

# CATEGORY 1

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

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FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244  
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WIDAY, J. H. Rochester Gas & Electric Corp.  
RECIP. NAME RECIPIENT AFFILIATION  
VISSING, G. S.

REV: 9/20/97 *[Signature]*

SUBJECT: Forwards Ginna Station's revised EOP including rev 14 to  
AP-ELEC.1, "Loss of 12A & 12B Busses". Rev 11 to AP-RCP.1,  
"RCP Seal Malfunction". Rev 12 to AP-RCS.1, "Reactor Coolant  
Leak". Rev 7 to AP-RCS.3, "High Reactor Coolant Activity".

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August 5, 1997

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Attn: Guy S. Vissing  
Project Directorate I-1  
Washington, D.C. 20555

Subject: Emergency Operating Procedures  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Vissing:

As requested, enclosed are Ginna Station Emergency Operating Procedures.

Very truly yours,

Joseph A. Widay

JAW/jdw

xc: U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Ginna USNRC Senior Resident Inspector

Enclosure(s):

AP-ELEC.1, Rev. 14  
AP-RCP.1, Rev. 11  
AP-RCS.1, Rev. 12  
AP-RCS.3, Rev. 7

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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 3-15-95

Thomas A. Marlow  
PLANT SUPERINTENDENT

3-21-95  
EFFECTIVE DATE

CATEGORY: 1.0

REVIEWED BY: \_\_\_\_\_

*Superseded. page 250-EPDJS*  
*50-2414 9708/30105*  
*8/5/97*

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AP-ELEC.1	LOSS OF 12A AND/OR 12B BUSSES	PAGE 2 of 22

A. PURPOSE - This procedure provides actions to respond to a loss of 12A and/or 12B Busses from HSD or at power conditions.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure may be entered from:

a. AP-TURB.2, AUTOMATIC TURBINE RUNBACK, when busses 12A and/or 12B are found to be deenergized.

2. SYMPTOMS - The symptoms of loss of #12A or 12B SS Transformer are:

a. Annunciator L-20, 12A XFMR OR 12A BUS TROUBLE, lit, or

b. Annunciator L-28, 12B XFMR OR 12B BUS TROUBLE, lit.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <ul style="list-style-type: none"> <li>o IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OR SI OCCURS, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.</li> <li>o IF A TURBINE RUNBACK HAS OCCURRED, THEN AP-TURB.2, TURBINE LOAD REJECTION, SHOULD BE PERFORMED.</li> <li>o IF ANY RADIOACTIVE RELEASE IN PROGRESS, THEN IT SHOULD BE TERMINATED UNTIL SUPPORT CONDITIONS ARE EVALUATED.</li> <li>o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.</li> <li>o DO NOT ATTEMPT TO ENERGIZE A BUS THAT IS POTENTIALLY FAULTED.</li> </ul> <p>*****</p> <p><u>NOTE:</u> Conditions should be evaluated for site contingency reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION).</p>		
1	<p>Verify Emergency D/G Associated With Dead Bus - RUNNING</p> <ul style="list-style-type: none"> <li>o Bus 12A - D/G A</li> <li>o Bus 12B - D/G B</li> </ul>	<p><u>IF</u> appropriate emergency D/G(s) <u>NOT</u> running, <u>THEN</u> attempt to start manually. (Refer to ER-D/G.1, RESTORATION OF A FAILED D/G.)</p>
2	<p>Verify Both Trains Of AC Emergency Busses Energized To At Least 420 VOLTS:</p> <ul style="list-style-type: none"> <li>o Bus 14 and bus 18</li> <li>o Bus 16 and bus 17</li> </ul>	<p>Try to restore power to all AC emergency busses. <u>IF</u> power can <u>NOT</u> be restored to at least one train. <u>THEN</u> refer to ECA-0.0, LOSS OF ALL AC POWER, Step 1.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
3	Verify Service Water System Operation:	
	a. SW pumps - AT LEAST ONE RUNNING IN EACH LOOP	a. Verify selected SW pumps start on a timer (40 sec) after D/G start. <u>IF NOT</u> , <u>THEN</u> manually start pumps as necessary (258 kw each).
	b. SW header pressure - GREATER THAN 40 PSIG IN EACH LOOP	b. Manually align valves as necessary.
4	Check CCW Pump Status:	
	a. At least one CCW pump - RUNNING	a. Start one CCW pump (124 kw).
	b. Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSIG - EXTINGUISHED	b. Start second CCW pump (124 kw).
5	Check RCS Temperature - GREATER THAN 350°F	Go to AP-ELEC.3, LOSS OF 12A AND/OR 12B TRANSFORMER (BELOW 350°F).
6	Verify Bus 11A And 11B Normal Feed Breakers - CLOSED	<p><u>IF</u> turbine trip has occurred from power less than 50%, <u>THEN</u> go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.</p> <p><u>IF</u> turbine stop valves open, <u>THEN</u> trip turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.</p> <p><u>IF</u> turbine <u>NOT</u> previously latched, <u>THEN</u> perform the following:</p> <p>a. Ensure reactor power less than 8%.</p> <p>b. Go to Step 16.</p>



