EOP: ES-1.1	TITLE:		8	6	
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION Z CONTROLLED COPY NUMBER

TECHNICAL REVIEW

PORC REVIEW DATE 3-24-93

PLANT SUPERINTENDENT

3-26-93 EFFECTIVE DATE

CATEGORY 1.0

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REVIEWED BY:

9304080167 930330 PDR ADDCK 05000244

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ES-1	. 1	ST TERMINATION	REV: 8
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Α.	PURPO to te:	E - This procedure provides the necessary minate safety injection and stabilize pla	y instructions ant conditions.
в.	ENTRY	CONDITIONS/SYMPTOMS	
	1. E	TRY CONDITIONS - This procedure is entered	ed from:
	· a	E-0, REACTOR TRIP OR SAFETY INJECTION, E-1, LOSS OF REACTOR OR SECONDARY COOL when specified termination criteria are	and ANT, satisfied.
	b	FR-H.1, RESPONSE TO LOSS OF SECONDARY I after secondary heat sink has been rees and SI has been terminated.	HEAT SINK, stablished
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ES-1.1	SI TERMINATION .	PAGE	3 of 2	5

STEP ACTION/EXPECTED RESPONSE	E RESPONSE NOT OBTAINED
* * * * * [*] * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
IF OFFSITE POWER IS LOST AFTER S WILL AUTO START ON EMERGENCY D/G SAFEGUARDS EQUIPMENT.	I RESET, SELECTED SW PUMPS AND ONE CCW PUMP . MANUAL ACTION WILL BE REQUIRED TO RESTART
* * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
NOTE: o FOLDOUT page should be	open AND monitored periodically.
o Critical Safety Function to Appendix I for Red Pa	n Status Trees should be monitored (Refer ath Summary.
o Adverse CNMT values show greater than 4 psig or 4	uld be used whenever CNMT pressure is CNMT radiation is greater than 10 ⁺⁰⁵ R/hr.
1 Reset SI	x
2 Reset CI:	
a. Depress CI reset pushbutto	n
b. Verify annunciator A-26, C ISOLATION - EXTINGUISHED	NMT b. Perform the following:
•	1) Reset SI.
	2) Depress CI reset pushbutton.
3 Maintain PRZR Pressure Between 1800 PSIG And 2235 PSIG	r .
o Reset PRZR heaters	
o Use normal PRZR spray	*
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	TEP ACTION/EXPECTED R	ESPONSE	RESPONSE NOT OBTAINED	0
4	Verify Adequate SW I	Flow:		
	a. Check at least two S RUNNING	W pumps -	a. Manually start SW p supply permits (258	oumps as power kw each).
		`	<u>IF</u> less than two SW running, <u>THEN</u> perfo following:	l pumps orm the .
			1) Ensure SW isolat	ion.
			2) Dispatch AO to e normal shutdown (Refer to Attach	establish alignment mment SD-1).
	x	•	3) Go to Step 7.	
	b. Dispatch AO to estab shutdown alignment (Attachment SD-1)	lish normal Refer to		• • •
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ES-1.1 SI TERMI	NATION REV: 8 PAGE 5 of
<pre>STEP ACTION/EXPECTED RESPONSE 5 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</pre>	 RESPONSE NOT OBTAINED a. Perform the following: Close non-safeguards bus tie breakers: Bus 13 to Bus 14 tie Bus 15 to Bus 16 tie 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). WHEN bus 15 restored, THEN
 b. Verify SW isolation values to turbine building - OPEN MOV-4613 and MOV-4670 MOV-4614 and MOV-4664 c. Verify at least two air compressors - RUNNING 	 reset control room lighting. b. Manually align valves. c. Manually start air compressors as power supply permits (75 kw each). <u>IF</u> air compressors can NOT be started, THEN dispatch AO
 d. Check IA supply: o Pressure - GREATER THAN 60 PSIG o Pressure - STABLE OR INCREASING 	 to locally reset compressors as necessary. d. Perform the following: Continue attempts to restore IA (Refer to AP-IA.1, LOSS OF INSTRUMENT AIR). 2) Continue with Step 6. WHEN IA restored, THEN do Steps 5e and f
e. Reset both trains of XY relays for IA to CNMT AOV-5392 f. Verify IA to CNMT AOV-5392 - OPEN	and I.

