



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001

JOSEPH A. WIDAY
Plant Manager
Ginna Nuclear Plant

TELEPHONE
AREA CODE 716 546-2700



February 11, 2000

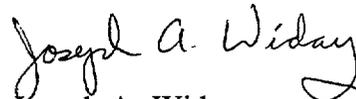
U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I
Washington, D.C. 20555

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 Index
ATT Index
ATT-7.0, Rev. 5
AP-CVCS.3, Rev. 2
AP-FW.1, Rev. 12
AP-TURB.2, Rev. 17
AP-TURB.3, Rev. 10
AP-TURB.5, Rev. 4

A045

PARAMETERS: DOC TYPES - PRAR PRATT PRAP PRER PRPT STATUS: EF QU 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
AP-CCW.1	LEAKAGE INTO THE COMPONENT COOLING LOOP	013	10/30/98	05/01/98	05/01/03	EF
AP-CCW.2	LOSS OF CCW DURING POWER OPERATION	013	08/17/99	08/17/99	08/17/04	EF
AP-CCW.3	LOSS OF CCW - PLANT SHUTDOWN	011	08/17/99	08/17/99	08/17/04	EF
AP-CR.1	CONTROL ROOM INACCESSIBILITY	016	01/11/00	01/11/00	01/11/05	EF
AP-CVCS.1	CVCS LEAK	012	05/01/98	05/01/98	05/01/03	EF
AP-CVCS.3	LOSS OF ALL CHARGING FLOW	002	02/11/00	02/26/99	02/26/04	EF
AP-CW.1	LOSS OF A CIRC WATER PUMP	010	07/16/98	05/01/98	05/01/03	EF
AP-ELEC.1	LOSS OF 12A AND/OR 12B BUSES	019	12/02/99	05/01/98	05/01/03	EF
AP-ELEC.2	SAFEGUARD BUSES, LOW VOLTAGE OR SYSTEM LOW FREQUENCY	009	03/22/99	03/22/99	03/22/04	EF
AP-ELEC.3	LOSS OF 12A AND/OR 12B TRANSFORMER (BELOW 350 F)	007	12/02/99	05/01/98	05/01/03	EF
AP-ELEC.14/16	LOSS OF SAFEGUARDS BUS 14/16	000	06/09/97	06/09/97	06/09/02	EF
AP-ELEC.17/18	LOSS OF SAFEGUARDS BUS 17/18	002	10/18/99	06/09/97	06/09/02	EF
AP-FW.1	PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER	012	02/11/00	02/27/98	02/27/03	EF
AP-IA.1	LOSS OF INSTRUMENT AIR	017	12/02/99	05/01/98	05/01/03	EF
AP-PRZR.1	ABNORMAL PRESSURIZER PRESSURE	011	12/02/99	12/02/99	12/02/04	EF
AP-RCC.1	CONTINUOUS CONTROL ROD WITHDRAWAL/INSERTION	006	02/24/96	05/14/98	05/14/03	EF
AP-RCC.2	RCC/RPI MALFUNCTION	008	11/16/98	02/06/97	02/06/02	EF
AP-RCC.3	DROPPED ROD RECOVERY	004	11/16/98	02/27/98	02/27/03	EF
AP-RCP.1	RCP SEAL MALFUNCTION	012	05/01/98	05/01/98	05/01/03	EF
AP-RCS.1	REACTOR COOLANT LEAK	014	04/14/99	05/01/98	05/01/03	EF
AP-RCS.2	LOSS OF REACTOR COOLANT FLOW	010	12/14/98	05/01/98	05/01/03	EF
AP-RCS.3	HIGH REACTOR COOLANT ACTIVITY	007	08/05/97	08/05/97	08/05/02	EF
AP-RCS.4	SHUTDOWN LOCA	011	12/02/99	05/01/98	05/01/03	EF
AP-RHR.1	LOSS OF RHR	013	01/25/99	05/01/98	05/01/03	EF

REPORT NO. 01
REPORT: NPSP0200
DOC TYPE: PRAP

GINNA NUCLEAR POWER PLANT
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ABNORMAL PROCEDURE

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PARAMETERS: DOC TYPES - PRAR PRATT PRAP PRER PRPT STATUS: EF QU 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
AP-RHR.2	LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS	007	05/15/97	03/21/95	03/21/00	EF
AP-SW.1	SERVICE WATER LEAK	015	10/18/99	06/03/98	06/03/03	EF
AP-TURB.1	TURBINE TRIP WITHOUT RX TRIP REQUIRED	010	02/12/99	10/10/97	10/10/02	EF
AP-TURB.2	TURBINE LOAD REJECTION	017	02/11/00	05/13/98	05/13/03	EF
AP-TURB.3	TURBINE VIBRATION	010	02/11/00	02/10/98	02/10/03	EF
AP-TURB.4	LOSS OF CONDENSER VACUUM	014	05/01/98	05/01/98	05/01/03	EF
AP-TURB.5	RAPID LOAD REDUCTION	004	02/11/00	07/10/95	07/10/00	EF
TOTAL FOR PRAP	31					

PARAMETERS: DOC TYPES - PRAR PRATT PRAP PRER PRPT STATUS: EF QU 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
ATT-1.0	ATTACHMENT AT POWER CCW ALIGNMENT	001	07/26/94	02/10/98	02/10/03	EF
ATT-2.1	ATTACHMENT MIN SW	004	06/26/98	02/10/98	02/10/03	EF
ATT-2.2	ATTACHMENT SW ISOLATION	006	03/25/99	08/11/98	08/11/03	EF
ATT-2.3	ATTACHMENT SW LOADS IN CNMT	003	01/25/95	12/31/99	12/31/04	EF
ATT-3.0	ATTACHMENT CI/CVI	005	01/25/99	01/06/99	01/06/04	EF
ATT-3.1	ATTACHMENT CNMT CLOSURE	003	01/25/99	01/25/99	01/25/04	EF
ATT-4.0	ATTACHMENT CNMT RECIRC FANS	003	07/26/94	05/13/98	05/13/03	EF
ATT-5.0	ATTACHMENT COND TO S/G	004	01/25/95	12/31/99	12/31/04	EF
ATT-5.1	ATTACHMENT SAFW .	006	07/07/98	12/31/99	12/31/04	EF
ATT-5.2	ATTACHMENT FIRE WATER COOLING TO TDAFW PUMP	003	01/14/99	01/14/99	01/14/04	EF
ATT-6.0	ATTACHMENT COND VACUUM	003	12/18/96	02/10/98	02/10/03	EF
ATT-7.0	ATTACHMENT CR EVAC	005	02/11/00	02/10/98	02/10/03	EF
ATT-8.0	ATTACHMENT DC LOADS	006	03/22/99	01/14/99	01/14/04	EF
ATT-8.1	ATTACHMENT D/G STOP	004	11/03/95	02/10/98	02/10/03	EF
ATT-8.2	ATTACHMENT GEN DEGAS	006	08/17/99	08/17/99	08/17/04	EF
ATT-8.3	ATTACHMENT NONVITAL	003	07/26/94	02/10/98	02/10/03	EF
ATT-8.4	ATTACHMENT SI/UV	004	04/24/97	02/10/98	02/10/03	EF
ATT-9.0	ATTACHMENT LETDOWN	006	04/07/97	01/06/99	01/06/04	EF
ATT-9.1	ATTACHMENT EXCESS L/D	002	07/26/94	02/10/98	02/10/03	EF
ATT-10.0	ATTACHMENT FAULTED S/G	005	10/03/96	05/13/98	05/13/03	EF
ATT-11.0	ATTACHMENT IA CONCERNS	002	04/07/97	08/11/98	08/11/03	EF
ATT-11.1	ATTACHMENT IA SUPPLY	002	04/07/97	08/11/98	08/11/03	EF
ATT-11.2	ATTACHMENT DIESEL AIR COMPRESSOR	000	04/03/98	04/03/98	04/03/03	EF
ATT-12.0	ATTACHMENT N2 PORVS	003	03/24/97	02/10/98	02/10/03	EF