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	Verify Annunciator H-16, INSTRUMENT AIR COMP - EXTINGUISHED	Dispatch AO to locally reset and start IA compressors as necessary.
8	Monitor S/G Level Control: <ul style="list-style-type: none"> <li>o S/G level - TRENDING TO PROGRAM</li> <li>o MFW regulating valves - CONTROLLING IN AUTO</li> </ul>	Place MFW regulating valves in MANUAL and control feed flow as necessary.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p><u>NOTE:</u> When restarting equipment for recovery, it is preferable to start equipment on busses being supplied from offsite power, if possible.</p>	
	<p>9 Check CVCS Operation:</p>	
	<p>a. Charging pumps - AT LEAST ONE RUNNING</p>	<p>a. Perform the following:</p> <ol style="list-style-type: none"> <li>1) Close loop B cold leg to REGEN Hx, AOV-427.</li> <li>2) Start charging pumps as necessary.</li> <li>3) Establish greater than 20 gpm charging line flow.</li> </ol>
	<p>b. Check letdown indications:</p> <ul style="list-style-type: none"> <li>o Check PRZR level - GREATER THAN 13%</li> <li>o Letdown flow - APPROXIMATELY 40 GPM</li> <li>o Letdown flow - STABLE</li> </ul>	<p>b. Perform the following:</p> <ol style="list-style-type: none"> <li>1) Close loop B cold leg to REGEN Hx, AOV-427.</li> <li>2) Close letdown orifice valves (AOV-200A, AOV-200B, and AOV-202)</li> <li>3) <u>IF</u> PRZR level greater than 13%, <u>THEN</u> go to Step 10. <u>IF NOT</u>, <u>THEN</u> continue with Step 12. <u>WHEN</u> PRZR level greater than 13%, <u>THEN</u> do Steps 10 and 11.</li> </ol>
	<p>c. Adjust charging pump speed and HCV-142 as necessary to restore PRZR level and labyrinth seal D/P</p>	
	<p>d. Go to Step 11</p>	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p><u>NOTE:</u> Steps 10 and 11 may be performed concurrently.</p>	
10	Establish Normal Letdown:	Perform the following steps in sequence to establish excess letdown:
a.	Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM	o Place excess letdown divert valve, AOV-312, to NORMAL
b.	Verify the following switches in CLOSE: <ul style="list-style-type: none"> <li>Letdown orifice valve (AOV-200A, AOV-200B, and AOV-202)</li> <li>Loop B cold leg to REGEN Hx AOV-427</li> </ul>	o Ensure CCW from excess letdown open, AOV-745
c.	Place letdown controllers in MANUAL at 40% open <ul style="list-style-type: none"> <li>TCV-130</li> <li>PCV-135</li> </ul>	o Ensure RCP seal return isolation valve open, MOV-313
d.	Open AOV-427	o Open excess letdown isolation valve, AOV-310
e.	Open letdown orifice valves as necessary	o Slowly open HCV-123 to maintain excess letdown temperature less than 195°F and pressure less than 100 psig
f.	Place TCV-130 in AUTO at 105°F	
g.	Place PCV-135 in AUTO at 250 psig	
h.	Adjust charging pump speed and HCV-142 as necessary	



