ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 2-7-90

Joseph A. Widay
PLANT SUPERINTENDENT

2-23-90
EFFECTIVE DATE

QA X NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

GINNA STATION
START:
DATE _____
TIME _____
COMPLETED:
DATE _____
TIME: _____

A. PURPOSE - This procedure provides the instructions necessary to mitigate the consequences of a reactor coolant leak.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from:

   a. S-12.2, Operator Action in the event of indication of significant increase in leakage.

   b. AP-CVCS.1, when leak cannot be isolated.

2. SYMPTOMS - The symptoms of REACTOR COOLANT LEAK are;

   a. Annunciator F-14, Charging pump speed alarm, or

   b. Annunciator A-2, VCT Level 14% 86, alarm or,

   c. Annunciator E-16, RMS Process Monitor High Activity, alarm, or

   d. Annunciator E-24, RMS Area Monitor High Activity, alarm, or

   e. Annunciator F-4, Pressurizer Level Deviation -5 Normal +5, alarm, or,

   f. Annunciator F-10, Pressurizer Lo Press 2185 psi, alarm, or

   g. Annunciator F-11, Pressurizer Lo Level 13%, alarm, lit.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OR SI OCCURS, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.

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1	Check RCS Inventory: a. PRZR level - DECREASING	Go to Step 4.
2	Establish Stable PRZR Level: a. Start - ADDITIONAL CHARGING PUMPS AND INCREASE SPEED AS NECESSARY b. Check PRZR level - STABLE OR INCREASING	b. Close LTDN loop B cold leg to RHx AOV-427.
3	Check PRZR Level - GREATER THAN 13% AND STABLE OR INCREASING	IF available charging pumps are running at maximum speed with letdown secured, AND PRZR level is decreasing, THEN trip the reactor and go to E-0, REACTOR TRIP or SAFETY INJECTION.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: o An investigation should be initiated within 4 hours of detecting a significant increase in leakage from the RCS (Refer to S-12.2, OPERATOR ACTION IN THE EVENT OF INDICATION OF SIGNIFICANT INCREASE IN LEAKAGE).

o IF VCT level decreases to 5%, charging pump suction will swap to the RWST. This may require a load reduction.

4 Check VCT Level:

a. VCT level - GREATER THAN 5%	a. Verify charging pump suction swap to RWST: 1) Emergency makeup RWST to charging pump LCV-112B - OPEN 2) VCT outlet vlv LCV-112C - CLOSED.
b. VCT level - STABLE OR INCREASING	b. Check RMW system: 1) Operable in AUTO, OR 2) Perform VCT makeup manually, as required. 3) Go to Step 5.
c. Reactor makeup control - OPERATING IN AUTO	c. Place reactor makeup control in AUTO.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	Check CVCS Conditions:	
	a. Letdown indication: o Letdown flow - APPROXIMATELY 40 GPM -AND- o Letdown pressure - APPROXIMATELY 250 PSIG	a. IF letdown isolated, THEN continue with Step 5b. IF NOT isolated, THEN GO TO AP-CVCS.1, CVCS LEAK.
	b. Charging line pressure - APPROXIMATELY 2400 PSIG	b. Go to AP-CVCS.1, CVCS LEAK.
	c. RCP seal injection indications - SEAL INJECTION FLOW METERS GREATER THAN 5 GPM	c. Go to AP-CVCS.1, CVCS LEAK.

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CAUTION

HEALTH PHYSICS TECHNICIAN SHOULD BE CONSULTED PRIOR TO ENTERING A HIGH AIRBORNE AREA.