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DOC TYPE: PRATT

GINNA NUCLEAR POWER PLANT
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EOP ATTACHMENTS

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PARAMETERS: DOC TYPES - PRAR PRATT PRAP PRER PRPT STATUS: EF QU 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
ATT-13.0	ATTACHMENT NC	002	07/26/94	02/10/98	02/10/03	EF
ATT-14.0	ATTACHMENT NORMAL RHR COOLING	002	04/07/97	09/23/99	09/23/04	EF
ATT-14.1	ATTACHMENT RHR COOL	004	05/01/98	05/01/98	05/01/03	EF
ATT-14.2	ATTACHMENT RHR ISOL	001	07/26/94	02/10/98	02/10/03	EF
ATT-14.3	ATTACHMENT RHR NPSH	002	08/01/97	01/06/99	01/06/04	EF
ATT-14.4	ATTACHMENT RHR SAMPLE	001	07/26/94	01/06/99	01/06/04	EF
ATT-14.5	ATTACHMENT RHR SYSTEM	002	07/26/94	02/10/98	02/10/03	EF
ATT-14.6	ATTACHMENT RHR PRESS REDUCTION	001	01/14/99	01/14/99	01/14/04	EF
ATT-15.0	ATTACHMENT RCP START	005	05/22/97	04/20/95	04/20/00	EF
ATT-15.1	ATTACHMENT RCP DIAGNOSTICS	003	04/24/97	02/10/98	02/10/03	EF
ATT-15.2	ATTACHMENT SEAL COOLING	003	05/22/97	02/10/98	02/10/03	EF
ATT-16.0	ATTACHMENT RUPTURED S/G	009	01/11/00	01/11/00	01/11/05	EF
ATT-17.0	ATTACHMENT SD-1	007	03/25/99	02/03/95	02/03/00	EF
ATT-17.1	ATTACHMENT SD-2	005	09/26/96	09/10/96	09/10/01	EF
ATT-18.0	ATTACHMENT SFP - RWST	004	10/08/97	02/10/98	02/10/03	EF
ATT-20.0	ATTACHMENT VENT TIME	003	07/26/94	02/10/98	02/10/03	EF
ATT-21.0	ATTACHMENT RCS ISOLATION	001	07/26/94	02/10/98	02/10/03	EF
ATT-22.0	ATTACHMENT RESTORING FEED FLOW	001	02/12/99	03/24/97	03/24/02	EF
ATT-23.0	ATTACHMENT TRANSFER 4160V LOADS	000	02/26/99	02/26/99	02/26/04	EF

TOTAL FOR PRATT 43

EOP: ATT-7.0	TITLE: ATTACHMENT CR EVAC	REV: 5 PAGE 1 of 2
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Responsible Manager W. Williams Date 2-11-2000

The following are duties of Personnel during a Control Room Evacuation:

NOTE: Each person shall maintain an account listing the times and significant actions taken. The HCO will transcribe these into the Official Log at a convenient time.

SHIFT SUPERVISOR (SS) -

Will direct overall plant operations and recovery actions. The Shift Supervisor should maintain communication with the various groups working to recover from the evacuation. No specific duty station is assigned.

CONTROL ROOM FOREMAN (CRF) -

Will go to the Screenhouse to ensure 1 SW Pump is running in each SW Loop, THEN will assist the HCO in transferring equipment to local control. After completion of the transfer the CRF will direct the operator actions to recover the plant.

HEAD CONTROL OPERATOR (HCO) -

Will go to AFW pump area taking the operating (O) procedures book, the variable boration/dilution tables and the curve book with him and will transfer equipment to local control.

CONTROL OPERATOR (CO) -

Will go to the local operating station in the Charging Pump Room and await direction.

PRIMARY AUX OPERATOR -

Will go to the local operating stations in the boric acid tank room.

SHIFT TECHNICAL ADVISOR (STA) -

Will go to D/G A room and verify emergency AC busses 14 and 18 energized and will then proceed to the AFW pump area to assist the Head Control Operator while remaining cognizant of plant conditions.

OTHER PERSONNEL -

Will assume fire fighting or other duties as directed by the Shift Supervisor or Control Room Foreman.

EOP: ATT-7.0	TITLE: ATTACHMENT CR EVAC	REV: 5 PAGE 2 of 2
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To locally close a SW Pump Breaker, perform the following:

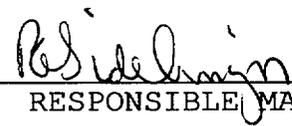
- a. Remove control power fuses for the breaker to be closed.
- b. Remove cap on front of the breaker.
- c. Install the removable handle.
- d. Hold depressed AND rotate UNTIL breaker closure.
- e. Remove handle.

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 1 of 22
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23


RESPONSIBLE MANAGER

2-11-2000

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 2 of 22
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- A. PURPOSE - This procedure provides the necessary instructions to mitigate the consequences of a loss of all charging flow or gas binding of charging pumps.
- B. ENTRY CONDITIONS/SYMPTOMS
1. ENTRY CONDITIONS/SYMPTOMS - The symptoms of a loss of all charging or gas binding charging pumps are;
 - a. Annunciator B-9 (B-10), RCP A(B) LABYR SEAL LO DIFF PRESS 15" H2O, lit, or
 - b. Seal injection flow low or erratic, or
 - c. Charging line flow low or erratic, or
 - d. Charging pump discharge pressure low or erratic, or
 - e. Annunciator F-14, CHARGING PUMP SPEED, lit, or
 - f. Annunciator A-2, VCT LEVEL 14%86, if gas intrusion to charging pumps is indicated, or
 - g. Annunciator A-4, REGEN HX LETDOWN OUT HI TEMP 395°F, lit, or
 - h. Annunciator A-10, VCT PRESSURE 15PSI65, if gas intrusion to charging pumps is indicated, or
 - i. Annunciator G-25, MOTOR OFF CTR SECT PUMPS EXCEPT MAIN & AUX FEED PUMPS

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

1 Check Charging Pumps - ANY RUNNING

Start two charging pumps. IF at least one pump cannot be started, THEN go to step 4.