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STEP ACT	ION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED	
6 Check I: Been Est	f Charging Flow Has tablished:		
a. Charg	ing pumps - ANY RUNNING	a. Perform the following	;:
		 <u>IF</u> CCW flow is los RCP thermal barrie RCP #1 seal outlet temperature offsca <u>THEN</u> dispatch AO w RWST gate to close injection needle w affected RCP: 	t to any r <u>OR</u> any le high, with key t seal valve(s) t
	,	• RCP A, V-300A • RCP B, V-300B	
		2) Ensure HCV-142 ope at 0%.	en, demand
b. Charg: RWST:	ing pump suction aligned to	b. Manually align valves necessary.	as
0 LC	7-112B - OPEN 7-112C - CLOSED	<u>IF</u> LCV-112B can <u>NOT</u> b <u>THEN</u> perform the foll	oe opened, lowing:
		. 1) Verify charging puring and place STOP.	mp A <u>NOT</u> in PULL
		2) Dispatch AO to loc manual charging pu from RWST (V-358] charging pump room	cally oper imp suction located in a).
	- «	3) <u>WHEN</u> V-358 open, <u>7</u> AO to close V-268 charging pumps B a VCT (V-268 located charging pump roor	THEN dired to isolat and C from i in).
c. Start necess flow t	charging pumps as sary and adjust charging to restore PRZR level		
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	TION/EXPECTED RESPONSE	RESPONSE NOT OBTAIN	ED
7 Stop S Place	I And RHR Pumps And In AUTO	y	
* 8 Monito Criter	r SI Reinitiation ia:		
a. RCS exit USIN	subcooling based on core T/Cs - GREATER THAN 0°F G FIGURE MIN SUBCOOLING	a. Manually operate necessary and go REACTOR OR SECOND Step 1.	SI pumps as to E-1, LOSS O ARY COOLANT,
b. PRZR [30%	level - GREATER THAN 5% adverse CNMT]	b. Control charging maintain PRZR lev	flow to el.
	•	<u>IF</u> PRZR level can maintained, <u>THEN</u> operate SI pumps and go to E-1, LO OR SECONDARY COOL	<u>NOT</u> be manually as necessary SS OF REACTOR ANT, Step 1.
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CTED A	CTION /EXPECTED DESPONSE	RESPONSE NOT OBTAINED	1
	STICK/EXFECTED RESPONSE		
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* * * * * *	· * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	к ж ж ж ж ж ж ж ж .
	<u></u>	· <u>···</u>	
ALIGNING	I PUMP SUCTION TO RWST BEFORE	ISOLATING BAST MAY RESULT	IN BACKFLOW
FROM RWST	TO BASTS.		
* * * * * *	* * * * * * * * * * * * * * *	* * * * * * * * * * * * *	* * * * * * * *
			.
9 Align	SI Pump Suction To RWST:		
· · · · · · · · ·			
a. Clos	se SI pump suction valves	a. Ensure at least one	valve in
IFOI	ADASIS:	each riow pach close	20.
• MC	DV-826A	• MOV-826A or MOV-8	26B
• MC	0V-826B	• MOV-826C or MOV-8	26D
• <u>M</u> (• M(77-826C		
- 11			
b. Oper	SI pump suction valves from	b. Ensure at least one	valve is
RWS		open.	
• MC	V-825A		
•. MC	OV-825B		
c. Opei	ate all available SI pumps		
for	5 minutes to flush pump		
RECI	RC lines		
d. WHEN	RECIRC line flush complete.		
THEN	I consult plant staff to	•	
dete	rmine if SI lines should be	£	
flus	ned using Attachment SI FLUSH		
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ST	EP	ACTION/EXPECTED RESPONSE		RESPONSE NOT OBTAINED
		•		9 1
*10	Mo: Be	nitor If CNMT Spray Should Stopped:		
	a.	CNMT spray pumps - RUNNING	4	a. Go to Step 11.
	Ъ.	Check CNMT pressure - LESS THAN 4 PSIG	1	b. Continue with Step 11. <u>WHEN</u> CNMT pressure less than 4 psig, <u>THEN</u> do Steps 10c through f.
	c.	Reset CNMT spray		
	d.	Check NaOH tank outlet valves - CLOSED	(d. Place NaOH tank outlet valve controllers to MANUAL and close
		• AOV-836A • AOV-836B		valves.
	e.	Stop CNMT spray pumps and place in AUTO		
	f.	Close CNMT spray pump discharge valves		
		 MOV-860A MOV-860B MOV-860C MOV-860D 		
		v		
		Fa:		

