

EOP: AP-ELEC.1	TITLE: LOSS OF 12A AND/OR 12B TRANSFORMER	REV: 8 PAGE 1 of 19
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 6/12/91

Joseph A. Widay  
PLANT SUPERINTENDENT

6/17/91  
EFFECTIVE DATE

CATEGORY 1.0

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

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- A. PURPOSE - This procedure provides actions to respond to a loss of #12A or 12B SS Transformer from HSD or at power conditions.
- B. ENTRY CONDITIONS/SYMPTOMS
  - 1. ENTRY CONDITIONS - This procedure may be entered from:
    - a. AP-TURB.1, 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
***** CAUTION *****		
	<ul style="list-style-type: none"> <li>o IF AT ANY TIME DURING THIS PROCEDURE A REACTOR TRIP OR SI IS REQUIRED, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.</li> <li>o IF A TURBINE RUNBACK HAS OCCURRED, THEN AP-TURB.2, AUTOMATIC TURBINE RUNBACK, SHOULD BE PERFORMED.</li> </ul>	
*****		
1	Verify Emergency D/G Associated With Dead Bus - RUNNING <ul style="list-style-type: none"> <li>o Bus 12A - D/G A</li> <li>o Bus 12B - D/G B</li> </ul>	IF 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.)
2	Verify Both Trains Of AC Emergency Busses Energized To At Least 420 VOLTS: <ul style="list-style-type: none"> <li>o Bus 14 and bus 18</li> <li>o Bus 16 and bus 17</li> </ul>	Try to restore power to all AC emergency busses. IF power can <u>NOT</u> be restored to at least one train, <u>THEN</u> go to ECA-0.0, LOSS OF ALL AC POWER, Step 1.
3	Verify Service Water System Operation: <ul style="list-style-type: none"> <li>a. SW pumps - AT LEAST ONE RUNNING IN EACH LOOP</li> <li>b. SW header pressure - GREATER THAN 40 PSIG IN EACH LOOP</li> </ul>	<ul style="list-style-type: none"> <li>a. Manually start pumps as necessary. (258 kw each)</li> <li>b. Manually align valves as necessary.</li> </ul>

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 4 Verify CCW Pump Operation:

- a. At least one CCW pump - RUNNING
- b. Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSIG - EXTINGUISHED

- a. Start one CCW pump (124 kw).
- b. Start second CCW pump (124 kw).

## 5 Verify Bus 11A And 11B Normal Feed Breakers - CLOSED

IF turbine trip has occurred from power less than 50%, THEN go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.

IF turbine stop valves open, THEN trip turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.

IF turbine NOT previously latched, THEN perform the following:

- a. Ensure reactor power less than 8%.
- b. Go to Step 16.

## 6 Check S/G Level Control

- o S/G level - TRENDING TO PROGRAM
- o MFW regulating valves - CONTROLLING IN AUTO

Place MFW regulating valves in MANUAL and control feed flow as required.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: When restarting equipment for recovery, it is preferable to start equipment on busses being supplied from offsite power, if possible.

7 Establish Normal Charging Flow:

- a. Verify 2 charging pumps - RUNNING
- b. Adjust charging pump speed and HCV-142 as necessary to restore PRZR level and labyrinth seal D/P

- a. Start charging pumps as necessary (75 kw each).

8 Check CVCS Letdown:

- a. Normal letdown in service:

- o Letdown flow - APPROXIMATELY 40 GPM
- o Letdown flow - STABLE
- o Letdown pressure - APPROXIMATELY 250 PSIG

- a. Perform the following:

- 1) Place AOV-427 switch to CLOSE
- 2) Place letdown orifice isolation valves to CLOSE.
- 3) Go to Step 9.

