EOP:	TITLE:	
ECA-1.1	LOSS OF EMERGENCY COOLANT RECIRCULATION	REV: 9 PAGE 1 of 28

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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TECHNICAL REVIEW

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A. PURPOSE - This procedure provides actions to restore emergency coolant recirculation capability, to delay depletion of the RWST by adding makeup and reducing outflow, and to depressurize the RCS to minimize break flow.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from:

a. E-1, LOSS OF REACTOR OR SECONDARY COOLANT, when cold leg recirculation capability cannot be verified.

b. ES-1.3, TRANSFER TO COLD LEG RECIRCULATION, when recirculation cannot be established or maintained.

c. ECA-1.2, LOCA OUTSIDE CONTAINMENT, when a LOCA outside containment cannot be isolated.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION

- IF EMERGENCY COOLANT RECIRCULATION CAPABILITY IS RESTORED DURING THIS PROCEDURE, FURTHER RECOVERY ACTIONS SHOULD CONTINUE BY RETURNING TO PROCEDURE AND STEP IN EFFECT.
- IF SUCTION SOURCE IS LOST TO ANY SI OR CNMT SPRAY PUMP, THE PUMP SHOULD BE STOPPED.

* *

NOTE: Adverse CNMT values should be used whenever CNMT pressure is greater than 4 psig or CNMT radiation is greater than 10^{+05} R/hr.

1 Verify CNMT Sump Recirculation Capability:

a. Check RHR system:

- RHR pumps - OPERABLE
- RHR suction valves from sump B - OPERABLE
  - MOV-850A
  - MOV-850B
- RHR pump discharge to Rx vessel deluge valves - OPERABLE
  - MOV-852A
  - MOV-852B
- CCW pumps - OPERABLE
- CCW to RHR Hx - OPERABLE
  - MOV-738A
  - MOV-738B

a. Manually or locally try to restore at least one train (Refer to Attachment RHR SYSTEM to identify minimum components for one train).

b. Check at least two SW pumps - RUNNING

b. Manually start SW pumps as power supply permits (258 kw each).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

2 Add Makeup To RWST As Necessary

- o Refer to S-9J, BLENDING TO RWST

-OR-

- o Refer to S-3.2D, TRANSFERRING WATER FROM CVCS HUT(S) TO RWST OR SFP

-OR-

- o Refer to Attachment SFP-RWST

* *

CAUTION

IF CST LEVEL DECREASES TO LESS THAN 5 FEET, THEN ALTERNATE WATER SOURCES FOR AFW PUMPS WILL BE NECESSARY (REFER TO ER-AFW.1, ALTERNATE WATER SUPPLY TO AFW PUMPS).

* *

NOTE: TDAFW pump flow control valves fail open on loss of IA.

* 3 Monitor Intact S/G Levels:

a. Narrow range level - GREATER THAN 5% [25% adverse CNMT]	a. Maintain total feed flow greater than 200 gpm until narrow range level greater than 5% [25% adverse CNMT] in at least one S/G.
b. Control feed flow to maintain narrow range level between 17% [25% adverse CNMT] and 50%	b. IF narrow range level in any S/G continues to increase, THEN stop feed flow to that S/G.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: Shutdown margin should be monitored during RCS cooldown (Refer to Figure SDM).

4 Initiate RCS Cooldown To Cold Shutdown:

a. Establish and maintain cooldown rate in RCS cold legs - LESS THAN 100°F/HR

b. Dump steam to condenser from intact S/G(s)

b. Manually or locally dump steam from intact S/G(s):

- o Use S/G ARVs

-OR-

- o Open TDAFW pump steam supply valves.

-OR-

- o Dispatch AO to perform the following:

  1) Open S/G MSIV bypass valves.

  2) Open priming air ejector steam supply root valve, V-3578.

  3) Open 1A and 1B priming air ejector isolation valves.