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STEP ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11 Verify MRPI Indicates - ALL CONTROL AND SHUTDOWN RODS ON BOTTOM	<u>IF</u> one or more control rods <u>NOT</u> fully inserted, <u>THEN</u> perform the following: a. Place RMW mode selector switch
	to BORATE. b. Adjust boric acid flow control valve, FCV-110A, for desired flowrate.
	c. Set boric acid integrator to desired amount (175 gallons for each control rod not fully inserted).
	d. Place RMW control to start and verify flow. <u>IF</u> flow can <u>NOT</u> established, <u>THEN</u> refer to ER-CVCS.1, REACTOR MAKEUP CONTROL MALFUNCTION.
12 Establish Condenser Steam Dump Pressure Control:	-
a. Verify condenser available: o Any MSIV - OPEN	a. Place S/G ARV controllers in AUTO at desired pressure and ; to Step 13.
o Annunciator G-15, STEAM DUMP ARMED - LIT	
b. Adjust condenser steam dump controller HC-484 to desired pressure and verify in AUTO.	
c. Place steam dump mode selector switch to MANUAL.	
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	÷	a)
STEP A	CTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
		, .
13 Verify CCW Hx	Adequate SW Flow To :	
a. Veri RUNN	fy at least two SW pumps - ING	a. Manually start pumps as power supply permits (258 kw each). <u>IF</u> less than two SW pumps can be operated, <u>THEN</u> go to Step 19.
b. Veri valv • MO	fy AUX BLDG SW isolation es - OPEN V-4615 and MOV-4734	 b. Establish SW to AUX BLDG (Refer to Attachment AUX BLDG SW). Continue with Step 19. <u>WHEN</u> SW restored to AUX BLDG; <u>THEN</u> do
• MO	V-4616 and MOV-4735	Steps 13c through 18.
c. Veri annu TEMP	fy CNMT RECIRC fan nciator C-2, HIGH ERATURE ALARM - EXTINGUISHED	c. Manually start an additional SW pump as power supply permits (258 kw each).
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	PAGE 12 of
	DESPONSE NOT OPTICION
TEP ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4 Check If Normal CVCS Operation Can Be Established	
a. Verify IA restored:	a. Continue with Step 19. <u>WHEN</u> IA can be restored,THEN do Steps 14 through 18
o IA pressure - GREATER THAN 60 PSIG	
b. Verify instrument bus D - ENERGIZED	b. Energize MCC B. <u>IF MCC B NOT</u> available, <u>THEN</u> perform the following:
•	1) Verify MCC A energized.
	2) Place instrument bus D on maintenance supply.
c. CCW pumps - ANY RUNNING	c. Perform the following:
	 <u>IF</u> any RCP #1 seal outlet temperature offscale high, <u>THEN</u> isolate CCW to thermal barrier of affected RCP(s).
	 RCP A, MOV-749A and MOV-759A RCP B, MOV-749B and MOV-759E
	2) Manually start one CCW pump.
d. Charging pump - ANY RUNNING	d. Continue with Step 19. <u>WHEN</u> any charging pump running, <u>THEN</u> do
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STEP ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17 Check VCT Makeup System:	
a. BAST levels - ANY GREATER THAN 5%	a. Go to Step 18.
b. Check Annunciator B-23, BORIC	b. Perform the following:
ACID TANK LO LO LEVEL - EXTINGUISHED	 Adjust boric acid flow control valve to required flow from table.
	BAST BORIC ACID
	<10% 4.5 10-15% 6.7
	>20% 10.0
	2) Go to Step 17d.
c. Adjust boric acid flow control valve in AUTO to 4.5 gpm	• • •
d. Verify the following:	d. Adjust controls as necessary.
1) RMW mode selector switch in AUTO	
2) RMW control armed - RED LIGHT LIT	
e. Check VCT level:	e. Manually increase VCT makeup flow as follows:
o Level - GREATER THAN 20%	1) Ensure BA transfer pumps an
-OR-	RMW pumps running. IF NOT, THEN dispatch AO to locally
o Level - STABLE OR INCREASING	reset MCC C and MCC D UV lockouts as necessary.
	2) Place RMW flow control valv
	HCV-111 in MANUAL and increase RMW flow.
r	 Increase boric acid flow as necessary.
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ES-1.1 SI TERMI	INATION PAGE 15
STEP ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
18 Check Charging Pump Suction Aligned To VCT:	
a. VCT level - GREATER THAN 20%	a. <u>IF</u> VCT level can <u>NOT</u> be maintained greater than 5%, <u>TH</u> perform the following:
•	1) Ensure charging pump suctio aligned to RWST
	o LCV-112B open
	o LCV-112C closed 2) Continue with Step 19. <u>WHE</u> VCT level greater than 40%, <u>THEN</u> do Step 18b.
b. Verify charging pumps aligned to VCT	b. Manually align valves as necessary.
o LCV-112C - OPEN	
o LCV-112B - CLOSED	
19 Check RCS Hot Leg Temperatures - STABLE	Control steam dump and total feed flow as necessary to stabilize RC temperature.
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STEP AC	TION/EXPECTED RESPONSE	RESPONSE NOT OF	STAINED
<u>NOTE</u> : o WH Va	EN using a PRZR PORV, THEN s lve.	elect one with an op	erable block , [.]
o If cl	auxiliary spray is in use, osing normal charging valve	spray flow may be ir AOV-294 and normal F	creased by RZR spray valves.
20 Control · Operate Stabili	PRZR Heaters And Normal Spray To ze RCS Pressure	<u>IF</u> normal spray letdown is in se the following:	<u>NOT</u> available and ervice, <u>THEN</u> perform
,		a. Verify spray ΔT less than <u>THEN</u> control PRZR PORV and	line fluid to PRZR 320°F. ' <u>IF NOT</u> , pressure using one go to Step 21.
		b. Control press spray.	sure using auxiliary
	•	<u>IF</u> auxiliary spi <u>THEN</u> use one PR2	ay <u>NOT</u> available, . NR PORV.
* * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * <u>'ION</u>	* * * * * * * * * * * * *
IF CST LEVE AFW PUMPS W PUMPS).	L DECREASES TO LESS THAN 5 F ILL BE NECESSARY (REFER TO F	EET, THEN ALTERNATE R-AFW.1, ALTERNATE V	WATER SOURCES FOR WATER SUPPLY TO AFW
* * * * * *	* * * * * * * * * * * * *	* * * * * * * * * *	* * * * * * * * * * *
NOTE: TDAFW	pump flow control valves fa	il open on loss of I	[A.
*21 Monitor	Intact S/G Levels:		•
a. Narrò THAN`	w range level - GREATER 5% [25% adverse CNMT]	a. Maintain tota than 200 gpm level greater adverse CNMT S/G.	al feed flow greater until narrow range c than 5% [25% ] in at least one
b. Contr narro [25%	ol feed flow to maintain w range level between 17% adverse CNMT] and 50%	b. <u>IF</u> narrow ran continues to feed flow to	nge level in any S/G increase, <u>THEN</u> stop that S/G.

