	A.2.5 Declare affected Low Temperature Overpressure Protection feature(s) inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required DC electrical power subsystem crosstied to opposite-unit DC electrical power subsystem with an inoperable source, while opposite unit is in MODE 5, 6, or defueled.	B.1	---------NOTE-------- Only required when opposite unit has an inoperable battery. ----------	
		Verify opposite-unit DC bus load is ≤ 200 amps.	Once per 12 hours
	AND		
	B.2	Open at least one crosstie breaker between the crosstied divisions.	7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	----------NOTE---------- The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. ----------	
	For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.2 SR 3.8.4.3	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

LCO 3.8.6 Battery parameters for Division 11(21) and Division 12(22) batteries shall be within limits.

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One battery with one or more cells with float voltage < 2.07 V.	A.1	Perform SR 3.8.4.1.	2 hours
	AND		
	A.2	Perform SR 3.8.6.1	2 hours
	AND		
	A.3	Restore affected cell float voltage to ≥ 2.07 V.	24 hours
B. One battery with float current > 3 amps.	B.1	Perform SR 3.8.4.1	2 hours
	AND		
	B.2	Restore battery float current to ≤ 3 amps.	12 hours

(continued)

ACTIONS (continued)

C. -------NOTE-------- Required Action C.2 must be completed if electrolyte level was below the top of plates. ---------- One battery with one or more cells with electrolyte level less than minimum established design limits.	----------NOTE---------- Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates. ----------		
	C.1	Restore affected cell electrolyte level to above the top of plates.	8 hours
	AND		
	C.2	Verify no evidence of leakage.	12 hours
	AND		
	C.3	Restore affected cell electrolyte level to greater than or equal to minimum established design limits.	31 days
D. One battery with pilot cell electrolyte temperature less than minimum established design limits.	D.1	Restore pilot cell electrolyte temperature to greater than or equal to minimum established design limits.	12 hours
E. Two batteries with battery parameters not within limits.	E.1	Restore battery parameters for one battery to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D or E not met. OR One battery with one or more cells with float voltage < 2.07 V and float current > 3 amps.	F.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	----------NOTE---------- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. ---------- Verify each battery float current is ≤ 3 amps.	7 days
SR 3.8.6.2	Verify each battery pilot cell float voltage is ≥ 2.07 V.	31 days
SR 3.8.6.3	Verify each battery cell electrolyte level is greater than or equal to minimum established design limits.	31 days
SR 3.8.6.4	Verify each battery pilot cell electrolyte temperature is greater than or equal to minimum established design limits.	31 days
SR 3.8.6.5	Verify each battery cell float voltage is ≥ 2.07 V.	92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.6	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ----------	
	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters-Shutdown

LCO 3.8.8 Two inverters shall be OPERABLE.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

----------NOTE----------
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required feature(s) inoperable. OR	Immediately (continued)

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

b. Air lock testing acceptance criteria are:

1. Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$; and

2. For each door, seal leakage rate is:

i. $< 0.0024\ L_a$, when pressurized to ≥ 3 psig, and

ii. $< 0.01\ L_a$, when pressurized to ≥ 10 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.17 Battery Monitoring and Maintenance Program

This program provides for restoration and maintenance, based on the recommendations of IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries For Stationary Applications," or of the battery manufacturer of the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the minimum established design limit.