     - V-3580
     - V-3581

IF no intact S/G available, THEN use faulted S/G.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	Verify CNMT RECIRC Fans Running: a. All fans - RUNNING b. Charcoal filter dampers green status lights - EXTINGUISHED	a. Manually start fans. b. Dispatch personnel with relay rack key to locally open dampers using trip relay pushbuttons in relay room racks. • AUX RELAY RACK RA-2 for fan A • AUX RELAY RACK RA-3 for fan C
6	Check RWST Level - GREATER THAN 15%	Go to Step 25.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

7 Determine CNMT Spray Requirements:

a. Determine number of CNMT spray pumps required from table:

RWST LEVEL	CNMT PRESSURE	CNMT RECIRC FANS RUNNING	CNMT SPRAY PUMPS REQUIRED
GREATER THAN 28%	GREATER THAN 60 PSIG	-	2
	BETWEEN 28 PSIG AND 60 PSIG	0 OR 1	2
		2 OR 3	1
		ALL	0
	LESS THAN 28 PSIG	-	0
BETWEEN 15% AND 28%	GREATER THAN 60 PSIG	-	2
	BETWEEN 28 PSIG AND 60 PSIG	0, 1, 2, OR 3	1
		ALL	0
	LESS THAN 28 PSIG	-	0
LESS THAN 15%	-	-	0

b. CNMT spray pumps running - EQUAL TO MINIMUM NUMBER REQUIRED

b. Manually operate CNMT spray pumps as necessary.

IF CNMT spray pump(s) must be stopped, THEN place switch in PULL STOP.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION

IF OFFSITE POWER IS LOST AFTER SI RESET, THEN SELECTED SW PUMPS AND ONE CCW PUMP WILL AUTO START ON EMERGENCY D/G. MANUAL ACTION WILL BE REQUIRED TO RESTART SAFEGUARDS EQUIPMENT.

* *

8 Reset SI If Necessary

9 Establish One Train Of SI Flow

a. SI pumps - LESS THAN THREE RUNNING

a. Stop one SI pump.

b. RCS pressure - LESS THAN 250 psig [465 psig adverse CNMT]

b. Stop RHR pumps and go to Step 10.

c. RHR pump - ONLY ONE RUNNING

c. IF two RHR pumps running, THEN stop one RHR pump.

IF no RHR pumps running, THEN start one RHR pump.

10 Verify No Backflow From RWST To Sump:

a. Any RHR suction valve from sump B - OPEN

- MOV-850A
- MOV-850B

a. IF both RHR suction valves from sump B closed, THEN go to Step 11.

b. RWST outlet valve to RHR pump suction (MOV-856) - CLOSED

b. Manually close valve.

IF valve can NOT be closed manually, THEN direct AO to locally close valve.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Reset CI:	
	a. Depress CI reset pushbutton	
	b. Verify annunciator A-26, "CNMT ISOLATION - EXTINGUISHED"	b. Perform the following: 1) Reset SI. 2) Depress CI reset pushbutton.
12	Verify Adequate SW Flow:	
	a. Check at least two SW pumps - RUNNING	a. Manually start SW pumps as power supply permits (258 kw each). IF less than two SW pumps running, THEN perform the following: 1) Ensure SW isolation. 2) Dispatch AO to establish normal shutdown alignment (Refer to Attachment SD-1) 3) Go to Step 15.
	b. Dispatch AO to establish normal shutdown alignment (Refer to Attachment SD-1)	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	**Establish IA to CNMT:**	
	a. Verify non-safeguards busses energized from offsite power o Bus 13 normal feed - CLOSED -OR- o Bus 15 normal feed - CLOSED	a. Perform the following: 1) Close non-safeguards bus tie breakers: • Bus 13 to Bus 14 tie • Bus 15 to Bus 16 tie 2) Verify adequate emergency D/G capacity to run air compressors (75 kw each). IF NOT, THEN evaluate if CNMT RECIRC fans should be stopped (Refer to Attachment CNMT RECIRC FANS). 3) WHEN bus 15 restored, THEN reset control room lighting.
	b. Verify SW isolation valves to turbine building - OPEN • MOV-4613 and MOV-4670 • MOV-4614 and MOV-4664	b. Manually align valves.
	c. Verify at least two air compressors - RUNNING	c. Manually start air compressors as power supply permits (75 kw each). IF air compressors can NOT be started, THEN dispatch AO to locally reset compressors as necessary.
	d. Check IA supply: o Pressure - GREATER THAN 60 PSIG o Pressure - STABLE OR INCREASING	d. Perform the following: 1) Continue attempts to restore IA (Refer to AP-IA.1, LOSS OF INSTRUMENT AIR). 2) Continue with Step 14. WHEN IA restored, THEN do Steps 13e and f.
	e. Reset both trains of XY relays for IA to CNMT AOV-5392	
	f. Verify IA to CNMT AOV-5392 - OPEN	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	Establish Required Charging Line Flow:	
	a. Charging pumps - ANY RUNNING	a. Perform the following: 1) IF CCW flow is lost to any RCP thermal barrier OR any RCP #1 seal outlet temperature offscale high, THEN dispatch AO with RWST area key to locally close seal injection needle valves to affected RCP: • RCP A, V-300A • RCP B, V-300B 2) Ensure HCV-142 demand at 0%. 3) Start one charging pump.
	b. Establish 20 gpm total charging flow	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