- b. Go to Step 11

9 Check PRZR Level - GREATER THAN 13%

Continue with Step 12. WHEN PRZR level greater than 13%, THEN do Steps 10 and 11.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 10 Establish Normal Letdown:

- a. Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM.
- b. Verify the following switches in CLOSE:
  - Letdown orifice valve (AOV-200A, AOV-200B, and AOV-202)
  - Loop B cold leg to REGEN Hx AOV-427
- c. Place letdown controllers in MANUAL at 25% open.
  - TCV-130
  - PCV-135
- d. Open AOV-427.
- e. Open letdown orifice valves as necessary.
- 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.

Perform the following steps in sequence to establish excess letdown:

- o Place excess letdown divert valve, AOV-312, to NORMAL
- o Ensure CCW from excess letdown open, AOV-745
- o Ensure RCP seal return isolation valve open, MOV-313
- o Open excess letdown isolation valve, AOV-310
- o Slowly open HCV-123 to maintain excess letdown temperature less than 195°F and pressure less than 100 psig

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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CAUTION

- o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.
- o 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.

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11 Verify PRZR Heaters Restored:

Perform the following:

- o PRZR proportional heater breaker - CLOSED
- o PRZR backup heater breaker - RESET/IN AUTO

- a. Verify adequate D/G capacity available for PRZR heaters (400 kw each bank).
- b. Reset and close PRZR proportional heater breaker if necessary.
- c. Reset PRZR backup heater breaker and return to AUTO if necessary.

IF on natural circulation and at least 100 kw of PRZR heaters can NOT be restored within 6 hours, THEN be on RHR within an additional 6 hours. (Refer to Technical Specification 3.1.1.5)

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
12	Establish Stable Plant Conditions:	
	a. Reset NIS rod drop rod stop signals (at NIS racks)	
	b. Tav <sub>g</sub> - TRENDING TO TREF	b. Insert control rods or, if necessary, decrease turbine load to match Tav <sub>g</sub> to Tref.
	c. PRZR pressure - TRENDING TO 2235 PSIG	c. Verify proper operation of PRZR heaters and spray or take manual control of PC-431K.
	d. PRZR level - TRENDING TO PROGRAM	d. Verify proper operation of charging pump speed controllers or take manual control of speed controllers to control PRZR level.
13	Restore Normal Alignment:	
	a. Verify at least 2 CNMT recirc fans - RUNNING	a. Start CNMT recirc fans as necessary (240 kw each).
	b. Verify IA available:	b. Dispatch A0 to restore IA compressors as necessary (75 kw each).
	o Annunciator H-8, INSTRUMENT AIR LO PRESS - EXTINGUISHED	
	o Annunciator H-16, INSTRUMENT AIR COMPRESSOR - EXTINGUISHED	

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Power operation may continue if conditions required by Tech Spec section 3.7 are met.

#### 14 Establish Normal Operation:

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|---|--|
| a. Verify circuit 76702 or 75112 - AVAILABLE  | a. Continue to monitor plant conditions and go to Step 15. |
| b. Restore power to 12A and/or 12B bus (refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER) |  |

#### 15 Establish Normal Plant Conditions:

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|---|--|
| 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. Verify 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: <ul style="list-style-type: none"> <li>1) Ensure steam dump valves closed.</li> <li>2) Reset steam dump.</li> </ul> |
| d. Verify charging pump speed control in AUTO                 | d. Place charging pump speed control 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 30  |  |

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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NOTE: 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.

o Temperatures in the loop with the stopped RCP will not be indicative of true Tavg and  $\Delta T$  values.

o Attempts to restore offsite power should continue. (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER.)

#### 16 Check S/G Feed Status:

a. Any main feed pump - RUNNING

a. Perform the following:

1) Verify MDAFW pumps running as necessary.

2) Verify TDAFW pump running if necessary.

3) Ensure Rx power less than 2%.

b. Verify S/G levels - TRENDING TO 39%

b. Control feed flow as necessary to restore S/G level.

#### 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



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ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

18 Check Any RCP - RUNNING

Verify natural circulation. (Refer. to Attachment NC.) IF natural circulation can NOT be verified, THEN increase dumping steam.



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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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CAUTION

- o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.
- o 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.