2 Check Charging Pump Conditions:

Evaluate System Conditions

- o Check charging pump discharge pressure - GREATER THAN RCS PRESSURE AND STABLE
- o Check charging flow - NORMAL
- o Check RCP labyrinth seal dp - GREATER THAN 15 INCHES AND STABLE

- o AO Reports
 - Indications of CVCS leakage
 - Increased sump pump operation
 - Abnormal indications for operating charging pumps
- o Rad Monitors
- o VCT Indications
- o Aux Bldg Sump Indication
 - Frequency of level alarms
 - Increased sump pump operation

IF a charging system leak is suspected, THEN go to AP-CVCS.1, CVCS LEAK.

IF NOT, THEN stop all charging pumps and go to step 4.

3 Return To Guidance In Effect

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

4 Isolate Letdown

- a. Close Loop B cold leg to REGEN Hx, AOV-427
- b. Close letdown orifice valves (AOV-200A, AOV-200B, and AOV-202)
- c. Close excess letdown isolation valve, AOV-310.

5 Check CCW To RCP Thermal Barriers

- o Annunciator A-7, RCP 1A CCW RETURN HI TEMP OR LOW FLOW-EXTINGUISHED
- o Annunciator A-15, RCP 1B CCW RETURN HI TEMP OR LOW FLOW - EXTINGUISHED

IF CCW lost to RCP(s), THEN perform the following:

- a. Trip the Rx.
- b. Trip affected RCP(s)
- c. Close seal return AOV for affected RCP(s)
 - RCP A - AOV-270A
 - RCP B - AOV-270B
- d. Go to E-0, REACTOR TRIP OR SAFETY INJECTION.

* 6 Monitor PRZR Level - GREATER THAN 5%

IF reactor trip breakers are closed, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 5 of 22
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

7 Check VCT Makeup System:

a. Verify the following:

- 1) RMW mode selector switch in AUTO
- 2) RMW control armed - RED LIGHT LIT

b. Check VCT level:

- o Level - GREATER THAN 20%
-OR-
- o Level - STABLE OR INCREASING

a. Adjust controls as necessary.

b. Check letdown divert valve, LCV-112A, aligned to VCT.

1) Manually increase VCT makeup flow as follows:

- a) Ensure BA transfer pumps and RMW pumps running.
- b) Adjust RMW flow control valve, HCV-111, to increase flow.
- c) Increase boric acid flow as necessary to maintain required concentration.

IF VCT level can NOT be maintained, THEN refer to ER-CVCS.1, REACTOR MAKEUP CONTROL MALFUNCTION, if necessary.

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 6 of 22
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8 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>THEN</u> perform the following:
		1) Ensure charging pump suction aligned to RWST
		o LCV-112B open
		o LCV-112C closed
		<u>IF</u> LCV-112B and/or LCV-112C <u>CAN NOT</u> be operated <u>THEN</u> perform the following:
		a) Stop charging pump A and place in PULL STOP.
		b) Dispatch AO to locally open manual charging pump suction from RWST (V-358 located in charging pump room).
		c) <u>WHEN</u> V-358 open, <u>THEN</u> direct AO to close V-268 to isolate charging pumps B and C from VCT (V-268 located in charging pump room).
		2) Direct AO to isolate H2 and N2 to the VCT.
		• Close V-261 • Close V-262
		3) Continue with step 9. When VCT level greater than 20%, <u>THEN</u> do step 8b.
	b. Verify charging pumps aligned to VCT	b. Manually align valves as necessary.
	o LCV-112C open	
	o LCV-112B closed	

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 7 of 22
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Fill Charging Pumps As Necessary:

a. IF gas binding is suspected, THEN perform the following:

a. Go to step 10.

1) Close discharge isolation valve for selected charging pump(s)

- Charging Pump A - V-287
- Charging Pump B - V-288
- Charging Pump C - V-291

2) Direct an AO to throttle open discharge drain valve.

- Charging Pump A - V-292C
- Charging Pump B - V-292D
- Charging Pump C - V-292E

3) WHEN sump tank level increase is noted, THEN close discharge drain valve

- Charging Pump A - V-292C
- Charging Pump B - V-292D
- Charging Pump C - V-292E

4) Open discharge isolation valve for selected charging pump(s)

- Charging Pump A - V-287
- Charging Pump B - V-288
- Charging Pump C - V-291

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: A load reduction may be required if charging pump suction is aligned to the RWST.

10 Try To Restore Normal Charging:

- a. Start one charging pump
- b. Check charging pump conditions:
 - o Charging pumps discharge pressure - ABOVE RCS PRESSURE AND STABLE
 - o Charging flow - NORMAL
- c. Start second charging pump
- d. Adjust charging pump speed and HCV-142 as necessary to restore PRZR level and labyrinth seal D/P

- a. IF no charging pumps can be started, THEN go to step 14.
- b. Perform the following:
 - 1) Stop charging pump.
 - 2) Continue efforts to restore charging capability AND go to step 14.

11 Check PRZR Level

- a. Check PRZR level - INCREASING
- b. Check PRZR level - GREATER THAN 13%

- a. IF Tavg is stable or increasing, THEN go to AP-RCS.1, REACTOR COOLANT LEAK.
- b. WHEN PRZR level increases to greater than 13%, THEN do step 12.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
12	<p>Establish Normal Letdown:</p> <ul style="list-style-type: none"> a. Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM b. Verify the following switches in CLOSE: <ul style="list-style-type: none"> • 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 40% open <ul style="list-style-type: none"> • 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 to control PRZR level and RCP labyrinth seal D/P. 	<p>Perform the following steps in sequence to establish excess letdown:</p> <ul style="list-style-type: none"> 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

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

13 Return To Procedure Or
Guidance In Effect

CAUTION

IF CHARGING CAPABILITY IS RESTORED DURING SUBSEQUENT STEPS THE OPERATOR
SHOULD RETURN TO STEP 10 FOR RECOVERY ACTIONS.

14 Initiate Load Reduction

- a. Reduce load at 5%/min (Refer to AP-TURB.5, RAPID LOAD REDUCTION).
- b. Transfer 4160V Auxiliary load from #11 Transformer (Refer to Attachment TRANSFER 4160V LOADS).
- c. WHEN turbine load is 15 MW, THEN trip the turbine.

EOP:
AP-CVCS.3

TITLE:
LOSS OF ALL CHARGING FLOW

REV: 2
PAGE 11 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: o The actions of step 14 must be complete before continuing in this procedure.

o Steps 15 through 20 may be performed concurrently.