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Verify PRZR Heaters Restored:	Perform the following:
	<ul style="list-style-type: none"> <li>o PRZR proportional heater breaker - CLOSED</li> <li>o PRZR backup heater breaker - RESET/IN AUTO</li> </ul>	<ul style="list-style-type: none"> <li>a. Verify adequate D/G capacity available for PRZR heaters (400 kw each bank).</li> <li>b. Reset and close PRZR proportional heater breaker if necessary.</li> <li>c. Reset PRZR backup heater breaker and return to AUTO if necessary.</li> </ul> <p><u>IF</u> on natural circulation and at least 100 kw of PRZR heaters can <u>NOT</u> be restored within 6 hours, <u>THEN</u> be on RHR within an additional 6 hours. (Refer to Technical Specification 3.1.1.5)</p>
12	Verify Normal Rod Control Restored:	
	<ul style="list-style-type: none"> <li>a. Annunciator C-5, PPCS ROD SEQUENCE OR ROD DEVIATION - EXTINGUISHED</li> <li>b. Annunciator E-28, POWER RANGE ROD DROP ROD STOP - EXTINGUISHED</li> <li>c. Place rod control bank selector switch in AUTO if desired</li> </ul>	<ul style="list-style-type: none"> <li>a. Go to AP-RCC.2, RCC/RPI MALFUNCTION.</li> <li>b. Perform the following: <ul style="list-style-type: none"> <li>1) Place rod control bank selector switch in MANUAL.</li> <li>2) Reset NIS rod drop rod stop signals (at NIS racks) as necessary.</li> </ul> </li> </ul>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	Establish Stable Plant Conditions:	
a.	Check Tavg - TRENDING TO TREF	a. Insert control rods or, if necessary, decrease turbine load to match Tavg to Tref.
b.	Check PRZR pressure - TRENDING TO 2235 PSIG	b. Verify proper operation of PRZR heaters and spray or take manual control of PRZR pressure controller 431K.
c.	Check PRZR level - TRENDING TO PROGRAM	c. Verify proper operation of charging pump speed controllers or take manual control of speed controllers to control PRZR level.
<p><u>NOTE:</u> Power operation may continue if conditions required by Tech Spec section 3.7 are met.</p>		
14	Restore Normal Electric System Alignment:	
a.	Verify circuit 767 and/or 751 - AVAILABLE	a. Continue with Step 15. <u>WHEN</u> offsite power available, <u>THEN</u> do Steps 14b, c and d.
b.	Restore power to 12A and/or 12B bus (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER)	
c.	Verify all emergency AC bus normal feed breakers - CLOSED	c. Restore emergency AC busses to normal power supply (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER)
	<ul style="list-style-type: none"> <li>• Bus 14</li> <li>• Bus 16</li> <li>• Bus 17</li> <li>• Bus 18</li> </ul>	
d.	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
15	Establish Normal Plant Conditions:	
a.	Verify EH control in OPER PAN and IMP IN	a. <u>IF</u> conditions requiring runback have cleared, <u>THEN</u> place EH in OPER PAN and IMP IN.
b.	Ensure steam dump controller, HC-484, in AUTO at 1005 psig	
c.	Verify annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED	c. <u>IF</u> Tavg within 6°F of Tref, <u>THEN</u> perform the following: 1) Ensure steam dump valves closed. 2) Reset steam dump.
d.	Verify 2 charging pumps - RUNNING	d. Perform the following: 1) Manually start charging pumps as necessary. 2) Place selected charging pump speed controller in AUTO if desired.
e.	Verify Rod Control Selector Switch in AUTO	e. Place Rod Control Selector Switch in AUTO if desired.
f.	Go to Step 29	