IF RCP SEAL COOLING HAD PREVIOUSLY BEEN LOST, THEN THE AFFECTED RCP(S) SHOULD NOT BE STARTED PRIOR TO A STATUS EVALUATION.

* *

15 Check RCP Status:

a. RCS subcooling based on core exit T/Cs - GREATER THAN 0°F USING FIGURE MIN SUBCOOLING

a. Stop all RCPs and go to Step 16.

b. RCPs - AT LEAST ONE RUNNING

b. Try to start an RCP:

1) Establish conditions for starting an RCP

- o Bus 11A or 11B energized
- o Refer to Attachment RCP START

2) Start one RCP.

c. Stop all but one RCP

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
*16	Monitor SI Termination Criteria: a. RCS subcooling based on core exit T/Cs - GREATER THAN 50°F USING FIGURE MIN SUBCOOLING b. Check RVLIS indication: o Level (no RCPs) - GREATER THAN 68% [73% adverse CNMT] -OR- o Fluid fraction (any RCP running) - GREATER THAN 80%	Limit RCS injection flow to that required to remove decay heat: o Determine required injection flow using Figure MIN RCS INJECTION o Stop SI pumps as necessary to establish and maintain minimum required SI flow. o IF required injection flow is less than 100 gpm, THEN establish required charging flow and go to Step 17. IF required injection flow is greater than 100 gpm, THEN perform the following: a. Ensure one SI pump running b. Establish minimum charging flow for RCP seal injection. c. Consult TSC to determine if SI pump discharge valves should be locally throttled. (Locked valve key required.) d. Go to Step 18.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17	Stop SI And RHR Pumps And Place In Auto	
18	Verify Adequate RCS Makeup Flow:	
	a. Check RVLIS indication: o Level (no RCPs) - GREATER THAN 68% [73% adverse CNMT] -OR- o Fluid fraction (any RCP running) - GREATER THAN 80%	a. Increase RCS injection flow as necessary to maintain RVLIS indication stable.
	b. Core exit T/Cs - STABLE OR DECREASING	b. Increase RCS injection flow to maintain core exit T/Cs stable or decreasing.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: If normal RCP support conditions can NOT be satisfied, then any running RCP(s) should be stopped.

19 Depressurize RCS To Decrease RCS Subcooling:

a. Check RCS subcooling based on core exit T/Cs - GREATER THAN 20°F USING FIGURE MIN SUBCOOLING

a. Go to Step 20.

b. Normal PRZR spray -AVAILABLE

b. Use one PRZR PORV. IF IA NOT available, THEN refer to Attachment N2 PORVS.