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STEP	H	ACTION/EXPECTED RESPONSE		RESPONSE NOT OBTAINE	D
NOTE:	SW	should be aligned to CCW Hxs	befo	re restoring RCP seal o	cooling.
		- -	<u>.</u>		*
22 Cl	hec}	c RCP Cooling:		Establish normal cool: (Refer to Attachment S	ing to RCPs SEAL COOLING).
а	. Ch	eck CCW to RCPs:		*	
	0	Annunciator A-7, RCP 1A CCW RETURN HIGH TEMP OR LOW FLOW - EXTINGUISHED			- -
	ο	Annunciator A-15, RCP 1B CCW RETURN HIGH TEMP OR LOW FLOW - EXTINGUISHED		. ,	
ъ	. Ch	eck RCP seal injection:			٠
	o	Labyrinth seal D/Ps - GREATE THAN 15 INCHES WATER	R		
		-OR-			
	0	RCP seal injection flow to each RCP - GREATER THAN 6 GB	м		
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Γ	STEP A	CTION/EXPECTED RESPONSE	[	RESPONSE NOT OBTAINED			
	23 Check Should	If Seal Return Flow Be Established:	1	· · ·			
	a. Veri temp	fy RCP #1 seal outlet erature - LESS THAN 235°F	a	. Go to Step 24.			
•	b. Veri OPEN	fy RCP seal outlet valves	s - b	. Manually open valves necessary.	as		
	• A0 • A0	V-270A V-270B		•			
	c. Rese for valv	t both trains of XY relay RCP seal return isolation e MOV-313	75 1				
	d. Open valv	RCP seal return isolatic e MOV-313	on d	. Perform the followir	ig:		
			•	<ol> <li>Place MOV-313 swi</li> <li>Dispatch AO with gate to locally of</li> </ol>	.tch to C key to F open MOV-	)PEN. (WST •313.	
	e. Veri - LE	fy RCP #1 seal leakoff fl SS THAN 5.5 GPM	Low e	. <u>IF</u> any RCP seal leak greater than 5.5 gpm	coff flow n <u>THEN</u> :	J	•
		•		o Close the affecte discharge valve.	ed RCP se	al	
		•		• RCP A, AOV-2704 • RCP'B, AOV-2709	4 3		
				o Trip the affected	1 RCP.		
				<u>IF</u> both RCP seal dis valves are shut, <u>THI</u> Step 24.	scharge <u>3N</u> go to		
	f. Veri - GR	fy RCP #1 seal leakoff f EATER THAN 0.25 GPM	low f	. Refer to AP-RCP.1, MALFUNCTION.	RCP SEAL		-