15 Shutdown The Reactor

- a. Place rod control in MANUAL
 - b. Drive control rods until Control Bank A is at 5 steps.
 - c. Place rod control in SBA position.
 - d. Drive shutdown bank A to 5 steps.
 - e. Press Rx trip pushbutton.
 - f. Verify Rx Trip breakers open.
 - g. Verify all control and shutdown rods on bottom.
- f. Dispatch A0 to locally open reactor trip breakers

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

16 Verify Proper Operation Of Steam Dump:

- a. Verify annunciator G-15, STEAM DUMP ARMED - LIT
- b. Condenser steam dump operating in AUTO
- c. Tavg - TRENDING TO PROGRAM

- a. Place steam dump mode selector switch to MANUAL.
- b. IF steam dump NOT available, THEN perform the following:
 - 1) Adjust S/G ARV setpoints to 1005 psig and verify proper operation.
 - 2) IF power is greater than 8%, THEN ensure reactor trip and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
- c. IF temperature less than 547°F and decreasing, THEN perform the following:
 - 1) Stop dumping steam
 - 2) IF cooling continues, THEN close both MSIVs.

IF temperature greater than 547°F and increasing, THEN dump steam to stabilize and slowly decrease temperature to 547°F.

IF Tavg can NOT be controlled, THEN manually trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

IF ANY S/G LEVEL ABOVE 52%, THEN AFW FLOW MAY BE THROTTLED IMMEDIATELY TO PREVENT S/G ISOLATION.

NOTE: Maintain Reactor power less than 2%. This is within the capacity of MDAFW pumps.

17 Check S/G Feed Flow Status:

- a. Manually start both MDAFW pumps
- b. Verify AFW flow - ESTABLISHED
 - b. Perform the following:
 - 1) Establish MFW flow using MFW regulating valve bypass valves.
 - IF MFW NOT available, THEN manually start TDAFW pump and establish flow as necessary.
 - 2) Go to Step 18.
- c. Verify MFW flow control valves - CLOSED
 - MFW regulating valves
 - MFW bypass valves
- c. Place A and B MFW regulating and bypass valve controllers in manual at 0% demand.
- d. Close MFW pump discharge valves
 - MOV-3977, A MFW pump
 - MOV-3976, B MFW pump
- e. Stop any running MFW pump and place in PULL STOP
- f. Close service water block valve to the secured MFW pump oil cooler
 - MFW Pump A V-4701
 - MFW Pump B V-4702
- g. Check S/G level - TRENDING TO 52%
- g. Adjust MDAFW pump flow as necessary to restore S/G level.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

18 Establish Normal AFW Pump Shutdown Alignment:

a. Place AFW bypass switches to DEF

b. Verify the following:

- o Both S/G levels - STABLE OR INCREASING
- o Total AFW flow - LESS THAN 200 GPM

b. Continue with Step 19. WHEN conditions met, THEN do Steps 18c through d.

c. Close MDAFW pump discharge valves

- MOV-4007
- MOV-4008

d. Open AFW bypass valves as necessary to control S/G levels

- AOV-4480
- AOV-4481

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 15 of 22
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
19	Establish Normal Shutdown Alignment:	
	a. Check condenser - AVAILABLE	a. Dispatch A0 to perform Attachment SD-2.
	b. Perform the following as necessary:	
	o Open generator disconnects	
	<ul style="list-style-type: none"> • 1G13A71 • 9X13A73 	
	o Place voltage regulator to OFF	
	o Open turbine drain valves	
	o Rotate reheater steam supply controller cam to close valves	
	o Place reheater dump valve switches to HAND	
	o Stop all but one condensate pump	
	c. Verify Bus 11A and Bus 11B energized - BOTH BUSSES GREATER THAN 4 KV	c. <u>IF</u> either bus <u>NOT</u> energized, <u>THEN</u> refer to 0-6.9.2, ESTABLISHING AND/OR TRANSFERRING OFFSITE POWER TO BUS 12A/ BUS 12B.
	d. Dispatch A0 to perform Attachment SD-1	

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

THE ACTIONS OF STEP 15 MUST BE COMPLETE BEFORE CONTINUING IN THIS PROCEDURE.

21 Check RCPs - BOTH RUNNING

IF only one RCP is running, THEN go to step 23.

IF no RCPs are running, THEN perform the following:

- a. Ensure 2 control rod shroud fans running.
- b. Go to ES-0.2, NATURAL CIRCULATION COOLDOWN, step 1.

NOTE: The temperature limit of 530°F is based on two loop SDM requirements.

22 Initiate RCS Cooldown To 540°F

- a. Place Steam Dump Mode Selector Switch to MANUAL
- b. Dump steam to condenser from intact S/G(s)
- c. Establish and maintain cooldown rate in RCS cold legs - LESS THAN 100°F/HR
- d. RCS T cold - LESS THAN 540°F
- e. Stop RCS cooldown and stabilize T cold between 530°F and 540°F
- f. Go to step 24

- b. Manually or locally dump steam using intact S/Gs ARV.
- d. Continue with Step 24. WHEN RCS T cold less than 540°F THEN do step 22e.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
23	Maintain RCS TAVG - STABLE AT 547°F a. Dump steam to condenser from intact S/G(s) b. Establish and maintain TAVG - STABLE AT 547°F	a. Manually or locally dump steam using intact S/Gs ARV.
24	Depressurize RCS To Less Than 1950 PSIG Using Normal Spray	

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION
 SI ACTUATION CIRCUITS WILL AUTOMATICALLY UNBLOCK IF PRZR PRESSURE INCREASES TO GREATER THAN 1992 PSIG.

25 Monitor SI Block Criteria:

- a. Check the following:
 - o PRZR pressure - LESS THAN 1950 PSIG
 - OR-
 - o LOW PRZR PRESS BLOCK SAF INJEC status light - LIT
- b. Place SI block switches to BLOCK
 - Train A
 - Train B
- c. Verify SAFETY INJECTION BLOCKED status light - LIT
- a. Return to Step 24.
- c. Maintain PRZR pressure greater than 1750 psig and S/G pressure greater than 514 psig until SI blocked.
- d. Stop RCS depressurization AND maintain RCS pressure less than 1950 psig and stable

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 20 of 22
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NOTE: Refer to 0-9.3, IMMEDIATE NOTIFICATION, for reporting requirements. |

26 Restore PRZR Level

- | | |
|---|---|
| <p>a. Verify RCS T cold - LESS THAN 540°F (stable at 547°F for one RCP)</p> <p>b. Ensure at least one SI pump suction valve from RWST open</p> <ul style="list-style-type: none"> • MOV-825A • MOV-825B <p>c. Start one SI Pump</p> <p>d. Depressurize RCS to between 1350 psig and 1450 psig using normal spray</p> <p>e. Verify injection flow to RCS</p> <p>f. Verify PRZR level greater than 13%</p> <p>g. Energize PRZR heaters as necessary to return PRZR to saturation conditions</p> | <p>a. Perform the following:</p> <ul style="list-style-type: none"> o <u>IF</u> both RCPs running, <u>THEN</u> return to step 22. <p style="text-align: center;">-OR-</p> <ul style="list-style-type: none"> o <u>IF</u> only one RCP running, <u>THEN</u> return to step 23. <p>f. Continue with step 27. <u>WHEN</u> PRZR level is greater than 13%, <u>THEN</u> do step 26g.</p> |
|---|---|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

OBSERVE SAFETY INJECTION PUMP STARTING DUTY LIMITS PER P-7, SAFETY INJECTION AND CONTAINMENT SPRAY SYSTEMS.