IF no PRZR PORV available, THEN use auxiliary spray valve (AOV-296).

c. Depressurize RCS until either of the following conditions satisfied:

- o RCS subcooling based on core exit T/Cs - LESS THAN 10°F USING FIGURE MIN SUBCOOLING

-OR-

- o PRZR level - GREATER THAN 87% [75% adverse CNMT]

d. WHEN either condition met, THEN stop RCS depressurization

e. Check RCS subcooling - GREATER THAN 0°F USING FIGURE MIN SUBCOOLING

e. Increase RCS makeup flow as necessary to restore subcooling.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
20	Check If RHR Normal Cooling Can Be Established:	
	a. RCS cold leg temperature - LESS THAN 350°F	a. Go to Step 21.
	b. RCS pressure - LESS THAN 400 psig [300 psig adverse CNMT]	b. Go to Step 21.
	c. Place letdown pressure controller (PCV-135) in MANUAL CLOSED	
	d. Check following valves - OPEN • AOV-371, letdown isolation valve • AOV-427, loop B cold leg to REGEN Hx • At least one letdown orifice valve (AOV-200A, AOV-200B, or AOV-202)	d. Perform the following: 1) Reset both trains of XY relays for AOV-371 and AOV-427. 2) Open AOV-371. 3) Place AOV-427 switch to OPEN. 4) Open one letdown orifice valve.
	e. Verify pressure on PI-135 - LESS THAN 400 PSIG	e. Go to Step 21.
	f. Place RCS overpressure protection system in service (Refer to O-7, ALIGNMENT AND OPERATION OF THE REACTOR VESSEL OVERPRESSURE PROTECTION SYSTEM)	
	g. Consult TSC to determine if RHR normal cooling should be established using Attachment RHR COOL	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
21	Check If SI ACCUMs Should Be Isolated:	
	a. Both RCS hot leg temperatures - LESS THAN 400°F	a. Continue with Step 22. WHEN both RCS hot leg temperatures less than 400°F, THEN do Steps 21b, c and d.
	b. Dispatch AO with locked valve key to locally close breakers for SI ACCUM discharge valves • MOV-841, MCC C position 12F • MOV-865, MCC D position 12C	
	c. Close SI ACCUM discharge valves • MOV-841 • MOV-865	c. Vent any unisolated ACCUMs: 1) Open vent valves for unisolated SI ACCUMs. • ACCUM A, AOV-834A • ACCUM B, AOV-834B 2) Open HCV-945.
	d. Locally reopen breakers for MOV-841 and MOV-865	
22	Check If RCPs Must Be Stopped:	
	a. RCPs - ANY RUNNING	a. Go to Step 23.
	b. Check the following:	b. Go to Step 23.
	o RCP #1 seal D/P - LESS THAN 220 PSID -OR- o Check RCP seal leakage - LESS THAN 0.25 GPM	
	c. Stop affected RCP(s)	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
23	Check Core Exit T/Cs - GREATER THAN 200°F	Go to Step 38.
24	Check RWST Level - LESS THAN 15%	Return to Step 1.
25	Minimize RWST Outflow:	
	a. Any SI pump(s) - RUNNING	a. IF charging pump suction aligned to RWST, THEN perform the following: 1) Verify SI pump suction aligned to RWST, MOV-825A or MOV-825B open. 2) Start one SI pump and verify flow. 3) Stop running charging pumps. 4) Go to Step 25e.
	b. Stop all but one SI pump	
	c. Check charging pump suction from RWST (AOV-112B) - OPEN	c. Go to Step 25e.
	d. Stop all charging pumps	
	e. Stop both CNMT spray pumps	
	f. Stop both RHR pumps	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
26	Check SI pump flow - STABLE	IF SI flow zero or erratic, THEN stop running SI pump.
27	Try To Add Makeup To RCS From VCT:	
	a. Check VCT level - GREATER THAN 5%	a. Stop charging pumps taking suction from VCT and continue with Step 28. WHEN VCT level greater than 5%, THEN do Steps 27b and c.
	b. Verify charging pumps aligned to VCT o LCV-112C - OPEN o LCV-112B - CLOSED	b. Manually align valves as necessary.
	c. Start charging pumps as necessary to establish two pumps running	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