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STEP	ЪĹ	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<b></b>		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
24 V E	erif NERG	Y All AC Busses - IZED BY OFFSITE POWER	Perform the following:
o	No: voi	rmal feed breakers to all 480 It busses - CLOSED	a. <u>IF</u> any AC emergency bus normal feed breaker open, <u>THEN</u> ensure associated D/G breaker closed.
o	9 480 TH	0 volt bus voltage - GREATER AN 420 VOLTS	b. Perform the following as necessary:
o	OP	ergency D/G output breakers - EN	1) Close non-safeguards bus tie breakers:
			<ul><li>Bus 13 to Bus 14 tie</li><li>Bus 15 to Bus 16 tie</li></ul>
•			2) Reset Bus 13 and Bus 15 lighting breakers.
		•	3) Dispatch AO to locally reset and start two IA compressors
			4) Place the following pumps in PULL STOP:
			<ul> <li>EH pumps</li> <li>Turning gear oil pump</li> <li>HP seal oil backup pump</li> </ul>
			5) Restore power to MCCs.
		۲ ۲	<ul> <li>A from Bus 13</li> <li>B from Bus 15</li> <li>E from Bus 15</li> <li>F from Bus 15</li> </ul>
L.	•	•	6) Start CNMT RECIRC fans as necessary.
•	`		<ul> <li>7) Refer to Attachment SI/UV fo</li> <li>other equipment lost with</li> <li>loss of offsite power.</li> </ul>
			c. Try to restore offsite power to all AC busses (Refer to ER-ELEC.1, RESTORATION OF

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<u>NOTE</u> :	Adverse CNMT conditions or loss of f failure of NIS detectors.	Forced air cooling may result in
25 Che Cha	eck If Source Range annels Should Be Energized:	- -
<b>a.</b>	Source range channels - DEENERGIZED	a. Go _. to Step 25e.
, b.	Check intermediate range flux -	b. Perform the following:
	10-10 AMPS	<ol> <li><u>IF</u> neither intermediate range channel is decreasing, <u>THEN</u> initiate boration.</li> </ol>
	•	2) Continue with Step 26. <u>WHEN</u> flux is LESS THAN 10-10 amps on any operable channel, <u>THEN</u> do Steps 25c, d and e.
c.	Check the following:	c. Continue with step 26. WHEN either condition met THEN do
	o Both intermediate range channels - LESS THAN 10 ⁻¹⁰ AMPS	Steps 25d and e.
	-OR-	
	o Greater than 20 minutes since reactor trip	
d.	Verify source range detectors - ENERGIZED	d. Manually energize source range detectors by depressing P-6 permissive defeat pushbuttons (2 of 2).
		IF source ranges can NOT be
	· ·	restored, <u>THEN</u> refer to ER-NIS.1, SR MALFUNCTION, and go to Step 26.
е.	Transfer Rk-45 recorder to one	
	source range and one	