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19 Restore Non-Safeguards Busses  
As Follows:

- a. Close non-safeguards bus tie breakers for affected bus(es):

- Bus 13 to bus 14 tie
- Bus 15 to bus 16 tie

- b. Before energizing affected MCC(s) place the associated pumps in PULL STOP:

o MCC A

- EH pump A
- Turning gear oil pump
- HP seal oil backup pump

o MCCB

- EH pump B

- c. Restore power to affected MCC(s):

- A from bus 13
- B from bus 15
- E from bus 15
- F from bus 15

- d. WHEN bus 15 restored, THEN reset control room lighting if necessary

- a. IF breaker can NOT be closed, THEN notify electricians.

- c. IF any breaker can NOT be closed, THEN notify electricians.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 20 Establish IA:

a. Verify 2 IA compressors - RUNNING

a. Dispatch an AO to reset and start IA compressors as D/G loading permits (75 kw each).

b. Check IA supply

b. IF IA can NOT be established, THEN refer to AP-IA.1, LOSS OF INSTRUMENT AIR.

o Pressure - GREATER THAN 60 PSIG

o Pressure - STABLE OR INCREASING

## 21 Verify Instrument Bus 1D - ENERGIZED

Energize MCC B. IF MCC B NOT available, THEN perform the following:

a. Verify MCC A energized.

b. Place instrument bus D on maintenance supply.

## 22 Establish Normal Charging Flow:

a. Verify 2 charging pumps - RUNNING

a. Start charging pumps as necessary (75 kw each).

b. Adjust charging pump speed and HCV-142 as necessary to restore PRZR level and labyrinth seal D/P



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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 23 Check CVCS Letdown:

## a. Normal letdown in service:

- o Letdown flow - APPROXIMATELY 40 GPM
- o Letdown flow - STABLE
- o Letdown pressure - APPROXIMATELY 250 PSIG

## b. Go to Step 26

## a. Perform the following:

- 1) Place AOV-427 switch to CLOSE
- 2) Place letdown orifice isolation valves to CLOSE.
- 3) Go to Step 24.

## 24 Check PRZR Level - GREATER THAN 13%

Continue with Step 27. WHEN PRZR level greater than 13%, THEN do Steps 25 and 26.

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ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 25 Establish Normal Letdown:

- a. Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM.
- b. Verify the following switches in CLOSE:
  - Letdown orifice valve (AOV-200A, AOV-200B, and AOV-202)
  - Loop B cold leg to REGEN Hx AOV-427
- c. Place letdown controllers in MANUAL at 25% open.
  - TCV-130
  - PCV-135
- d. Open AOV-427.
- e. Open letdown orifice valves as necessary.
- 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.

Perform the following steps in sequence to establish excess letdown:

- o Place excess letdown divert valve, AOV-312, to NORMAL
- o Ensure CCW from excess letdown open, AOV-745
- o Ensure RCP seal return isolation valve open, MOV-313
- o Open excess letdown isolation valve, AOV-310
- o Slowly open HCV-123 to maintain excess letdown temperature less than 195°F and pressure less than 100 psig

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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CAUTION

- o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.
- o 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.

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26 Verify PRZR Heaters Restored:

Perform the following:

- o PRZR proportional heater breaker - CLOSED
- o PRZR backup heater breaker - RESET/IN AUTO

a. Verify adequate D/G capacity available for PRZR heaters (400 kw each bank).

b. Reset and close PRZR proportional heater breaker if necessary.

c. Reset PRZR backup heater breaker and return to AUTO if necessary.

IF on natural circulation and at least 100 kw of PRZR heaters can NOT be restored within 6 hours, THEN be on RHR within an additional 6 hours. (Refer to Technical Specification 3.1.1.5)

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

## 27 Establish Stable Plant Conditions:

a. Tavg - TRENDING TO TREF

a. Insert control rods or, if necessary, decrease turbine load to match Tavg to Tref.

b. PRZR pressure - TRENDING TO 2235 PSIG

b. Verify proper operation of PRZR heaters and spray or take manual control of PC-431K.

c. 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.