28 Establish Maximum VCT Makeup:

a. Check RMW control armed - RED LIGHT LIT

a. Place RMW mode switch in AUTO and place RMW control switch to START.

b. Check VCT level - LESS THAN 20%

b. Continue with Step 29. WHEN VCT level less than 20%, THEN do Steps 28c, d and e.

c. Check VCT makeup system - OPERATING IN AUTO

c. Perform the following:

1) Open makeup system valves.

- AOV-110B
- AOV-110C
- AOV-111

2) Start BA transfer pumps and RMW pumps.

3) Open boric acid flow control valve (AOV-110A).

d. Increase VCT makeup flow

1) Start both RMW pumps

2) Start both boric acid pumps

3) Adjust RMW controller (HC-111) in MANUAL to maximum flow from table

BAST CONC (PPM)	MAX RMW FLOW (GPM)
7000 (4%)	40
8750 (5%)	54
10500 (6%)	65
12250 (7%)	80
14000 (8%)	92

4) Adjust boric acid flow controller (HC-110A) in MANUAL to 9.5 gpm

e. Adjust charging pump speed to stabilize VCT level

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
29	Try To Add Makeup To RCS From Alternate Source: a. Evaluate Use Of RCDT Pumps (Refer to ER-RHR.1, RCDT PUMP OPERATION FOR CORE COOLING) b. Consult TSC to determine other means of makeup	
30	Verify SI ACCUM Isolation Valves - OPEN • MOV-841 • MOV-865	IF valves were closed to prevent SI ACCUM nitrogen injection, THEN go to Step 34. IF NOT, THEN perform the following: a. Dispatch AO to locally close breakers for SI ACCUM discharge valves • MOV-841, MCC C position 12F • MOV-865, MCC D position 12C b. Open SI ACCUM discharge valves.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
31	Depressurize All Intact S/Gs To 785 PSIG:	
	a. Check S/G pressures - GREATER THAN 785 PSIG	a. Go to Step 32.
	b. Dump steam to condenser at maximum rate	b. Manually or locally dump steam at maximum rate from intact S/G(s): o Use S/G ARVs -OR- o Open steam supply valves to TDAFW pump -OR- o Dispatch AO to perform the following: 1) Open S/G MSIV bypass valves. 2) Open priming air ejector steam isolation valves • V-3580 • V-3581
	c. Check S/G pressures - LESS THAN 785 PSIG	c. Return to Step 31b.
	d. Stop S/G depressurization	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: The intent of Step 32 is to depressurize S/Gs more slowly, but at a rate that will maintain required RVLIS level.

32 Depressurize Intact S/Gs To 200 PSIG Slowly To Inject SI ACCUMs:

a. Dump steam to condenser as necessary to maintain appropriate RVLIS indication:

- o Level (no RCPs) - BETWEEN 68% AND 73% [73% AND 76% adverse CNMT]

-OR-

- o Fluid fraction (any RCP running) - BETWEEN 80% AND 90%

a. Manually or locally dump steam from intact S/G(s) to maintain appropriate RVLIS indication:

- o Use S/G ARVs

-OR-

- o Open steam supply valves to TDAFW pump

-OR-

- o Dispatch AO to perform the following:

  1) Open affected S/G MSIV bypass valve.