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26 Check If Emergency D/Gs Should Be Stopped:	
a. Verify AC emergency busses energized by offsite power:	a. Try to restore offsite power (Refer to ER-ELEG.1, RESTORATIO OF OFFSITE POWER).
<ul> <li>Emergency D/G output breakers</li> <li>OPEN</li> </ul>	
o AC emergency bus voltage - GREATER THAN 420 VOLTS	
o AC emergency bus normal feed breakers - CLOSED	
b. Stop any unloaded emergency D/G and place in standby (Refer to Attachment D/G STOP)	
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STEP ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
* * * * * * * * * * * * * * * * * * *	<u>× * * * * * * * * * * * * * * * * * * *</u>
IF RCP SEAL COOLING HAD PREVIOUSLY BEEN I NOT BE STARTED PRIOR TO A STATUS EVALUATI	OST, THEN THE AFFECTED RCP SHOULD
* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
27 Check RCP Status - AT LEAST	Perform the following:
ONE RUNNING	a. Establish conditions for starting an RCP:
	o. Verify bus 11A or 11B energized.
	o Refer to Attachment RCP START.
•	b. Start one RCP.
•	<u>IF</u> an RCP can <u>NOT</u> be started, <u>THEN</u> verify natural circulation (Refer to Attachment NC).
	<u>IF</u> natural circulation <u>NOT</u> verified, <u>THEN</u> increase dumping steam from intact S/Gs.
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STE	<del>ب</del> واب	ACTIO	N/EXPECTE	D RESPONSI	3	RESPO	ONSE	NOT OBTAINE	2D		
28	Est Ali	ablish gnment	Normal	Shutdowr	17						
	a. (	Check co	ondenser -	AVAILABL	E	a. Dis Att	spat	ch AO to per ment SD-2.	form		
,	<b>b.</b> 1	Perform	the follo	wing:			•			•	
	(	o Open	generator	disconne :	cts						
		• 1G1 • 9X1	.3A71 [°] .3A73		-						
		o Place	voltage	regulator	to OFF						
	(	o Open	turbine d	lrain valv	es						
	(	o Rotat conti	e reheate oller can	er steam s 1 to close	upply valves						
	(	Place swite	reheater hes to HA	dump val ND	ve						
	(	o Stop pump	all but o	one conden	sate						
-	c. 1	Verify &	dequate R	x head co	oling:'						
		l) Check	IA to CN	IMT - AVAI	LABLE	1)	Go	to Step 29.			
	2	2) Verii rod s	y at leas hroud far	st one con A - RUNNIN	trol G	2)	Man pow	ually start er supply pe	one fa ermits	an as (45	kı
		3) Verii cooli	y one Rx ng fan -	compartme RUNNING	nt	3)	Per	form the fol	lowing	g:	
				<b>---</b>			0	Dispatch AO relays at MC	to rea CC C an	set U nd MC	V C
			-				ο	Manually sta power supply (23 kw)	art on perm:	e fan Its	
	d. 1	Verify A	ttachment	: SD-1 - C	OMPLETE						

