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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

Residman

RESPONSIBLE MANAGER

8-5-97

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

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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, when a significant increase in RCS leakage is indicated.
- b. AP-CVCS.1, CVCS LEAK, when leak cannot be isolated.

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

- a. Annunciator F-14, CHARGING PUMP SPEED, lit, or
- b. Annunciator A-2, VCT LEVEL 14% 86, lit, or
- c. Annunciator E-16, RMS PROCESS MONITOR HIGH ACTIVITY, lit, or
- d. Annunciator E-24, RMS AREA MONITOR HIGH ACTIVITY, lit, or
- e. Annunciator F-4, PRESSURIZER LEVEL DEVIATION -5 NORMAL +5, lit, or
- f. Annunciator F-10, PRESSURIZER LO PRESS 2185 PSI, lit, or
- g. Annunciator F-11, PRESSURIZER LO LEVEL 13%, lit.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
* * * * * <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. * * * * * <u>NOTE:</u> Conditions should be evaluated for site contingency reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION.		
1	Check PRZR Level - STABLE AT PROGRAM LEVEL	IF PRZR level decreasing, <u>THEN</u> start additional charging pumps and increase speed as necessary to stabilize PRZR level. IF PRZR level continues to decrease, <u>THEN</u> close loop B cold leg to REGEN Hx isolation valve, AOV-427. IF available charging pumps are running at maximum speed with letdown isolated, <u>AND</u> PRZR level is decreasing, <u>THEN</u> 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><u>NOTE:</u> IF VCT level decreases to 5%, charging pump suction will swap to the RWST. This may require a load reduction.</p> <p>2 Check VCT Makeup System:</p>		
a.	Verify VCT level - GREATER THAN 5%	<p>a. Ensure charging pump suction aligned to RWST.</p> <ul style="list-style-type: none"> • LCV-112B - OPEN • LCV-112C - CLOSED
b.	Verify the following: <ul style="list-style-type: none"> 1) RMW mode selector switch in AUTO 2) RMW control armed - RED LIGHT LIT 	b. Adjust controls as necessary.
c.	Check VCT level: <ul style="list-style-type: none"> o Level GREATER THAN 20% -OR- o Level - STABLE OR INCREASING 	<p>c. Check letdown divert valve, LCV-112A, closed.</p> <p><u>IF</u> VCT makeup flow <u>NOT</u> adequate, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> 1) Ensure BA transfer pumps and RMW pumps running. 2) Adjust RMW flow control valve, HCV-111, to increase RMW flow. 3) Increase boric acid flow as necessary to maintain required concentration. <p><u>IF</u> VCT level can <u>NOT</u> be maintained, <u>THEN</u> refer to ER-CVCS.1, REACTOR MAKEUP CONTROL MALFUNCTION, if necessary.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
3	<p>Check If RCS Leakage In CNMT:</p> <ul style="list-style-type: none"> o Check CNMT radiation monitors - NORMAL <ul style="list-style-type: none"> • R-2 • R-7 • R-10A • R-11 • R-12 o CNMT sump A pump run frequency - NORMAL (Refer to RCS Daily Leakage Log) 	<p><u>IF</u> leakage is indicated in CNMT, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> a. Direct HP to sample CNMT for entry. b. Continue with Step 4. <u>WHEN</u> CNMT cleared for entry, <u>THEN</u> dispatch personnel to investigate CNMT for RCS leakage.