NOTE: Adjust RCS pressure, if required, between 1350 psig and 1450 psig as necessary to obtain SI flow.

***27 Maintain Stable Plant Conditions**

- | | |
|---|---|
| <p>a. Maintain RCS pressure between 1350 psig and 1450 psig using PRZR heaters and normal PRZR spray</p> <p>b. Maintain PRZR level between 35% and 50% by starting and stopping one SI pump as needed</p> <p>c. Maintain RCS T cold between 530°F and 540°F (stable at 547°F for one RCP) using steam dump to condenser</p> | <p>a. <u>IF</u> normal spray not available, <u>THEN</u> maintain RCS pressure between 1350 psig and 1450 psig using PRZR heaters.</p> <p>c. <u>IF</u> condenser not available, <u>THEN</u> maintain RCS T cold between 530°F and 540°F (stable at 547°F for one RCP) using intact S/G(s) ARV.</p> |
|---|---|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

28 Consult Plant Staff For Long Term Recovery

- o Determine method of VCT level control
- o Drain VCT to Aux Bldg Sump Tank through one charging pump drain valve
- OR-
- o Divert RCP seal return to PRT by closing MOV-313
- o Refer to O-2.1,NORMAL SHUTDOWN TO HOT SHUTDOWN
- o Refer to O-2.2, PLANT SHUTDOWN FROM HOT SHUTDOWN TO COLD CONDITIONS
- o Review ITS LCOs (3.1.1, 3.4.5, 3.5.1, 3.5.2, 3.5.4, TRM 3.1.1)
- o Review SDM requirements (Refer to O-2.1, O-3.1)
- o Determine preferred water source to SI pumps
 - RWST
 - BAST
- o Review SI Accumulator isolation criteria (refer to O-2.2)
- o Determine if excess letdown should be placed in service
- o Determine how long RCPs should be run without seal injection (generally less than 24 hours)
- o Determine method to increase RCP seal cooling, if necessary

-END-

EOP: AP-CVCS.3	TITLE: LOSS OF ALL CHARGING FLOW	REV: 2 PAGE 1 of 1
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AP-CVCS.3 APPENDIX LIST

TITLES

- 1) Attachment SD-1 (ATT-17.0)
- 2) Attachment Excess L/D (ATT-9.1)
- 3) Attachment Transfer 4160V Loads (ATT-23.0)

EOP: AP-FW.1	TITLE: PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER	REV: 12 PAGE 1 of 11
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

2-11-2000
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-FW.1	TITLE: PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER	REV: 12 PAGE 2 of 11
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A. PURPOSE - This procedure provides the steps necessary to respond to a MFW system malfunction resulting in a decrease in or complete loss of main feedwater.

B. ENTRY CONDITIONS/SYMPTOMS

1. SYMPTOMS - The symptoms of PARTIAL OR COMPLETE LOSS OF OF MAIN FEEDWATER are;

- a. Annunciator G-3(5), S/G A(B) LEVEL DEVIATION $\pm 7\%$, lit, or
- b. Annunciator G-19(21), S/G A (B) FLOW MISMATCH, lit, or
- c. Annunciator G-20, ADFCS SYSTEM SWITCH TO MANUAL, lit, or
- d. Annunciator K-18, MAIN FEEDWATER PUMPS TRIPPED, lit, or
- e. Low indicated MFW pump suction flow on 1 pump, or
- f. MFW pump indicates tripped, or
- g. MFW pump discharge valve indicates shut.

EOP:

AP-FW.1

TITLE:

PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: IF power reduction is required the thumb rule for initial boron addition is ~2 gal/% load reduction. Refer to OPG-REACTIVITY-CALC if desired.

1 Check MFW Requirements:

a. Power - GREATER THAN 50%

b. Both MFW pumps - RUNNING

a. IF power less than 50%, THEN go to Step 2.

b. IF only one MFW pump has tripped, THEN perform the following:

1) Start all 3 AFW pumps and verify flow.

2) Decrease power rapidly to less than 50%.

3) Go to Step 3.

IF both MFW pumps have tripped, THEN ensure reactor trip and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

c. Go to Step 3

EOP:

AP-FW.1

TITLE:

PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER

REV: 12

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

2 Verify At Least One MFW Pump
- RUNNING

Perform the following:

- a. Start all 3 AFW pumps and verify flow.
- b. IF turbine previously latched, THEN ensure turbine trip and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED OR E-0, REACTOR TRIP or SAFETY INJECTION.

IF turbine NOT previously latched, THEN perform the following:

- 1) Reduce reactor power to less than 2%.
- 2) Go to Step 11.

3 Verify MFW Pump Suction Pressure - GREATER THAN 185 PSIG

Perform the following:

- a. Verify standby condensate pump running, if required.
- b. Verify condensate bypass valve open.
- c. Place Hotwell level controller in MANUAL at 50%.
- d. Place trim valve controller to manual and close trim valves.
- e. Check if condensate booster pumps have tripped and start as necessary.

EOP:

AP-FW.1

TITLE:

PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

4 Verify Adequate MFW Flow:

- o A MFW flow - GREATER THAN OR EQUAL TO A STEAM FLOW
- o B MFW flow - GREATER THAN OR EQUAL TO B STEAM FLOW

Check MFW regulating valves controlling in AUTO. IF NOT, THEN control MFW flow in MANUAL.

IF MFW flow can NOT be controlled, THEN, trip the turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, or E-0, REACTOR TRIP OR SAFETY INJECTION.

5 Check S/G Levels:

- o Levels - GREATER THAN 17%
- o Levels - TRENDING TO 52%

IF S/G levels can NOT be restored, THEN trip the reactor AND go to E-0, REACTOR TRIP OR SAFETY INJECTION.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

6 Establish Stable Plant Conditions:

a. Tavg - TRENDING TO TREF

a. Perform the following:

1) Verify AUTO control rod motion as required. IF NOT, THEN place rod control bank selector switch to MANUAL and adjust control rods as necessary.

2) Borate if required for power reduction.

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. IF PRZR pressure can NOT be controlled, THEN refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.