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p><u>NOTE:</u></p> <ul style="list-style-type: none"> <li>o Following RCP trip, a decrease in idle S/G level may occur. Also, swell may be anticipated in the operating S/G due to load pickup from the idle loop.</li> <li>o Temperatures in the loop with the stopped RCP will not be indicative of true Tavg and ΔT values.</li> <li>o If only one RCP is operating, single loop shutdown margin requirements should be observed.</li> <li>o Attempts to restore offsite power should continue (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER.)</li> </ul>		
16	Check Secondary Heat Sink Status:	
	a. Any main feed pump - RUNNING	a. Perform the following: <ul style="list-style-type: none"> <li>1) Verify MDAFW pumps running as necessary.</li> <li>2) Verify TDAFW pump running if necessary.</li> <li>3) Ensure Rx power less than 2%.</li> </ul>
	b. Verify S/G levels - TRENDING TO 39%	b. Control feed flow as necessary to restore S/G level.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17	Check TDAFW Pump Status:	
	a. TDAFW pump - RUNNING	a. Go to Step 18.
	b. Check S/G status	b. Go to Step 18.
	o At least one S/G level - GREATER THAN 17%	
	-OR-	
	o Both MDAFW pumps - OPERABLE	
	c. Pull stop TDAFW pump steam supply valves	
	• MOV-3504A	
	• MOV-3505A	
18	Check Any RCP - RUNNING	Verify natural circulation. (Refer to Attachment NC.) <u>IF</u> natural circulation can <u>NOT</u> be verified, <u>THEN</u> increase dumping steam.
19	Establish Condenser Steam Dump Pressure Control:	
	a. Verify condenser available:	a. Perform the following:
	o Any MSIV - OPEN	1) Place S/G ARV controllers in AUTO at 1005 psig and verify proper operation. <u>IF</u> S/G ARVs <u>NOT</u> controlling in AUTO, <u>THEN</u> control S/G ARVs manually.
	o Annunciator G-15, STEAM DUMP ARMED - LIT	2) Go to Step 20.
	b. Adjust condenser steam dump controller HC-484 to 1005 psig in AUTO	
	c. Place steam dump mode selector switch to MANUAL	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
20	Restore Non-Safeguards Busses As Follows:	
a.	Verify Bus 13 and 15 - ENERGIZED	<p>a. <u>IF</u> offsite power available, <u>THEN</u> attempt to restore offsite power and normal feed to Bus 13/15 (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER).</p> <p><u>IF</u> offsite power is <u>NOT</u> available, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> <li>o Close Bus 13 to Bus 14 tie breaker</li> <li>o Close Bus 15 to Bus 16 tie breaker</li> </ul>
b.	Verify MCC A - ENERGIZED	<p>b. Perform the following:</p> <ol style="list-style-type: none"> <li>1) Ensure the following pumps in PULL STOP: <ul style="list-style-type: none"> <li>• EH pump A</li> <li>• Turning gear oil pump</li> <li>• HP seal oil backup pump</li> </ul> </li> <li>2) Close MCC A supply breaker from bus 13.</li> </ol>
c.	Verify MCC B - ENERGIZED	<p>c. Perform the following:</p> <ol style="list-style-type: none"> <li>1) Ensure EH pump B in PULL STOP.</li> <li>2) Close MCC B supply breaker from bus 15.</li> </ol>
d.	Verify annunciator J-8, 480V MCC SUPPLY BREAKER TRIP - EXTINGUISHED	d. Restore power to other MCCs as D/G loading permits.
e.	Reset control room lighting if necessary	
f.	Reset MAIN XFMR AUX PWR SUPPLY breakers as necessary	
	<ul style="list-style-type: none"> <li>• Bus 13</li> <li>• Bus 15</li> </ul>	



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p><u>NOTE:</u> When restarting equipment for recovery, it is preferable to start equipment on busses being supplied from offsite power, if possible.</p>	
21	Check IA System:	
	<ul style="list-style-type: none"> <li>a. Verify 2 IA compressors - RUNNING</li> <li>b. Check IA supply <ul style="list-style-type: none"> <li>o Pressure - GREATER THAN 60 PSIG</li> <li>o Pressure - STABLE OR INCREASING</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>a. Manually start IA compressors as necessary (75 kw each).</li> <li>b. Dispatch an AO to locally reset and start IA compressors (75 kw each).</li> </ul> <p><u>IF</u> IA can <u>NOT</u> be established, <u>THEN</u> refer to AP-IA.1, LOSS OF INSTRUMENT AIR.</p>
22	Verify Instrument Bus D - ENERGIZED	<p>Energize MCC B. <u>IF</u> MCC B <u>NOT</u> available, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> <li>a. Verify MCC A energized.</li> <li>b. Place instrument bus D on maintenance supply.</li> </ul>