## 28 Verify Both S/G Levels - GREATER THAN 25%

Control feed flow as necessary to restore both S/G levels greater than 25%.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.</p> <p>*****</p> <p><u>NOTE:</u> Evaluate conditions to determine if turbine should be placed on turning gear.</p>		
29	Establish Normal Shutdown Alignment:	
	a. Start turning gear oil pump (42 kw) and verify pump - RUNNING	a. Verify DC emergency oil pump running and break vacuum to accelerate turbine coastdown. Continue with Step 29c. <u>WHEN</u> shaft stops, <u>THEN</u> stop DC emergency oil pump.
	b. Stop DC emergency oil pump	
	c. Verify adequate Rx head cooling:	
	1) Verify at least one control rod shroud fan - RUNNING	1) Manually start one fan as power supply permits (45 kw).
	2) Verify one Rx compartment cooling fan - RUNNING	2) Manually start one fan as power supply permits (23 kw).
	d. Dispatch A0 to start waste gas compressor as necessary	
	e. Start main transformer cooling fans as necessary	
	f. Start CNMT recirc fans as necessary (240 kw each)	
	g. Verify radiation monitoring system operating as required	g. Reset radiation monitors and restart ventilation systems as necessary.
	h. Verify motor fire pump breaker - CLOSED	h. Close motor fire pump breaker.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

30 WHEN Conditions Permit, THEN.  
Restore Offsite Power (Refer  
to ER-ELEC.1, RESTORATION OF  
OFFSITE POWER)

31 Notify Higher Supervision

NOTE: Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting  
requirements.

32 Return To Procedure Or  
Guidance In Effect

-END-



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AP-ELEC. 1 APPENDIX LIST

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EOP:

AP-ELEC.1

TITLE:

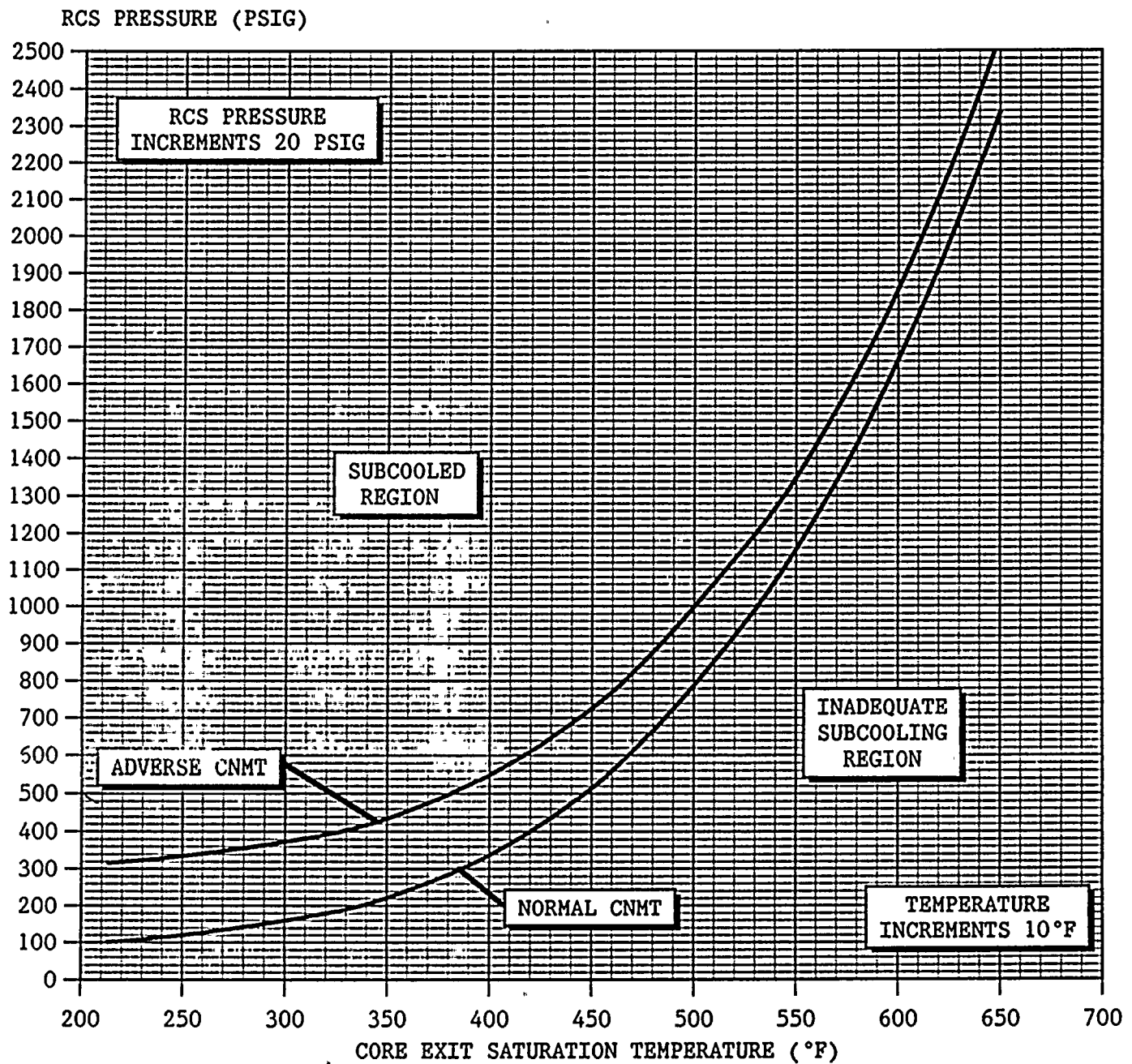
LOSS OF 12A AND/OR 12B TRANSFORMER

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FIGURE MIN SUBCOOLING

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





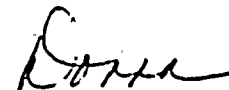
May 15, 1991

To Copy Holder # 18423 :

Enclosed please find a copy of procedure AP-ELEC.1, LOSS OF 12A and/OR 12B TRANSFORMER. This was sent to you on May 3, 1991. The first copy sent out does not include a Step 4.

Sorry for any inconvenience. Any questions, please call me on x-206.

Thanks,



Donna Pinkard



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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 10/6/93

  
PLANT SUPERINTENDENT

10-8-93  
EFFECTIVE DATE

CATEGORY 1.0

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



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A. PURPOSE - This procedure provides actions required to stabilize plant conditions following a loss of reactor coolant flow.

B. ENTRY CONDITIONS/SYMPTOMS

1. SYMPTOMS - The symptoms of LOSS OF REACTOR COOLANT FLOW are:
  - a. Annunciator A-17, MOTOR OFF RCP CCWP, lit, or
  - b. Annunciator B-29, RCP BREAKER CHANNEL ALERT, lit, or
  - c. Low RCS flow indicated in either or both loops and verified by more than one indication, or
  - d. Steam flow rapidly decreasing in one loop and rapidly increasing in the other loop.
  - e. Annunciator B-27, (28), RCS Loop A(B) Lo Flow Channel Alert.





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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****  <u>CAUTION</u>            IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OR SI OCCURS, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.            *****</p>		
1	Check RCS flows:	
	a. Verify at least one loop operating: <ul style="list-style-type: none"> <li>o One RCP running</li> <li>o Flow greater than 91% in one loop</li> </ul>	a. <u>IF</u> reactor trip breakers closed, <u>THEN</u> trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.  <u>IF</u> reactor trip breakers open, verify natural circulation per Attachment NC <u>AND</u> go to Step 2.
	b. Verify two loops operating: <ul style="list-style-type: none"> <li>o Both RCPs running</li> <li>o Flow greater than 91% in both loops</li> </ul>	b. <u>IF</u> power greater than 8%, <u>THEN</u> trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.  <u>IF</u> power less than 8%, <u>THEN</u> go to step 2.
	c. Return to procedure and step in effect	
2	Verify ROD CONTROL BANK SELECTOR In MANUAL	Place ROD CONTROL BANK SELECTOR switch in MANUAL.



