

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 Three ECCS accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS pressure > 1000 psig.

-----NOTE-----
In MODE 3, with RCS pressure > 1000 psig, the accumulators may be inoperable for up to 12 hours to perform pressure isolation valve testing per SR 3.4.14.1.

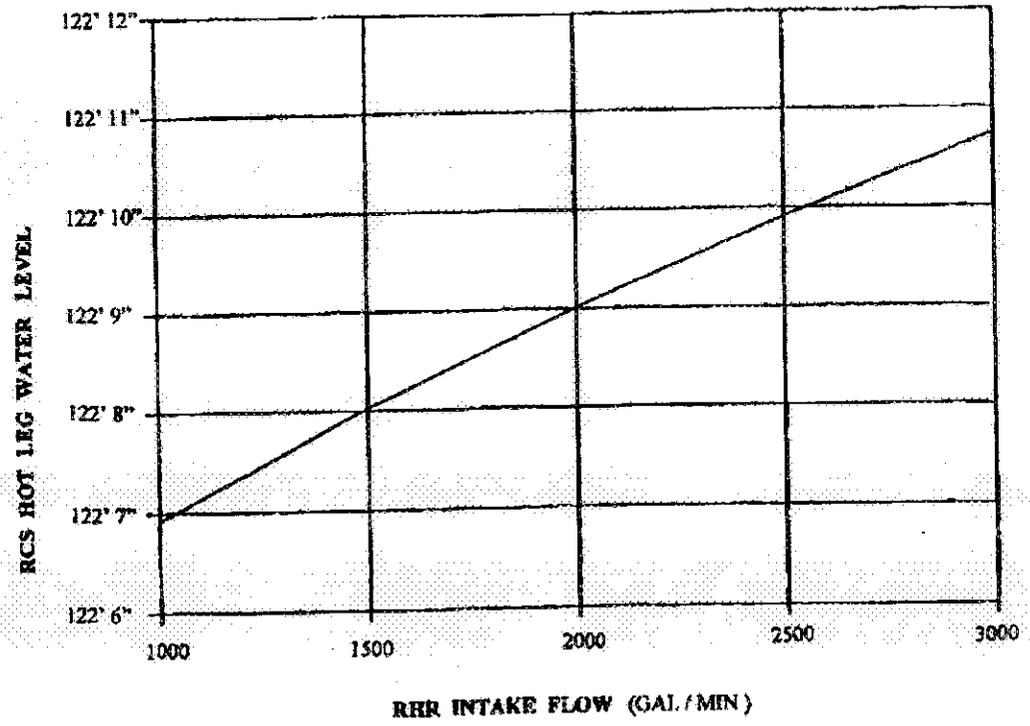
ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Reduce RCS pressure to ≤ 1000 psig.	12 hours
D. Two or more accumulators inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 7555 gallons (31.4%) and ≤ 7780 gallons (58.4%).	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 601 psig and ≤ 649 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2200 ppm and ≤ 2500 ppm.	31 days <u>AND</u> -----NOTE----- Only required to be performed for affected accumulators ----- Once within 6 hours after each solution volume increase of $\geq 12\%$ level, indicated, that is not the result of addition from the refueling water storage tank
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is ≥ 2000 psig.	31 days

FIGURE 1



3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources — Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

- a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and
- b. Two diesel generator (DG) sets capable of supplying the onsite Class 1E power distribution subsystem(s); and
- c. Automatic load sequencers for Train A and Train B.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for required OPERABLE offsite circuit.	2 hours
	<u>AND</u>	<u>AND</u>
	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	Once per 8 hours thereafter
	<u>AND</u>	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Restore required offsite circuit to OPERABLE status.	72 hours <u>AND</u> 13 days from discovery of failure to meet LCO
B. One DG set inoperable.	<p>-----NOTE----- LCO 3.0.4 is not applicable when only one of the three DGs is inoperable. -----</p> <p>B.1 Perform SR 3.8.1.1 for the required offsite circuit(s).</p> <p><u>AND</u></p> <p>B.2 Declare required feature(s) supported by the inoperable DG set inoperable when its required redundant feature(s) is inoperable.</p> <p><u>AND</u></p> <p>B.3.1 Determine OPERABLE DG set is not inoperable due to common cause failure.</p> <p><u>OR</u></p>	<p>2 hours</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p>4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)</p> <p>24 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3.2 Perform SR 3.8.1.6 for OPERABLE DG set.	24 hours
	<p><u>AND</u></p> <p>B.4 Restore DG set to OPERABLE status.</p>	<p>10 days</p> <p><u>AND</u></p> <p>13 days from discovery of failure to meet LCO</p>
C. Two required offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features
	<p><u>AND</u></p> <p>C.2 Restore one required offsite circuit to OPERABLE status.</p>	24 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. One required offsite circuit inoperable.</p> <p><u>AND</u></p> <p>One DG set inoperable.</p>	<p>-----NOTE-----</p> <p>Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems --- Operating," when Condition D is entered with no AC power source to any train.</p> <p>-----</p> <p>D.1 Restore required offsite circuit to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore DG set to OPERABLE status.</p>	<p>24 hours</p> <p>24 hours</p>
<p>E. Two DG sets inoperable.</p>	<p>E.1 Restore one DG set to OPERABLE status.</p>	<p>2 hours if all three DGs are inoperable</p> <p><u>OR</u></p> <p>8 hours if DG 1-2A and DG 1(2)B are inoperable</p> <p><u>OR</u></p> <p>24 hours if DG 1C and DG 1(2)B are inoperable</p>
<p>F. Required Action and associated Completion Time of Condition C or E not met.</p>	<p>F.1 Be in MODE 3.</p>	<p>6 hours</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One automatic load sequencer inoperable.	G.1 Restore automatic load sequencer to OPERABLE status.	12 hours
H. Required Action and associated Completion Time of Condition A, B, D, or G not met.	H.1 Be in MODE 3.	6 hours
	<u>AND</u> H.2 Be in MODE 5.	36 hours
I. Three or more required AC sources inoperable.	i.1 Enter LCO 3.0.3.	Immediately