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.

d. Rod insertion limit alarms - EXTINGUISHED

d. Borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).

e. Narrow range S/G levels - TRENDING TO 52%

e. Ensure MFW regulating valves controlling in AUTO, OR control feed water in MANUAL.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

7 Check Status Of MFW System:

- | | |
|--|---|
| <ul style="list-style-type: none"> a. Check MFW pump suction pressure: <ul style="list-style-type: none"> o Pressure - GREATER THAN 200 PSIG o Pressure - STABLE b. Automatic feedwater control - AVAILABLE c. Restore feedwater control system to AUTO if necessary | <ul style="list-style-type: none"> a. Return to Step 3. b. Continue with Step 8. <u>WHEN</u> malfunction identified, <u>THEN</u> do Steps 7c. |
|--|---|

8 Check Status Of Condensate System:

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Verify condensate bypass valve - CLOSED b. Verify hotwell level - AT SETPOINT c. Place hotwell level controller in AUTO d. Stop condensate pump if desired e. Verify trim valves in AUTO | <ul style="list-style-type: none"> a. <u>WHEN</u> conditions permit, <u>THEN</u> close valve. b. Manually restore hotwell level to setpoint. e. Adjust trim valve controller to desired pressure and place controller in AUTO. |
|---|---|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Establish Normal Plant Conditions:

- | | |
|--|---|
| <p>a. Ensure EH control as desired</p> <p>b. Verify steam dump controller, HC-484, in AUTO at 1005 psig</p> <p>c. Verify annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED</p> <p>d. Verify PRZR pressure control in AUTO</p> <p>e. Ensure PRZR Heaters restored:</p> <ul style="list-style-type: none"> o PRZR proportional heater breaker - CLOSED o PRZR backup heater breaker - RESET/IN AUTO <p>f. Verify PRZR level control in AUTO</p> <p>g. Verify Rod Control Selector Switch in AUTO</p> | <p>c. <u>IF</u> Tavg within 5°F of Tref, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> 1) Ensure steam dump valves closed. 2) Reset steam dump. <p>d. Place PRZR pressure control in AUTO as desired.</p> <ul style="list-style-type: none"> • 431K master controller • PRZR spray valve controllers <p>f. Place one charging pump speed controller in AUTO if desired.</p> <p>g. Place Rod Control Selector Switch in AUTO if desired.</p> |
|--|---|

EOP:

AP-FW.1

TITLE:

PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER

REV: 12

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

10 Restore AFW System To Auto Standby:

- | | |
|---|---|
| a. Verify S/G level - TRENDING TO 52% | a. <u>IF</u> level low, <u>THEN</u> return to Step 4. <u>WHEN</u> S/G levels return to 52%, <u>THEN</u> do Steps 10b through g. |
| b. Close TDAFW pump steam supply valves | |
| c. Isolate S/G blowdowns | |
| d. Stop MDAFW pumps and place switches in AUTO | |
| e. Verify AFW pump discharge valves - OPEN <ul style="list-style-type: none">• MOV-4007• MOV-4008• MOV-3996 | e. Manually open valves. |
| f. Verify TDAFW pump flow control valves - OPEN <ul style="list-style-type: none">• AOV-4297• AOV-4298 | f. Manually open valves. |
| g. Restore S/G blowdowns to desired flow rate | |
| h. Go to Step 12 | |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

11 Establish Stable Plant Conditions:

- | | |
|---|---|
| <p>a. Verify reactor power - LESS THAN 2%</p> | <p>a. Insert control rods as necessary to reduce reactor power to less than 2%.</p> |
| <p>b. PRZR pressure - TRENDING TO 2235 PSIG</p> | <p>b. Verify proper operation of PRZR heaters and spray <u>OR</u> 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.</p> |
| <p>c. PRZR level - TRENDING TO PROGRAM</p> | <p>c. Verify proper operation of charging pump speed controllers <u>OR</u> take manual control of speed controllers to control PRZR level.</p> |
| <p>d. Rod insertion limit alarms - EXTINGUISHED</p> | <p>d. <u>IF</u> the reactor is to remain critical, <u>THEN</u> borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).</p> |
| <p>e. Tavg - STABLE AT APPROXIMATELY 547°F</p> | <p>e. Verify proper operation of steam dump <u>OR</u> manually control steam dump as necessary.</p> |
| <p>f. Narrow range S/G levels - TRENDING TO 52%</p> | <p>f. Verify MDAFW pumps operating as necessary to restore S/G level to 52%.</p> |

EOP: AP-FW.1	TITLE: PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER	REV: 12 PAGE 11 of 11
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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

12 Notify Higher Supervision

13 Return To Procedure Or
Guidance In Effect

-END-

EOP: AP-TURB.2	TITLE: TURBINE LOAD REJECTION	REV: 17 PAGE 1 of 9
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

Richard G. ...
RESPONSIBLE MANAGER

2-11-2000
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-TURB.2	TITLE: TURBINE LOAD REJECTION	REV: 17 PAGE 2 of 9
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- A. PURPOSE - This procedure provides the guidance necessary to control the plant during a transient resulting from an unanticipated turbine/secondary plant load decrease.
- B. ENTRY CONDITIONS/SYMPTOMS
1. SYMPTOMS - The symptoms of TURBINE LOAD REJECTION are;
 - a. Annunciator F-30, OPΔT TURBINE RUNBACK, lit, or
 - b. Annunciator F-31, OTΔT TURBINE RUNBACK, lit, or
 - c. Unexplained decrease in main generator output.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

ANY ΔT RUNBACK SIGNAL WILL BLOCK AUTO AND MANUAL OUT MOTION OF ROD CONTROL SYSTEM.

NOTE: The thumb rule for initial boron addition is ~2 gal/% load reduction. Refer to OPG-REACTIVITY-CALC if desired.

- * 1 Monitor RCS Tavg
 - o Tavg - GREATER THAN 545°F
 - o Tavg - LESS THAN 566°F

Verify AUTO control rod motion as required. IF NOT, THEN place rod control bank selector switch to MANUAL and adjust control rods as necessary.

IF Tavg is outside limits AND CANNOT be controlled, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

2 Check Steam Dump Status:

a. Annunciator F-15, RCS TAVG DEV,
EXTINGUISHED

a. Perform the following:

- 1) Place STEAM DUMP MODE
SELECTOR Switch to MANUAL.
- 2) Place steam dump controller,
HC-484, to MANUAL.
- 3) Operate steam dump valves
manually as necessary.
- 4) Go to Step 3.

b. Steam dump armed and operating:

b. IF steam dump required but NOT
operating, THEN perform the
following:

- o Annunciator G-15, STEAM DUMP
ARMED - LIT
- o Steam dump operating to
restore Tav_g to within 5°F of
T_{ref}

- 1) Place STEAM DUMP MODE
SELECTOR Switch to MANUAL.
- 2) Place steam dump controller,
HC-484, to MANUAL.
- 3) Operate steam dump valves
manually as necessary.