  2) Open priming air ejector steam isolation valves

     - V-3580
     - V-3581

b. Check S/G pressures - LESS THAN 200 PSIG

b. Return to Step 32a.

c. Stop S/G depressurization

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
33	Check If SI ACCUMs Should Be Isolated:	
	a. Both RCS hot leg temperatures - LESS THAN 400°F	a. Continue with Step 34. WHEN both RCS hot leg temperatures less than 400°F, THEN do Steps 33b, c and d.
	b. Dispatch AO with locked valve key to locally close breakers for SI ACCUM discharge valves • MOV-841, MCC C position 12F • MOV-865, MCC D position 12C	
	c. Close SI ACCUM discharge valves • MOV-841 • MOV-865	c. Vent any unisolated ACCUMs: 1) Open vent valves for unisolated SI ACCUMs. • ACCUM A, AOV-834A • ACCUM B, AOV-834B 2) Open HCV-945.
	d. Locally reopen breakers for MOV-841 and MOV-865	
34	Check If RCPs Must Be Stopped:	
	a. RCPs - ANY RUNNING	a. Go to Step 36.
	b. Check the following: o RCP #1 seal D/P - LESS THAN 220 PSID -OR- o Check RCP seal leakage - LESS THAN 0.25 GPM	b. Go to Step 36.
	c. Stop affected RCP(s)	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
35	Check SI Pump Flow - STABLE	IF SI flow zero or erratic, THEN stop running SI pump.
36	Depressurize All Intact S/Gs To Atmospheric Pressure:	
	a. Maintain cooldown rate in RCS cold legs - LESS THAN 100°F/HR	
	b. Dump steam to condenser	b. Manually or locally dump steam from intact S/G(s): o Use S/G ARVs -OR- o Open steam supply valves to TDAFW pump -OR- o Dispatch AO to perform the following: 1) Open S/G MSIV bypass valves. 2) Open priming air ejector steam isolation valves • V-3580 • V-3581

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
37	Check If RHR Normal Cooling Can Be Established:	
	a. RCS cold leg temperature - LESS THAN 350°F	a. Return to Step 35.
	b. RCS pressure - LESS THAN 400 psig [300 psig adverse CNMT]	b. Return to Step 35.
	c. Place letdown pressure controller in MANUAL CLOSED	
	d. Check following valves - OPEN • AOV-371, letdown isolation valve • AOV-427, loop B cold leg to REGEN Hx • At least one letdown orifice valve (AOV-200A, AOV-200B, or AOV-202)	d. Perform the following: 1) Reset both trains of XY relays for AOV-371 and AOV-427. 2) Open AOV-371 and AOV-427. 3) Open one letdown orifice valve.
	e. Verify pressure on PI-135 - LESS THAN 400 PSIG	e. Return to Step 36.
	f. Place RCS overpressure protection system in service (Refer to O-7, ALIGNMENT AND OPERATION OF THE REACTOR VESSEL OVERPRESSURE PROTECTION SYSTEM)	
	g. Consult TSC to determine if RHR normal cooling should be established using Attachment RHR COOL	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
38	Maintain RCS Heat Removal:	
	a. Use RHR system if in service	
	b. Dump steam to condenser from intact S/Gs	b. Manually or locally dump steam from intact S/G(s): o Use S/G ARVs -OR- o Open steam supply valves to TDAFW pump -OR- o Dispatch AO to perform the following: 1) Open S/G MSIV bypass valves. 2) Open priming air ejector steam isolation valves • V-3580 • V-3581. IF no intact S/G available and RHR system NOT in service, THEN use faulted S/G.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: This procedure should be continued while obtaining CNMT hydrogen sample in Step 39.

39 Check CNMT Hydrogen Concentration:

a. Direct HP to start CNMT hydrogen monitors as necessary

b. Hydrogen concentration - LESS THAN 0.5%

b. Consult TSC to determine if hydrogen recombiners should be placed in service.