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
23	Check CVCS Operation:	
a.	Charging pumps - AT LEAST ONE RUNNING	a. Perform the following: 1) Close loop B cold leg to REGEN Hx, AOV-427. 2) Start charging pumps as necessary. 3) Establish greater than 20 gpm charging line flow.
b.	Check letdown indications: o Check PRZR level - GREATER THAN 13% o Letdown flow - APPROXIMATELY 40 GPM o Letdown flow - STABLE	b. Perform the following: 1) Close loop B cold leg to REGEN Hx, AOV-427. 2) Close letdown orifice valves (AOV-200A, AOV-200B, and AOV-202) 3) <u>IF</u> PRZR level greater than 13%, <u>THEN</u> go to Step 24. <u>IF NOT</u> , <u>THEN</u> continue with Step 26. <u>WHEN</u> PRZR level greater than 13%, <u>THEN</u> do Steps 24 and 25.
c.	Adjust charging pump speed and HCV-142 as necessary to restore PRZR level and labyrinth seal D/P	
d.	Go to Step 25	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p><u>NOTE:</u> Steps 24 and 25 may be performed concurrently.</p>		
24	<p>Establish Normal Letdown:</p> <ol style="list-style-type: none"> <li>Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM.</li> <li>Verify the following switches in CLOSE: <ul style="list-style-type: none"> <li>Letdown orifice valve (AOV-200A, AOV-200B, and AOV-202)</li> <li>Loop B cold leg to REGEN Hx AOV-427</li> </ul> </li> <li>Place letdown controllers in MANUAL at 40% open <ul style="list-style-type: none"> <li>TCV-130</li> <li>PCV-135</li> </ul> </li> <li>Open AOV-427.</li> <li>Open letdown orifice valves as necessary.</li> <li>Place TCV-130 in AUTO at 105°F.</li> <li>Place PCV-135 in AUTO at 250 psig.</li> <li>Adjust charging pump speed and HCV-142 as necessary.</li> </ol>	<p>Perform the following steps in sequence to establish excess letdown:</p> <ul style="list-style-type: none"> <li>Place excess letdown divert valve, AOV-312, to NORMAL</li> <li>Ensure CCW from excess letdown open, AOV-745</li> <li>Ensure RCP seal return isolation valve open, MOV-313</li> <li>Open excess letdown isolation valve, AOV-310</li> <li>Slowly open HCV-123 to maintain excess letdown temperature less than 195°F and pressure less than 100 psig</li> </ul>