3 Verify Tav_g - TRENDING TO TREF

Place ROD CONTROL BANK SELECTOR
switch to MANUAL and insert control
rods as necessary to restore Tav_g
to Tref.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>4 Monitor Plant Parameters - CONTROLLING AT OR TRENDING TO PROGRAM VALUES</p> <ul style="list-style-type: none"> • PRZR Pressure • PRZR Level • S/G Level 	<p><u>IF</u> any parameter is approaching a trip setpoint <u>AND</u> CANNOT be controlled, <u>THEN</u> trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.</p>	
<p>5 Check Turbine Runback Criteria:</p>	<p>a. Any ΔT annunciator - LIT</p> <ul style="list-style-type: none"> • F-30, OPΔT TURBINE RUNBACK • F-31, OTΔT TURBINE RUNBACK <p>b. ΔT runback occurring as required</p>	<p>a. Go to Step 6.</p> <p>b. Place EH in MANUAL and reduce turbine load as necessary.</p>
<p><u>NOTE:</u> If the cause of the runback is diagnosed as a failed channel, and is continuing, the turbine may be placed in manual to terminate the runback when < 75% reactor power.</p>		
<p>6 Check Turbine Power - STABLE</p>		<p>Determine cause of continued power reduction and stabilize load if possible.</p>
<p>7 Check Main Generator Load - GREATER THAN 15 MW</p>		<p><u>IF</u> load can <u>NOT</u> be stabilized above 15 MW, <u>THEN</u> trip turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.</p>

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION
 IF STEAM DUMP CONTINUES FOR A SIGNIFICANT LENGTH OF TIME, CONDENSATE TEMPERATURE AND CONDENSER BACK PRESSURE SHOULD BE MONITORED.

8 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 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. |
| d. Steam dump valves - CLOSED | d. Ensure proper operation of steam dump control system. |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Check REGEN Hx Letdown Indications:

- o Annunciator A-4, REGEN HX LETDOWN OUT HI TEMP 395°F - EXTINGUISHED
- o REGEN Hx letdown outlet temperature - STABLE OR DECREASING

Adjust charging flow and HCV-142 as necessary to control REGEN Hx letdown outlet temperature.

IF REGEN Hx letdown outlet temperature can NOT be controlled, THEN perform the following:

- a. Close all letdown orifice valves (AOV-200A, AOV-200B and AOV-202).
- b. Close loop B to REGEN Hx isolation valve (AOV-427).

10 Verify Cause Of Turbine Load Rejection - IDENTIFIED

Attempt to determine and correct cause of turbine load rejection.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Establish Normal Plant Conditions:	
	a. Ensure EH control as desired	
	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 5°F of Tref, <u>THEN</u> perform the following:
		1) Ensure steam dump valves closed.
		2) Reset steam dump.
	d. Rod insertion limit alarms - EXTINGUISHED	d. <u>IF</u> any ΔT channel failed, <u>THEN</u> determine actual RIL from the COLR. <u>IF</u> alarm valid, <u>THEN</u> borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).
	e. NIS PR ΔI - WITHIN $\pm 5\%$ OF TARGET VALUE	e. Borate/dilute to restore ΔI to within limits.
	f. Verify charging pump speed control in AUTO	f. Place charging pump speed control in AUTO if desired.
	g. Verify Rod Control Selector Switch in AUTO	g. Place Rod Control Selector Switch in AUTO if desired.

EOP: AP-TURB.2	TITLE: TURBINE LOAD REJECTION	REV: 17 PAGE 9 of 9
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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> <p>12 Notify Higher Supervision</p> <p>13 Return To Procedure Or Guidance In Effect</p>	

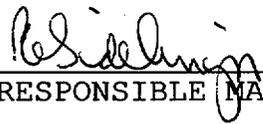
-END-

EOP: AP-TURB.3	TITLE: TURBINE VIBRATION	REV: 10 PAGE 1 of 6
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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RESPONSIBLE MANAGER

2-11-2000
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-TURB.3	TITLE: TURBINE VIBRATION	REV: 10 PAGE 2 of 6
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- A. PURPOSE - This procedure provides the necessary actions to be taken in the event of increasing turbine vibrations.
- B. ENTRY CONDITIONS/SYMPTOMS
 - 1. SYMPTOMS - The symptoms of TURBINE VIBRATION are;
 - a. Annunciator I-27, Rotor Eccentricity or Vibration alarm is lit.
 - b. Increasing or High Turbine Vibration detected.
 - c. Annunciator K-10, Turbine High Vibration Trip.

EOP:
AP-TURB.3

TITLE:
TURBINE VIBRATION

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

* 1 Verify Turbine Vibration -
ALL BEARINGS LESS THAN 14 MILS

Perform the following:

- a. Verify the Turbine tripped. IF
Turbine is not tripped, THEN
manually trip Turbine.
- b. Go to AP-TURB.1, TURBINE TRIP
WITHOUT RX TRIP REQUIRED OR E-0,
REACTOR TRIP OR SAFETY
INJECTION, as required.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

IF AT ANY TIME VIBRATIONS EXCEED 14 MILS, THEN RETURN TO STEP 1.

NOTE: IF power reduction is required the thumb rule for initial boron addition is ~2 gal/% load reduction. Refer to OPG-REACTIVITY-CALC if desired.

2 Check Turbine Vibration:

a. Bearings No. 1 through No. 8 - LESS THAN 7 MILS

a. Attempt to stabilize vibration as follows:

- o IF increasing turbine speed, THEN stop speed increase and evaluate. Evaluate reducing speed to a non-resonance region. (Refer to 0-1.2)
- o IF generator on line, THEN begin reducing load to stabilize vibrations.

b. Bearing No. 9 - LESS THAN 8.5 MILS

b. Attempt to stabilize vibrations as follows:

- o Adjust generator hydrogen temperature,
- OR-
- o Adjust turbine lube oil temperature,
- OR-
- o Adjust exciter cooling.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

3 Evaluate Plant Conditions:

a. Check turbine vibrations -
STABLE OR DECREASING

a. Continue load reduction until turbine vibrations stabilize. IF vibrations can NOT be stabilized with the plant at power, THEN take unit off line (refer to 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN).

b. Stop load reduction

4 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 PRZR pressure controller 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.

d. Rod insertion limit alarms - EXTINGUISHED

d. Borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).

EOP:
AP-TURB.3

TITLE:
TURBINE VIBRATION

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

5 Evaluate Turbine Operation:

- a. Verify no unusual noises exist locally at turbine generator
- b. Monitor turbine supervisory instrumentation to ensure conditions stable

a. IF unusual noises detected, THEN notify the Maintenance Manager.

6 Notify Higher Supervision

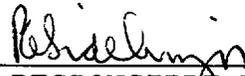
-END-

EOP: AP-TURB.5	TITLE: RAPID LOAD REDUCTION	REV: 4 PAGE 1 of 11
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

2-11-2000

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-TURB.5	TITLE: RAPID LOAD REDUCTION	REV: 4 PAGE 2 of 11
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A. PURPOSE -

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from

a. The SS has determined that a rapid load reduction is required.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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CAUTION

IF MAIN FEEDWATER FLOW SHOULD DECREASE TO 25% OF FULL POWER VALUE (.825 E+6 LBM/HR) PRIOR TO THE AMSAC SYSTEM AUTOMATICALLY BLOCKING, THEN A TURBINE TRIP AND AUX FEED PUMPS START COULD RESULT.

- NOTE:
- o This procedure is intended for use when the required load reduction rate is > 1%/min.
 - o A maximum continuous load reduction rate of > 5%/min would not normally be used unless otherwise directed by the Shift Supervisor.