40 Consult TSC

-END-

ECA-1.1 APPENDIX LIST

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FIGURE MIN SUBCOOLING

NOTE: Subcooling Margin = Saturation Temperature From Figure Below [-] Core Exit T/C Indication

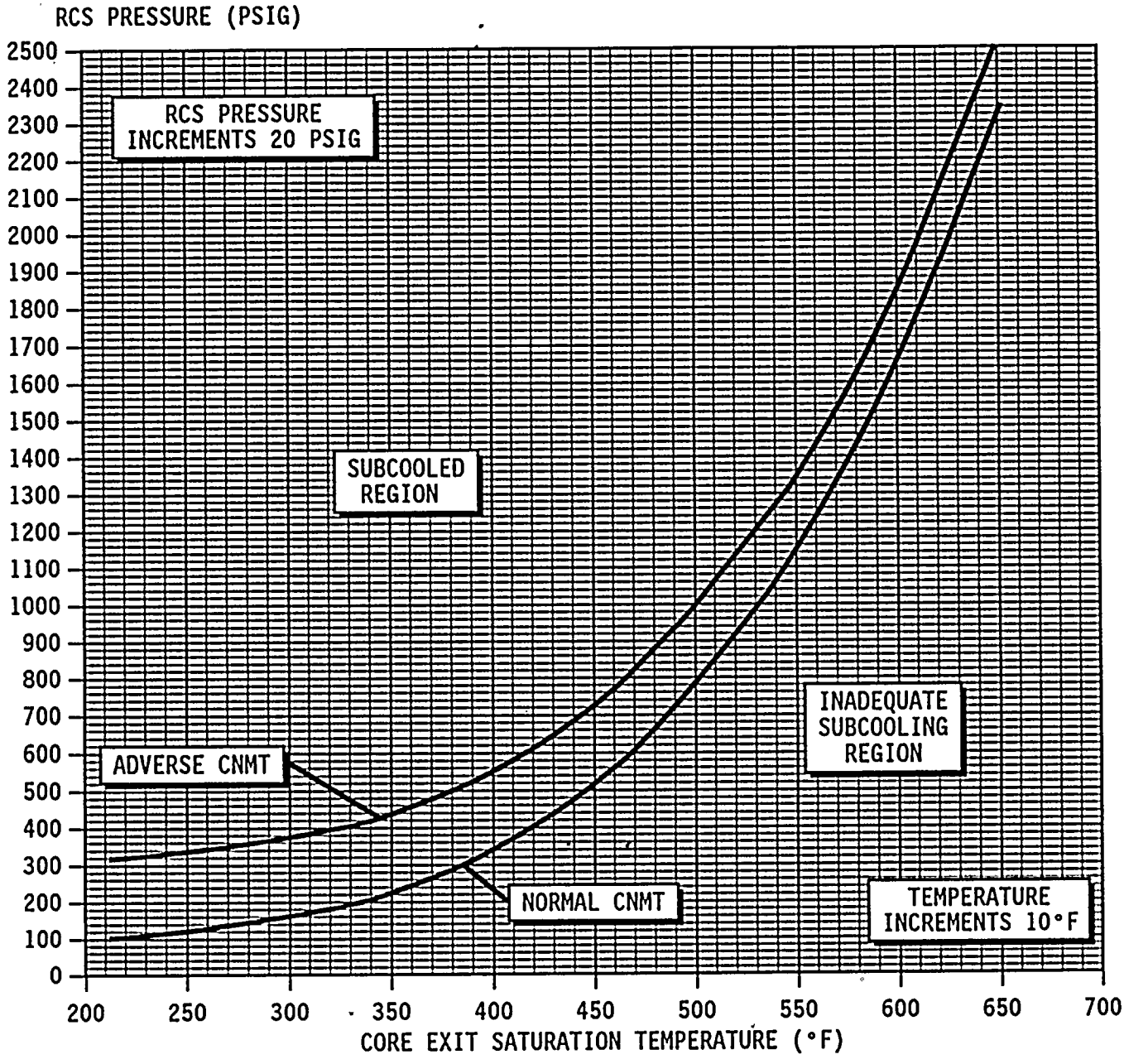

FIGURE SDM

NOTE:
- o Curve includes allowance for one stuck rod. Add 100 ppm for each additional stuck rod.
- o To obtain core burnup, use PPCS turn on code BURNUP.