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
***** CAUTION IF ONLY ONE RCP IS LOST, THEN A DECREASE (SHRINK) IN IDLE S/G LEVEL COUPLED WITH AN INCREASE (SWELL) IN OPERATING S/G LEVEL SHOULD BE ANTICIPATED. *****		
3	Monitor S/G Levels - TRENDING TO PROGRAM	Restore narrow range level to program.  IF S/G level can NOT be restored, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p><b>NOTE:</b> Temperatures in the idle loop may not be indicative of true Tavg and <math>\Delta T</math> values and may affect automatic control systems operation. Operating loop values should be used for control.</p>		
4	Establish Stable Plant Conditions:	
a.	Tavg - TRENDING TO TREF	a. Insert control rods or, if necessary decrease turbine load to match Tavg of the operating loop to Tref.
b.	PRZR pressure - TRENDING TO 2235 PSIG	b. Verify proper operation of PRZR heaters and spray or take manual control of PRZR pressure controller 431K. <u>IF</u> pressure can <u>NOT</u> be controlled, <u>THEN</u> refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.
c.	PRZR level - TRENDING TO PROGRAM	c. Verify proper operation of charging pump speed controllers <u>OR</u> take manual control of speed controllers to control PRZR level. <u>IF</u> letdown isolation has occurred, <u>THEN</u> place Letdown Loop B Cold Leg to RHX AOV-427 to close.
d.	Check S/G levels - TRENDING TO PROGRAM	d. Control feed flow as necessary to restore both S/G levels to 39%.
e.	Steam dump valves - CLOSED	e. Ensure proper operation of steam dump control system.



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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
***** CAUTION SHUTDOWN MARGIN REQUIREMENTS SHOULD BE VERIFIED (REFER TO O-3.1, BORON CONCENTRATION FOR XENON FREE ALL RODS IN MOST REACTIVE ROD STUCK OUT SHUTDOWN MARGIN). *****		
5	Check Reactor Status: o Power less than $2.5 \times 10^{-6}$ amps o Reactor Trip Breakers open	Initiate plant shutdown (Refer to appropriate section of O-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN).
6	Check Letdown Status a. Normal OR Excess Letdown in service. b. GO TO Step 8.	a. GO TO Step 7.





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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	<p>Establish Normal Letdown:</p> <ul style="list-style-type: none"> <li>a. Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM</li> <li>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> </li> <li>c. Place letdown controllers in MANUAL at 35% open <ul style="list-style-type: none"> <li>• TCV-130</li> <li>• PCV-135</li> </ul> </li> <li>d. Open AOV-427</li> <li>e. Open letdown orifice valves as necessary</li> <li>f. Place TCV-130 in AUTO at 105°F</li> <li>g. Place PCV-135 in AUTO at 250 psig</li> <li>h. Adjust charging pump speed and HCV-142 as necessary</li> </ul>	<p>Perform the following steps in sequence to establish excess letdown:</p> <ul style="list-style-type: none"> <li>o Place excess letdown divert valve, AOV-312, to NORMAL</li> <li>o Ensure CCW from excess letdown open, AOV-745</li> <li>o Ensure RCP seal return isolation valve open, MOV-313</li> <li>o Open excess letdown isolation valve, AOV-310</li> <li>o 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
<p><u>NOTE:</u> Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting requirements.</p>		
8	Notify Higher Supervision	
9	Return To Procedure Or Guidance In Effect	
<p>-END-</p>		



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AP-RCS.2 APPENDIX LIST

<u>TITLE</u>	<u>PAGES</u>
1) FIGURE MIN SUBCOOLING	1
2) ATTACHMENT NC	1



FIGURE MIN SUBCOOLING

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

