RGE
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Joseph A. Widay
Vice President
and Plant Manager

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

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
AP-RCP.1, Rev 16

A002

INPUT PARAMETERS: TYPE: PRAP STATUS VALUE(S): EF, QU 5 YEARS ONLY:

PRAP ABNORMAL PROCEDURE

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
AP-CCW.1	LEAKAGE INTO THE COMPONENT COOLING LOOP	016	01/07/2004	06/26/2002	06/26/2007	EF
AP-CCW.2	LOSS OF CCW DURING POWER OPERATION	018	05/08/2003	06/26/2002	06/26/2007	EF
AP-CCW.3	LOSS OF CCW - PLANT SHUTDOWN	015	11/19/2002	06/26/2002	06/26/2007	EF
AP-CR.1	CONTROL ROOM INACCESSIBILITY	019	02/25/2003	06/26/2002	06/26/2007	EF
AP-CVCS.1	CVCS LEAK	013	06/26/2002	06/03/2002	06/03/2007	EF
AP-CVCS.3	LOSS OF ALL CHARGING FLOW	004	08/26/2003	02/27/2004	02/27/2009	EF
AP-CW.1	LOSS OF A CIRC WATER PUMP	011	06/26/2002	04/16/2003	04/16/2008	EF
AP-ELEC.1	LOSS OF 12A AND/OR 12B BUSSES	026	05/30/2003	06/26/2002	06/26/2007	EF
AP-ELEC.2	SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM LOW FREQUENCY	010	06/26/2002	06/26/2002	06/26/2007	EF
AP-ELEC.3	LOSS OF 12A AND/OR 12B TRANSFORMER (BELOW 350 F)	012	05/30/2003	06/26/2002	06/26/2007	EF
AP-ELEC.13/15	LOSS OF BUS 13/15	000	09/24/2003	09/24/2003	09/24/2008	EF
AP-ELEC.14/16	LOSS OF SAFEGUARDS BUS 14/16	007	08/26/2003	06/26/2002	06/26/2007	EF
AP-ELEC.17/18	LOSS OF SAFEGUARDS BUS 17/18	006	05/30/2003	06/26/2002	06/26/2007	EF
AP-FW.1	ABNORMAL MAIN FEEDWATER FLOW	015	05/08/2003	06/26/2002	06/26/2007	EF
AP-IA.1	LOSS OF INSTRUMENT AIR	018	06/26/2002	04/16/2003	04/16/2008	EF
AP-PRZR.1	ABNORMAL PRESSURIZER PRESSURE	014	05/08/2003	06/26/2002	06/26/2007	EF
AP-RCC.1	CONTINUOUS CONTROL ROD WITHDRAWAL/INSERTION	008	06/26/2002	04/16/2003	04/16/2008	EF
AP-RCC.2	RCC/RPI MALFUNCTION	010	06/26/2002	01/22/2002	01/22/2007	EF
AP-RCC.3	DROPPED ROD RECOVERY	006	02/25/2003	02/25/2003	02/25/2008	EF
AP-RCP.1	RCP SEAL MALFUNCTION	016	03/03/2004	04/24/2003	04/24/2008	EF
AP-RCS.1	REACTOR COOLANT LEAK	016	06/26/2002	04/16/2003	04/16/2008	EF
AP-RCS.2	LOSS OF REACTOR COOLANT FLOW	011	06/26/2002	04/16/2003	04/16/2008	EF
AP-RCS.3	HIGH REACTOR COOLANT ACTIVITY	010	06/26/2002	04/01/2002	01/22/2007	EF
AP-RCS.4	SHUTDOWN LOCA	014	04/30/2003	04/30/2003	04/30/2008	EF
AP-RHR.1	LOSS OF RHR	019	04/30/2003	04/30/2003	04/30/2008	EF
AP-RHR.2	LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS	013	04/30/2003	04/30/2003	04/30/2008	EF
AP-SG.1	STEAM GENERATOR TUBE LEAK	003	11/21/2002	06/26/2002	06/26/2007	EF
AP-SW.1	SERVICE WATER LEAK	019	05/30/2003	04/21/2003	04/21/2008	EF
AP-SW.2	LOSS OF SERVICE WATER	004	05/30/2003	10/31/2001	10/31/2006	EF
AP-TURB.1	TURBINE TRIP WITHOUT RX TRIP REQUIRED	012	05/08/2003	06/26/2002	06/26/2007	EF