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		PAGE 24 C	)f 
STEP 4	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED	
	· · · · · · · · · · · · · · · · · · ·	· ·	
29 Mainta Stable	ain Plant Conditions		
a. RCS AND	pressure - BETWEEN 1800 PSIG 2235 PSIG	a. Control PRZR heaters and spray as necessary.	
b. PRZ	R level - BETWEEN 20% AND 30%	b. Control charging as necessary.	
c. Int. BET	act S/G narrow range levels - WEEN 17% AND 39%	c. Control S/G feed flow as necessary.	
d. RCS	cold leg temperature - STABLE	d. Control dumping steam as necessary. <u>IF</u> cooldown continues, <u>THEN</u> close both MSIVs	₿.
*30 Monito Criter	or SI Reinitiation cia:	Í .	
a. RCS exi USI	subcooling based on core t T/Cs - GREATER THAN 0°F NG FIGURE MIN SUBCOOLING	a. Manually operate SI pumps as necessary and go to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1.	7
b. PRZ [30	R level - GREATER THAN 5% % adverse CNMT]	b. Control charging flow to maintain PRZR level.	
		<u>IF</u> PRZR level can <u>NOT</u> be maintained, <u>THEN</u> manually operate SI pumps as necessary and go to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1.	
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STEP	ACTION/EXPECTE	D RESPONSE	RESPONSE NOT	OBTAINED	
Luinud K			<b>.</b>		
31 GO TO SHUTI	o Procedure O DOWN TO HOT S	-2.1, NORMAL HUTDOWN			
			-END-		
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3)	ATTACHMENT CNMT RECIRC	. 1
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12)	ATTACHMENT AUX BLDG SW	1
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					•		
,		1	RED	PATH SUMMARY			
		,					
a.	SUBCI	RITICAL	[TY - Nuclear	power greater than 5%			
b.	CORE	COOLING	5 - Core exit	T/Cs greater than 1200°F			
•			Core exit RVLIS leve adverse Cl	T/Cs greater than 700°F <u>AN</u> el (no RCPs) less than 43% NMT]	<u>ID</u> [46%		
c.	HEAT	SINK -	Narrow range [25% adverse less than 200	level in all S/Gs less tha CNMT] <u>AND</u> total feedwater 0 gpm	n 5% flow		
d.	.INTEC	GRITY -	Cold leg tem 100°F in las temperature	peratures decrease greater t 60 minutes <u>AND</u> RCS cold ] less than 285°F	than Leg		
P.	CONT	TNMENT	- CNMT press	ure greater than 60 psig			•

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### FIGURE MIN SUBCOOLING

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



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### SI TERMINATION

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### 1. SI REINITIATION CRITERIA

TITLE:

<u>IF EITHER</u> condition listed below occurs, <u>THEN</u> manually operate SI pumps as necessary and go to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1:

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

- OR -

o PRZR level - CHARGING CAN NOT CONTROL LEVEL GREATER THAN 5%
[30% adverse CNMT]

### 2. <u>SI_TERMINATION_CRITERIA</u>

<u>IF ALL</u> conditions listed below occur, <u>THEN</u> go to ES-1.1, SI TERMINATION, Step 1:

- a. RCS subcooling based on core exit T/Cs GREATER THAN 0°F USING REQUIREMENTS OF FIGURE MIN SUBCOOLING
- b. Total feed flow to intact S/Gs GREATER THAN 200 GPM

- OR -Narrow range level in at least one intact S/G - GREATER THAN 5% [25% adverse CNMT]

### c. RCS pressure:

- O GREATER THAN 1625 PSIG [1825 psig adverse CNMT] O STABLE OR INCREASING
- d. PRZR level GREATER THAN 5% [30% adverse CNMT]

### 3. SECONDARY INTEGRITY CRITERIA

<u>IF</u> any S/G pressure is decreasing in an uncontrolled manner or is completely depressurized <u>AND</u> has not been isolated, <u>THEN</u> go to E-2, FAULTED S/G ISOLATION, Step 1.

4. COLD LEG RECIRCULATION SWITCHOVER CRITERION

<u>IF</u> RWST level decreases to less than 28%, <u>THEN</u> go to ES-1.3, TRANSFER TO COLD LEG RECIRCULATION, Step 1.

5. AFW SUPPLY SWITCHOVER CRITERION

<u>IF</u> CST level decreases to less than 5 feet, <u>THEN</u> switch to alternate AFW water supply (Refer to ER-AFW.1, ALTERNATE WATER SUPPLY TO AFW PUMPS).

6. E-3 TRANSITION CRITERIA

<u>IF</u> any S/G level increases in an uncontrolled manner or any S/G has abnormal radiation, <u>THEN</u> go to E-3, STEAM GENERATOR TUBE RUPTURE, Step 1.



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