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6	Check CNMT AND AUX BLDG Radiation Monitors - NORMAL (Normal reading found on Radiation Monitoring Charts)	IF RCS leakage is to CNMT atmosphere and can NOT be isolated remotely, THEN, go to Step 13. If leakage is indicated in Aux Bldg, THEN, direct AO to investigate AND go to Step 7.
7	Check CCW Surge Tank Level - APPROXIMATELY 50% AND NOT INCREASING	Go to AP-CCW.1, LEAKAGE INTO THE COMPONENT COOLING LOOP.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8	Check PRT Conditions: o PRT level - STABLE o PRT pressure - APPROXIMATELY 1.5 PSIG AND STABLE o PRZR relief tk liquid temp - AT CNMT AMBIENT TEMPERATURE AND STABLE o PRZR valve leakoff temperatures - NORMAL (Normal readings found on Pressurizer Valve Leak-Off Temperature Record Log	Go to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

STEAM GENERATOR TUBE LEAKAGE IN ONE S/G SHALL NOT EXCEED 0.1 GPM WHEN AVERAGED OVER 24 HOURS.

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9 Check S/Gs For Leakage:

- o Air ejector radiation monitors (R-15, R-15A) - NORMAL (Normal readings found on Radiation Monitoring Charts)
- o S/G blowdown radiation monitor (R-19) - NORMAL (Normal readings found on Radiation Monitoring Charts)
- o Steamline radiation monitors (R-31, R-32) - NORMAL (Normal readings found on Radiation Monitoring Charts)
- o S/G sample activity - NORMAL (Check with HP Department for normal)

IF S/G tube leak indicated, THEN refer to 0-6.10, PLANT OPERATION WITH A S/G TUBE LEAK INDICATION.

10 Check Accumulator Levels:

- o Accumulator levels - STABLE

To calculate in leakage to accumulators, refer to S-16.11, MONITORING INLEAKAGE TO SI ACCUMULATORS.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Check RCDT Level:	
	a. RCDT leak rate - NOT INCREASING	a. Check sources of inleakage to RCDT: 1) IF RV flange leakoff temperature has increased, THEN close Rx vess flange seal leakoff vlv AOV-521. 2) Verify proper operation of RCP seals. IF RCP seal malfunction, THEN go to AP-RCP.1, RCP SEAL MALFUNCTION. 3) Verify excess letdown isolated. 4) IF source of leakage is NOT 1, 2 or 3 above, THEN suspect loop drains.
12	Check Valve Leakoff Temperatures - NORMAL (Normal readings found on Pressurizer Valve Leak-Off Temperature Record Log)	IF any valve leakoff temperature are abnormally high, THEN, perform further investigation of that leakage path.
13	Check CNMT Radiation Monitors - NORMAL (Normal readings found on Radiation Monitoring Charts)	IF leakage is indicated in CNMT, THEN: a. Have HP sample for CNMT entry. b. Investigate CNMT for leakage.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	Verify Tech Spec Leakage Limits - SATISFIED PER TECH SPEC SECTION 3.1.5	Perform actions as directed by Tech Specs.
15	Establish - MONITORING OF RCS LEAK RATE AND EVALUATE PLANT CONDITIONS FOR LONG TERM ACTIONS	
16	Check Conditions For Offsite Reporting: o Refer to - SC-100, GINNA STATION EVENT EVALUATION AND CLASSIFICATION o Refer to - 0-9.3, NRC IMMEDIATE NOTIFICATION	

-END-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 5/1/91

Joseph A. Widay
PLANT SUPERINTENDENT

5/3/91
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

A. PURPOSE - This procedure provides the steps necessary to control the plant during an automatic turbine runback or unexplained load rejection.

B. ENTRY CONDITIONS/SYMPTOMS

1. SYMPTOMS - The symptoms of AUTOMATIC TURBINE RUNBACK are;

a. Annunciator E-28, POWER RANGE ROD DROP STOP -5%/5 sec, lit or

b. Annunciator C-14, ROD BOTTOM ROD STOP, lit or

c. MRPI Indicates control rod(s) on bottom

d. Annunciator F-30, OPΔT TURBINE RUNBACK, lit or

e. Annunciator F-31, OTΔT TURBINE RUNBACK, lit or

f. Unexplained turbine load rejection.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION

IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OCCURS, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.

* *

NOTE: o Step 1 is an IMMEDIATE ACTION step.

o Any runback signal will block auto out motion of rod control system.