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APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS pressure > 1000 psig.

-----NOTE-----
In MODE 3, with RCS pressure > 1000 psig, the accumulators may be inoperable for up to 12 hours to perform pressure isolation valve testing per SR 3.4.14.1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Reduce RCS pressure to ≤ 1000 psig.	12 hours
D. Two or more accumulators inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 7555 gallons (31.4%) and ≤ 7780 gallons (58.4%).	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 601 psig and ≤ 649 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2200 ppm and ≤ 2500 ppm.	31 days <u>AND</u> -----NOTE----- Only required to be performed for affected accumulators ----- Once within 6 hours after each solution volume increase of $\geq 12\%$ level, indicated, that is not the result of addition from the refueling water storage tank
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is ≥ 2000 psig.	31 days

Farley Units 1 and 2

3.5.1-2

Amendment No. 146 (Unit 1)
Amendment No. 137 (Unit 2)

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for Train A and Train B Auxiliary Building and Service Water Intake Structure (SWIS) batteries shall be within the limits of Table 3.8.6-1.

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 or more required batteries with one or more battery cell parameters not within Category A or B limits.	A.1 Verify pilot cells electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	2 hours
	<u>AND</u>	
	A.2 Verify battery cell parameters meet Table 3.8.6-1 Category C limits.	24 hours
	<u>AND</u>	Once per 7 days thereafter
	<u>AND</u>	
	A.3 Restore battery cell parameters to Category A and B limits of Table 3.8.6-1.	31 days

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>One or more required batteries with average electrolyte temperature of the representative cells < 60°F for the Auxilliary Building batteries or < 35°F for the SWIS batteries.</p> <p><u>OR</u></p> <p>One or more required batteries with one or more battery cell parameters not within Category C values.</p> <p><u>OR</u></p> <p>-----NOTE----- Battery terminal voltage of 127.8 volts as measured by SR 3.8.4.1 is equivalent to average cell float voltage of 2.13 volts per cell.</p> <p>----- One or more required batteries with the average cell float voltage ≤ 2.13 volts.</p>	<p>B.1 Declare associated battery inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.1 Verify battery cell parameters meet Table 3.8.6-1 Category A limits.</p>	<p>7 days</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	92 days <u>AND</u> Once within 7 days after a battery discharge < 110 V <u>AND</u> Once within 7 days after a battery overcharge > 150 V
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is $\geq 60^{\circ}\text{F}$ for the Auxiliary Building batteries and $\geq 35^{\circ}\text{F}$ for the SWIS batteries.	92 days

Farley Units 1 and 2

3.8.6-3

Amendment No. 146 (Unit 1)
Amendment No. 137 (Unit 2)

Table 3.8.6-1 (page 1 of 1)
Battery Cell Parameters Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark ^(a)	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark ^(a)	Above top of plates, and not overflowing
Float Voltage	≥ 2.08 V	≥ 2.08 V	> 2.02 V
Specific Gravity ^(b)	≥ 1.195 ^(c)	≥ 1.190 <u>AND</u> Average of all connected cells > 1.195	If a cell is < 1.190, then it shall not have decreased more than 0.080 from the previous 92 day test. <u>AND</u> Average of all connected cells ≥ 1.190

- (a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during equalizing charges provided it is not overflowing.
- (b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 2 amps when on float charge.
- (c) Or battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity limits.

FIGURE 1