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PRAP ABNORMAL PROCEDURE

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
AP-TURB.2	TURBINE LOAD REJECTION	018	06/26/2002	06/26/2002	06/26/2007	EF
AP-TURB.3	TURBINE VIBRATION	011	06/26/2002	06/26/2002	06/26/2007	EF
AP-TURB.4	LOSS OF CONDENSER VACUUM	017	04/30/2003	04/30/2003	04/30/2008	EF
AP-TURB.5	RAPID LOAD REDUCTION	006	06/26/2002	06/26/2002	06/26/2007	EF

PRAP TOTAL: 34

GRAND TOTAL: 34

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

RESPONSIBLE MANAGER

3-3-2004

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

A. PURPOSE - This procedure provides the instructions necessary to diagnose and to respond to a reactor coolant pump seal malfunction.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from:

a. E-3, STEAM GENERATOR TUBE RUPTURE, or

b. ES-1.1, SI TERMINATION, or

c. ES-1.2, POST LOCA COOLDOWN AND DEPRESSURIZATION, or

d. ECA-0.1, LOSS OF ALL AC POWER RECOVERY WITHOUT SI REQUIRED, or

e. ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF BOTH STEAM GENERATORS, or

f. ECA-3.1, SGTR WITH LOSS OF REACTOR COOLANT-SUBCOOLED RECOVERY DESIRED, or

g. ECA-3.2, SGTR WITH LOSS OF REACTOR COOLANT-SATURATED RECOVERY DESIRED, or

h. ECA-3.3, SGTR WITHOUT PRESSURIZER PRESSURE CONTROL, or

i. FR-I.1, RESPONSE TO HIGH PRESSURIZER LEVEL, when RCP seal malfunction is indicated.

2. SYMPTOMS - The symptoms of RCP SEAL MALFUNCTION are;

a. Annunciator B-17(18), RCP A(B) No.1 SEAL HI-LO FLOW 5.0 GPM 1.0 , lit, or

b. Annunciator B-9(10), RCP A(B) LABYR SEAL LO DIFF PRESS 15" H2O, lit, or

c. Annunciator B-3(4), RCP A(B) STAND PIPE HI LEVEL + 1 FT, lit, or

Continued on next page

2. SYMPTOMS (cont)

d. Annunciator B-11(12), RCP A(B) STAND PIPE LO LEVEL -4 FT, lit, or

e. Annunciator B-25(26), RCP A(B) No. 1 SEAL LO DIFF PRESS 220 PSID, lit, or

f. Annunciator B-1(2), RCP A(B) No. 1 SEAL OUT HI TEMP 200°F, lit, or,

g. Annunciator A-7(15), RCP A(B) CCW RETURN HIGH TEMP OR LOW FLOW, lit.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

IF ANY RCP IS SECURED BECAUSE OF A SEAL MALFUNCTION, IT SHOULD NOT BE RESTARTED UNTIL THE CAUSE OF THE MALFUNCTION HAS BEEN DETERMINED AND CORRECTED.

NOTE: o If a Reactor trip is initiated while performing Step 1, transition to E-0 should occur while completing subsequent actions of the step.

o #2 Seal leak rate is total RCDT leak rate minus any known in-leakage to RCDT from another source.

o Total #1 Seal Flow is defined for each RCP as the sum of indicated #1 Seal Leakoff Flow and #2 seal leak rate to RCDT (PPCS Point ID L1003, 3.2 gal/% in the normal operating range).

1 Check Total #1 Seal Flow - LESS THAN 8.0 GPM FOR EACH RCP

IF a #1 Seal Failure is verified by a decrease in Labyr Seal Diff Pressure OR increasing Seal Inlet/Outlet temps, THEN perform the following:

a. IF reactor trip breakers closed, THEN trip the reactor.

b. WHEN all E-0 Immediate Actions done, THEN trip the affected RCP(s).

c. Allow 4 minutes for pump coast down, THEN close affected RCP(s) seal disch valve.