1	Check Rod Control: o Rod control bank selector switch in AUTO o Control rods stepping in as required	Place rod control bank selector switch in manual and drive rods in as necessary to control Tavg.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2	Check Control Rod Status: o Annunciator E-28, POWER RANGE ROD DROP ROD STOP 5%/5 SECONDS - EXTINGUISHED o Annunciator C-14, ROD BOTTOM ROD STOP - EXTINGUISHED	Go to Step 12.
3	Verify Annunciator F-15, RCS TAVG DEV, - EXTINGUISHED	Place steam dump mode selector switch to MANUAL.
4	Verify the following: a. Any ΔT runback signal - PRESENT b. ΔT runback occurring as required	a. Go to Step 5. b. Perform the following: 1) Place EH in MANUAL. 2) Reduce turbine load as necessary.
5	Verify Tavg - TRENDING TO TREF	Manually operate control rods as necessary to control Tavg. <u>IF</u> steam dump required and <u>NOT</u> operating, <u>THEN</u> perform the following: a. Place steam dump mode selector to MANUAL. b. Place steam dump pressure controller, HCV-484, to MANUAL. c. Open steam dump valves as necessary to control Tavg.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	Verify All ΔI Indications Approximately Equal	Check NIS PR upper and lower detector currents to determine if any detector has failed. IF NIS PR upper or lower detector has failed, THEN perform the following: a. Allow runback to reduce reactor power to 75%. b. Place EH in manual to terminate runback. c. Defeat failed PR channel. (Refer to ER-NIS.3, PR MALFUNCTION.)
7	Check Delta T Channel Indications: o All 4 delta T channels indicate approximately the same value o All 4 delta T channel setpoint indications approximately equal o All 4 delta T channels responding to the turbine runbacks	Perform the following: a. Check for instrument failure: o Any delta T channel indicating significantly different than the other 3. o Any PRZR pressure or Tavg channel malfunction. b. IF 1 channel is failed, THEN perform the following: 1) Allow runback to reduce reactor power to 75% or until condition clears. 2) WHEN power less than 75%, THEN place EH in manual to terminate runback if necessary. 3) Go to Step 9.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8	Turbine Runback Signal - CLEARED	WHEN turbine runback signal clears, THEN go to Step 9.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

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

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NOTE: Tavg will indicate high or low for some instrument failures affecting steam dump control, rod control, and PRZR level control.

9	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 press 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. Failure of a ΔT channel will affect rod insertion limit indication. Determine actual RIL from Tech Spec figure 3.10-1. IF necessary, THEN refer to AP-CVCS.2, IMMEDIATE BORATION and continue with Step 8e.
	e. Steam dump valves - CLOSED	e. Ensure proper operation of steam dump control system.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	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).
11	Evaluate Cause Of Turbine Runback:	
	a. Verify power to Instrument busses o All red Instrument bus annunciators - EXTINGUISHED o Busses 12A and B - ENERGIZED	a. Go to Step 15.
	b. Failed instrument channel - IDENTIFIED	b. Perform the following: 1) Attempt to determine and correct conditions requiring turbine runback. 2) Go to Step 20.
	c. Go to ER-INST.1, REACTOR PROTECTION BISTABLE DEFEAT AFTER INSTRUMENTATION LOOP FAILURE	
12	Verify Turbine Load Reduction - AT LEAST 20%	Place EH in manual and reduce turbine load by 20%.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	Check Main Generator Load: o Gross load - GREATER THAN 15 MW o Load - STABLE	Trip turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, Step 1.
14	Verify Proper Steam Dump Operation: o Annunciator G-15, STEAM DUMP ARMED - LIT o Steam dump operating to control Tavg within 6°F of Tref	Perform the following: a. Place steam dump mode selector to MANUAL. b. Place steam dump controller, HCV-484, to MANUAL. c. Open steam dump valves as required to stabilize Tavg.
15	Verify Bus 12A And Bus 12B Energized: o Bus 12A normal or alternate feed breaker - CLOSED o Bus 12B normal or alternate feed breaker - CLOSED o Bus 12A and 12B voltage - GREATER THAN 4KV	Go to AP-ELEC.1, LOSS OF 12A AND/OR 12B TRANSFORMER.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
16	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 press 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.
17	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).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: With a PR lower detector failed low, the plant could experience both a dropped rod turbine runback with continuing ΔT runbacks.