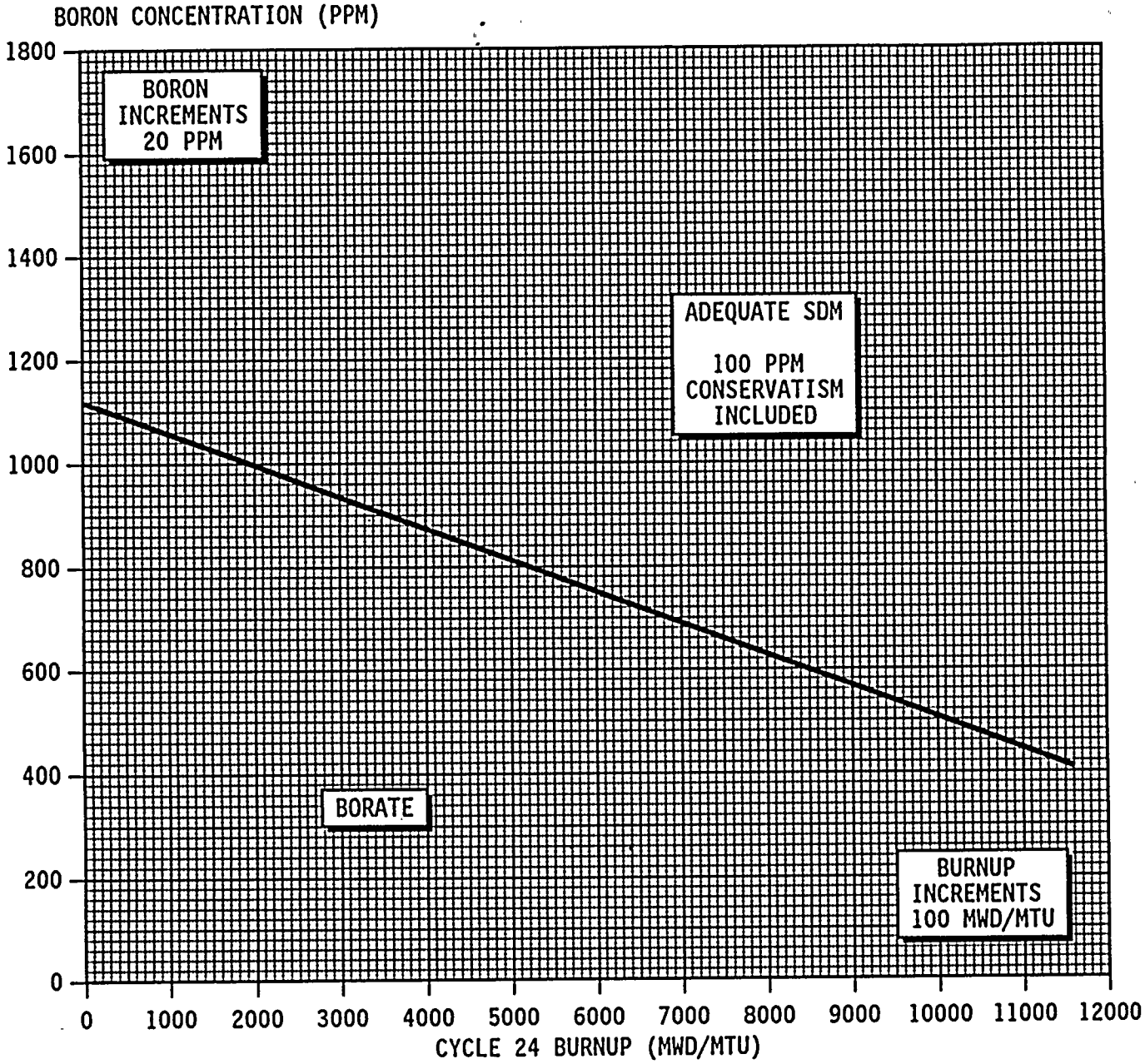

FIGURE MIN RCS INJECTION