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
25	Verify PRZR Heaters Restored:	Perform the following:
	<ul style="list-style-type: none"> <li>o PRZR proportional heater breaker - CLOSED</li> <li>o PRZR backup heater breaker - RESET/IN AUTO</li> </ul>	<ul style="list-style-type: none"> <li>a. Verify adequate D/G capacity available for PRZR heaters (400 kw each bank).</li> <li>b. Reset and close PRZR proportional heater breaker if necessary.</li> <li>c. Reset PRZR backup heater breaker and return to AUTO if necessary.</li> </ul> <p><u>IF</u> on natural circulation and at least 100 kw of PRZR heaters can <u>NOT</u> be restored within 6 hours, <u>THEN</u> be on RHR within an additional 6 hours. (Refer to Technical Specification 3.1.1.5)</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
26	Establish Stable Plant Conditions:	
a.	Check Rx power - LESS THAN $2.5 \times 10^{-6}$ AMPS	a. Ensure rod control bank selector in MANUAL and insert rods to reduce Rx power as necessary.
b.	Check PRZR pressure - TRENDING TO 2235 PSIG	b. Verify proper operation of PRZR heaters and spray or take manual control of PRZR pressure controller 431K.
c.	Verify 2 charging pumps - RUNNING	c. Perform the following: 1) Manually start charging pumps as necessary. 2) Place selected charging pump speed controller in AUTO if desired.
d.	Check PRZR level - between 20% and 30%	d. Control charging as necessary.
e.	Check S/G levels - TRENDING TO 39%	e. Control feed flow as necessary to restore both S/G levels to 39%.
f.	Check RCS Tavg - GREATER THAN 540°F	f. Control dumping steam as necessary. <u>IF</u> cooldown continues, <u>THEN</u> close both MSIVs.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
***** <u>CAUTION</u> *****		
ANYTIME EMERGENCY D/GS ARE THE ONLY SOURCE OF AC POWER TO THE PLANT, PERSONNEL SHOULD BE ASSIGNED TO MAINTAIN SURVEILLANCE OF THE D/GS.		
*****		
27	Restore Normal Electric System Alignment:	
	a. Verify circuit 767 and/or 751 - AVAILABLE	a. Continue with Step 28. <u>WHEN</u> offsite power available, <u>THEN</u> do Steps 27b, c and d.
	b. Restore power to 12A and/or 12B bus if necessary (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER)	
	c. Verify all emergency AC bus normal feed breakers - CLOSED	c. Restore emergency AC busses to normal power supply (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER)
	• Bus 14	
	• Bus 16	
	• Bus 17	
	• Bus 18	
	d. 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
	<p><u>NOTE:</u> Evaluate conditions to determine if turbine should be placed on turning gear.</p>	
28	<p>Establish Normal Shutdown Alignment:</p>	
a.	Verify turning gear oil pump - RUNNING	<p>a. Perform the following:</p> <ol style="list-style-type: none"> <li>1) Manually start turning gear oil pump (42 kw).</li> <li>2) Break vacuum to accelerate turbine coastdown.</li> <li>3) Continue with Step 28b. <u>WHEN</u> shaft stops, <u>THEN</u> dispatch AO to place turbine on turning gear.</li> </ol>
b.	Verify adequate Rx head cooling:	
	<ol style="list-style-type: none"> <li>1) Verify at least one control rod shroud fan - RUNNING</li> <li>2) Verify one Rx compartment cooling fan - RUNNING</li> </ol>	<ol style="list-style-type: none"> <li>1) Manually start one fan as power supply permits (45 kw).</li> <li>2) Manually start one fan as power supply permits (23 kw).</li> </ol>
c.	Dispatch AO to start waste gas compressor as necessary	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
29	Restore Equipment Alignment:	
a.	Verify at least 2 CNMT recirc fans - RUNNING	a. Start CNMT recirc fans as necessary (240 kw each).
b.	Check CCW pumps - ONLY ONE RUNNING	b. <u>IF</u> two CCW pumps running, <u>THEN</u> manually stop one pump.
c.	Check radiation monitoring systems:	c. Restore sample pumps and radiation monitors as necessary.
	o CNMT vent sample pump - RUNNING	
	o Plant vent sample pump - RUNNING	
	o All area and process monitors operating as required	
d.	Dispatch AO to verify proper operation of seal oil system	
e.	Verify motor fire pump breaker - CLOSED	e. Close motor fire pump breaker.
f.	Verify annunciator L-1, AUX BLDG VENT SYSTEM CONTROL PANEL - EXTINGUISHED	f. <u>IF</u> bus 11A or 11B energized, <u>THEN</u> dispatch AO to restore AUX BLDG ventilation (Refer to T-35A, AUX AND INTERMEDIATE BUILDING VENTILLATION STARTUP AND SHUTDOWN)
g.	Verify service air compressor - RUNNING	g. Dispatch AO to locally start service air compressor.
h.	Verify MCC G - ENERGIZED	h. Manually close breaker.
i.	Check control board annunciator panels - ALARM STATUS VALID FOR PLANT CONDITIONS	i. Perform alarm response procedures for unexpected alarms.
j.	Verify control board valve alignment - NORMAL (Refer to O-6.13, DAILY SURVEILLANCE LOG)	j. Manually align valves as necessary.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
30	Check Status Of DC System Loads:	
a.	Verify emergency DC lube oil pump - OFF	a. Manually stop emergency DC lube oil pump.
b.	Verify TDAFW pump DC oil pump - OFF IN AUTO	b. Perform the following: <ul style="list-style-type: none"> <li>1) Ensure TDAFW AC oil pump running.</li> <li>2) Stop TDAFW pump DC oil pump.</li> </ul>
c.	Verify both MFW pump DC oil pumps - OFF	c. Perform the following: <ul style="list-style-type: none"> <li>1) Ensure associated MFW pump AC oil pump running.</li> <li>2) Stop MFW pump DC oil pump and place in AUTO</li> </ul>
	<p><u>NOTE:</u> Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting requirements.</p>	
31	Notify Higher Supervision	
32	Return To Procedure Or Guidance In Effect	
		-END-

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AP-ELEC. 1 APPENDIX LIST

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2) ATTACHMENT NC	1
3) ATTACHMENT D/G STOP	1

FIGURE MIN SUBCOOLING

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