18 Check NIS PR Indication:

- o All PR total channel indicators - ON SCALE
- o All ΔI indicators - APPROXIMATELY EQUAL

IF a NIS PR failure is indicated, THEN perform the following:

a. Verify 20% dropped rod runback has occurred. IF ΔT runbacks still occurring, THEN allow runbacks to reduce power to less than 75% and place EH in manual to terminate runbacks.

b. Refer to ER-NIS.3, PR MALFUNCTION.

c. Go to Step 21.

19 Verify Dropped Rod Indication:

a. Check dropped rod indication

- o MRPI indicates rod on bottom

-OR-

- o Annunciator C-14, ROD BOTTOM ROD STOP - LIT

b. Go to AP-RCC.2, RCC/RPI MALFUNCTION

a. IF the cause of the runback has NOT been determined, THEN return to Step 2.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
20	Establish Normal Plant Conditions:	
	a. Verify EH control in AUTO IMP IN	a. IF conditions requiring runback have cleared, THEN place EH in AUTO IMP IN.
	b. Verify steam dump controller, HC-484, in AUTO at 1005 psig	
	c. Verify annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED	c. IF Tavg within 6°F of Tref, THEN perform the following: 1) Ensure steam dump valves closed. 2) Reset steam dump.
	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.

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

21 Notify Higher Supervision

-END-

EOP: ATT	TITLE: EOP/AP ATTACHMENTS	REV: 0 PAGE 1 of 1

ATTACHMENT AUX BLDG SW Supt. Joseph Widay Date 4-4-90

1) Dispatch AO to locally open AUX BLDG SW isolation valve breakers:

   o MOV-4615, MCC C position 14J
   o MOV-4616, MCC C position 6F

2) Manually open AUX BLDG SW isolation valves MOV-4734 and MOV-4735 (control board switches).

3) Direct AO to locally open MOV-4615 and MOV-4616 slowly to approximately half open. (middle level opposite 1G charcoal filter)

4) Direct AO to locally close AUX BLDG SW isolation valve breakers:

   o MOV-4615, MCC C position 14J
   o MOV-4616, MCC C position 6F

5) Ensure AUX BLDG SW isolation valves MOV-4615 and MOV-4616 open fully.

EOP: ATT	TITLE: EOP/AP ATTACHMENTS	REV: 1 PAGE 1 of 1

ATTACHMENT SAFW Supt. Joseph A. Widay Date 1-4-90

To place SAFW in service perform the following:

1. Verify the following valves OPEN:
   - o MOV-9701A, SAFW PUMP C DISCH VALVE
   - o MOV-9701B, SAFW PUMP D DISCH VALVE
   - o MOV-9704A, SAFW ISOL TO S/G A
   - o MOV-9704B, SAFW ISOL TO S/G B
   - o MOV-9746, SAFW PUMP D EMERG DISCH VLV

2. Open SAFW pump suction valves:
   - o MOV-9629A, SAFW PUMP C SUCTION VALVE
   - o MOV-9629B, SAFW PUMP D SUCTION VALVE

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CAUTION

IF SW ISOLATION HAS OCCURRED, THEN AUX BLDG SW ISOLATION VALVES TO SAFW SHOULD BE OPENED SLOWLY LOCALLY TO PREVENT WATER HAMMER IN THE SAFW PUMP SUCTION.

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3. Ensure SW isolation valves MOV-4615 for C SAFW pump and MOV-4616 for D SAFW pump are open. IF closed, THEN reset SI and dispatch AO to locally open valves slowly.

4. Verify associated MDAFW pump switch in stop position.

5. Start either or both SAFW PUMPS as necessary to supply feedwater to the S/Gs.