*** 1 Initiate Load Reduction**

- | | |
|---|--|
| <ul style="list-style-type: none"> a. Verify ROD CONTROL BANK SELECTOR SWITCH is in AUTOMATIC | <ul style="list-style-type: none"> a. <u>IF</u> Auto Rod Control is inoperable <u>OR</u> Manual Control is desired, <u>THEN</u> perform the following: <ul style="list-style-type: none"> 1) Place ROD CONTROL BANK SELECTOR SWITCH to MANUAL. 2) Insert Rods as necessary to match Tavg and Tref. |
| <ul style="list-style-type: none"> b. Reduce turbine load using Auto Turbine EH Control if desired <ul style="list-style-type: none"> 1) Select desired rate on thumbwheel 2) Reduce the setter to the desired load 3) Depress the GO button | <ul style="list-style-type: none"> b. <u>IF</u> Auto Control is inoperable <u>OR</u> Manual Control is desired, <u>THEN</u> reduce turbine load in manual as desired. |
| <ul style="list-style-type: none"> c. Verify Steam Dump operating in auto, as required | <ul style="list-style-type: none"> c. Place Steam Dump in manual and operate as necessary. |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

EXTREME AND RAPID ROD MOTION TO MITIGATE TAVG SWINGS MAY RESULT IN LARGE POWER EXCURSIONS AND SHOULD BE AVOIDED.

2 Monitor RCS Tavg

- o Tavg - GREATER THAN 545°F
- o Tavg - LESS THAN 566°F

Verify AUTO control rod motion as required. IF NOT, THEN place rod control bank selector switch to MANUAL and adjust control rods as necessary.

- a. IF Tavg is outside limits AND CANNOT be controlled, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

NOTE: The thumb rule for initial boron addition is ~2 gal/% load reduction. Refer to OPG-REACTIVITY-CALC if desired.

3 Add Boric Acid As Necessary

To:

- o Maintain or return Δ Flux to the target band
- o Maintain control rods above insertion limits
- o Match Tavg and Tref
- o Compensate for xenon

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: It is permissible to operate RCPs for limited periods without seal injection, provided CCW is being supplied to the thermal barriers.

4 Check IA Available To CNMT

- o IA pressure - > 60 psig
- o Instr Air to CNMT Isol Valve, AOV-5392 - OPEN

Control PRZR level and pressure and follows:

- o Adjust load reduction rate
- o Ensure control rods are moving to control Tavg
- o Secure charging pumps if necessary
- o Operate proportional and backup heaters as required

5 Monitor Plant Parameters - CONTROLLING AT OR TRENDING TO PROGRAM VALUES

- PRZR Pressure
- PRZR Level
- S/G Level

IF any parameter is approaching a trip setpoint AND CANNOT be controlled, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

NOTE: The load reduction should not be delayed to perform the remaining steps.

6 Check If Condensate Booster Pumps Should Be Secured

- a. Power < 65% OR Trim Valve V-9508G indicates > 80% open
- b. Place the auto condensate booster pump to the trip position
- c. Stop one condensate booster pump
- d. WHEN the condensate system stabilizes, THEN stop the remaining condensate booster pump

a. Go to Step 13.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

7 Check If One MFW Pump Should Be Secured

- a. Power < 50%
- b. Verify at least one MFWP Seal Booster pump in service
- c. Two MFW Pumps running
- d. Close discharge valve for the pump to be secured
 - MFW Pump A - MOV-3977
 - MFW Pump B - MOV-3976
- e. Stop the desired MFW Pump
- f. Close the secured MFW pump recirc valve by placing the control switch in pull stop
- g. Close the service water block valve to the secured MFW pump oil cooler
 - MFW Pump A - V-4701
 - MFW Pump B - V-4702

- a. Go to Step 13.
- b. Notify AO to start one MFWP Seal Booster pump
- c. Go to Step 8.

8 Verify Trim Valves Controlling Condensate System Pressure in Auto (300-375 PSIG)

Place controller in manual and adjust pressure as necessary

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Check AMSAC System Status

- a. Power < 35% (~150 psig first stage pressure)
- b. Verify AMSAC Auto Block Status Light is ON

- a. Go to Step 13.
- b. Place AMSAC Manual Block switch to the BLOCK position

10 Check Heater Drain Tank Pump Status

- a. Generator load < 175 MWe
- b. Stop one Heater Drain Tank Pump
- c. WHEN Heater Drain Tank level control is stable, THEN stop the second Heater Drain Tank Pump

- a. Go to Step 13.

11 Check FW Flow Bypass Vlv Status

- a. Power < 30%
- b. FW Flow Bypass Vlvs in AUTO
 - HCV-480
 - HCV-481

- a. Go to Step 13.
- b. Perform the following:
 - 1) Slowly open the FW Flow Bypass Vlvs while verifying the associated FW Reg Vlv compensates by closing slightly
 - 2) Place FW Flow Bypass Vlvs in AUTO

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

12 Align Systems For Low Power Operation

- | | |
|---|-------------------|
| a. Power < 30% | a. Go to Step 13. |
| b. Place AOV-3959, CNDST Bypass Vlv to CLOSE | |
| c. Place LC-107, Hotwell Level Control, to MANUAL | |
| d. Generator load < 100 MWe | d. Go to Step 13. |
| e. Open turbine drain valves | |

13 Evaluate Plant Status

- | | |
|----------------------------------|--|
| a. Power stable at desired level | a. <u>IF</u> power > 20% and further reduction is required, <u>THEN</u> continue load reduction and return to Step 6. |
| | 1) <u>IF</u> power < 20% and further reduction is required, <u>THEN</u> refer to procedure O-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN. |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

14 Establish Stable Plant Conditions:

a. Tavg - TRENDING TO TREF

a. Perform the following:

1) Verify AUTO control rod motion as required. IF NOT, THEN place rod control bank selector switch to MANUAL and adjust control rods as necessary.

2) Borate if required for power reduction.

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. IF PRZR pressure can NOT be controlled, THEN refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.

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.

d. Rod insertion limit alarms - EXTINGUISHED

d. Borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).

e. Narrow range S/G levels - TRENDING TO 52%

e. Ensure MFW regulating valves controlling in AUTO, OR control feedwater in MANUAL.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
15	Establish Normal Plant Conditions:	
	a. Ensure EH control as desired	
	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 5°F of Tref, <u>THEN</u> perform the following: 1) Ensure steam dump valves closed. 2) Reset steam dump.
	d. Verify PRZR pressure control in AUTO	d. Place PRZR pressure control in AUTO as desired. • 431K master controller • PRZR spray valve controllers
	e. Ensure PRZR Heaters restored:	
	o PRZR proportional heater breaker - CLOSED	
	o PRZR backup heater breaker - RESET/IN AUTO	
	f. Verify PRZR level control in AUTO	f. Place one charging pump speed controller in AUTO if desired.
	g. Verify Rod Control Selector Switch in AUTO	g. Place Rod Control Selector Switch in AUTO if desired.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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NOTE: Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting requirements.

16 Notify Higher Supervision

17 Refer to 0-5.1, LOAD REDUCTIONS, for additional guidance

18 Return To Procedure Or Guidance In Effect

-END-