<p><u>CAUTION</u> RADIATION PROTECTION TECHNICIAN SHOULD BE CONSULTED PRIOR TO ENTERING A HIGH AIRBORNE AREA.</p>		

4	<p>Dispatch AO To AUX BLDG To Investigate For CVCS Leak (locked area keys required)</p>	
5	<p>Check For Leak To CCW System:</p> <ul style="list-style-type: none"> o CCW surge tank level - APPROXIMATELY 50% AND STABLE o CCW radiation monitor, R-17 - NORMAL 	<p>Go to AP-CCW.1, LEAKAGE INTO THE COMPONENT COOLING LOOP.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	6 Check CVCS Conditions:	
	<p>a. Letdown indication:</p> <ul style="list-style-type: none"> o Letdown flow - APPROXIMATELY 40 GPM o Low pressure LTDN pressure - APPROXIMATELY 250 PSIG o Letdown pressure control valve, PCV-135, demand - APPROXIMATELY 35% OPEN <p>b. Charging indication:</p> <ul style="list-style-type: none"> o Seal injection flows - GREATER THAN 6 GPM AND STABLE o RCP Labyrinth seal D/Ps - GREATER THAN 15 INCHES AND APPROXIMATELY EQUAL o Charging pump discharge pressure - GREATER THAN RCS PRESSURE <p>c. AUX BLDG radiation levels - NORMAL</p> <ul style="list-style-type: none"> • R-4 • R-9 • R-10B • R-13 • R-14 	<p>a. <u>IF</u> letdown isolated, <u>THEN</u> continue with Step 6b. <u>IF NOT</u> isolated, <u>THEN</u> go to AP-CVCS.1, CVCS LEAK, Step 6.</p> <p>b. Go to AP-CVCS.1, CVCS LEAK, Step 6.</p> <p>c. Go to AP-CVCS.1, CVCS LEAK, Step 6 and refer to CVCS piping diagrams for further guidance.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	<p>Check PRT Indications:</p> <ul style="list-style-type: none"> a. Level - BETWEEN 61% AND 84% b. Pressure - APPROXIMATELY 1.5 PSIG AND STABLE c. Temperature - AT CNMT AMBIENT TEMPERATURE AND STABLE 	<p>Check tailpipe and valve leakoff temperatures for the PRZR safety valves and PORVs for indication of leakage.</p> <p><u>IF</u> no PORV or safety valve leakage is indicated, <u>THEN</u> check other leak paths from the RCS to the PRT.</p> <ul style="list-style-type: none"> • Letdown relief valve, RV-203 • Seal return relief valve, RV-314
<p>*****</p> <p><u>CAUTION</u> STEAM GENERATOR TUBE LEAKAGE IN ONE S/G SHALL NOT EXCEED 0.1 GPM WHEN AVERAGED OVER 24 HOURS.</p> <p>*****</p>		
8	<p>Check S/Gs For Leakage:</p> <ul style="list-style-type: none"> o Air ejector radiation monitors - NORMAL <ul style="list-style-type: none"> • R-15 • R-15A o S/G blowdown radiation monitor (R-19) - NORMAL o Steamline radiation monitors - NORMAL <ul style="list-style-type: none"> • R-31 • R-32 o S/G sample activity - NORMAL (Check with RP Department for normal) 	<p><u>IF</u> S/G tube leak indicated, <u>THEN</u> refer to 0-6.10, PLANT OPERATION WITH A S/G TUBE LEAK INDICATION.</p>

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ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Check SI Accumulator Levels -
STABLE

Calculate inleakage to SI
accumulators (Refer to S-16.11,
MONITORING INLEAKAGE TO SI
ACCUMULATORS).

10 Check RCP Seal Leakoff Flows:

Go to AP-RCP.1, RCP SEAL
MALFUNCTION.

- o Leakoff flows - WITHIN THE
NORMAL OPERATING RANGE OF FIGURE
RCP SEAL LEAKOFF
- o Leakoff flows - STABLE

11 Check RCDT Leak Rate - NORMAL
(Refer to RCS Daily Leakage
Log and PPCS point ID L1003)

Check other sources of in leakage
to RCDT:

- a. IF Rx vessel flange leakoff
temperature has increased, THEN
close Rx VESS FLANGE SEAL
LEAKOFF VLV, AOV-521.
- b. Verify excess letdown isolated.
IF NOT, THEN ensure RCDT divert
valve, AOV-312, in the VCT
position.
- c. IF source of leakage NOT
determined, THEN suspect loop
drains.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
12	Check Valve Leakoff Temperatures - NORMAL (Refer to Pressurizer Valve Leak-Off Temperature Record Log)	<u>IF</u> any valve leakoff temperature is abnormally high, <u>THEN</u> initiate investigation of that leakage path.
13	Establish Stable Plant Conditions: a. PRZR level - TRENDING TO PROGRAM b. Check PRZR pressure control: o Pressure - TRENDING TO 2235 PSIG o PRZR backup heaters - OFF	a. Control charging and letdown flows to restore PRZR level to program. 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.
14	Evaluate RCS Leakage: a. Leakage within limits (Refer to leakage surveillance sheet and ITS section 3.4.13) b. Leak location identified	a. <u>IF</u> leak <u>NOT</u> isolable, but PRZR level and seal injection can be maintained, <u>THEN</u> shut the plant down (Refer to 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN or AP-TURB.5, RAPID LOAD REDUCTION). b. Return to Step 1.

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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>15 Notify Higher Supervision</p> <p>-END-</p>		

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AP-RCS.1 APPENDIX LIST

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1) FIGURE RCP SEAL LEAKOFF	1

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FIGURE RCP SEAL LEAKOFF

#1 SEAL LEAK RATE (GPM)