- RCP A, AOV-270A
- RCP B, AOV-270B

d. IF reactor trip was NOT required, THEN perform the following:

1) Initiate SDM verification per O-3.1.

2) Go to step 4.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2	Check RCP Seal Return Valve Alignment:	
	a. RCP seal return isolation valve, MOV-313 - OPEN	a. Perform the following: 1) Ensure CI reset. 2) Ensure both trains of XY relays for RCP seal return isolation valve, MOV-313, reset. 3) Open RCP seal return isolation valve, MOV-313. IF MOV-313 can NOT be opened, THEN dispatch AO to AUX BLDG with RWST area key to check valve and breaker locally (breaker MCC C position 13J).
	b. Verify RCP seal disch valves - OPEN • RCP A, AOV-270A • RCP B, AOV-270B	b. Manually open valves. IF valves can NOT be opened, THEN verify IA aligned to CNMT and go to Step 3.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: o If a reactor trip is initiated while performing Step 3, transition to E-0 should occur while completing subsequent actions of the step.

o The lower limit of 0.8 GPM limit for total #1 seal flow applies when the RCS is at normal operating pressure. Refer to FIG-4.0, FIGURE RCP SEAL LEAKOFF and consult plant staff for guidance if the RCS is at reduced pressure.

3 Check RCP Seal Return Flow:

a. Total #1 Seal Flow - BETWEEN 0.8 GPM AND 6.0 GPM FOR EACH RCP

a. IF #1 Seal Inlet and Outlet temperatures are increasing in an uncontrolled manner, THEN perform the following:

1) IF reactor trip breakers closed, THEN trip the reactor.

2) WHEN all E-0 Immediate Actions done, THEN trip the affected RCP(s).

3) Allow 4 minutes for pump coast down, THEN close affected RCP(s) seal disch valve.

- RCP A, AOV-270A
- RCP B, AOV-270B

4) IF reactor trip was NOT required, THEN initiate SDM verification per O-3.1.

IF #1 Seal Inlet and Outlet temperatures are NOT increasing in an uncontrolled manner, THEN go to Step 4.

b. Go to Step 5.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4	Determine RCP Shutdown Requirements:	
	a. Each RCP Total #1 seal flow - ≥ 0.8 GPM	a. Perform the following while continuing with this procedure: 1) IF Seal Inlet/Outlet temperatures begin to increase in an uncontrolled manner, THEN return to Step 1. 2) Prepare for orderly pump shutdown by placing the plant in Hot Shutdown using 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN. 3) IF Total #1 seal flow increases to ≥ 0.8 GPM, THEN pump shutdown is NOT required. Stop the load reduction AND return to Step 1. 4) Secure the affected RCP within 8 hours.
	b. Each RCP Total # 1 seal flow - ≤ 6.0 gpm	b. Perform the following while continuing with this procedure: 1) IF total #1 Seal flow from any RCP greater than 6.0 gpm, THEN maintain seal injection flow rate of 9.0 GPM or greater to the affected RCP. 2) IF total #1 Seal flow from any RCP exceeds 8.0 GPM OR Seal Inlet/Outlet temperatures begin to increase in an uncontrolled manner, THEN return to Step 1. 3) Prepare for orderly pump shutdown by placing the plant in Hot Shutdown using 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN. 4) Secure the affected RCP within 8 hours.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: ATT-15.1, ATTACHMENT RCP DIAGNOSTICS may be used to aid in diagnosis.

5 Check RCP Cooling:

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

Perform the following:

a. Verify RCP CCW supply and return valves open.

- RCP A, MOV-749A and MOV-759A
- RCP B, MOV-749B and MOV-759B

b. Ensure open CCW outlet valves from RCP thermal barriers.

- RCP A, AOV-754A
- RCP B, AOV-754B

6 Check RCP #2 Seal Indications:

- o Annunciator B-3, RCP A STANDPIPE HI LEVEL +1 FT - EXTINGUISHED
- o Annunciator B-4, RCP B STANDPIPE HI LEVEL +1 FT - EXTINGUISHED

IF affected RCP #1 seal leakoff flow decreasing, THEN failure of #2 seal may be indicated.

Check RCP #2 seal leak rate to RCDT (PPCS Point ID L1003, 3.2 gal/% in the normal operating range).

a. IF RCP #2 seal leak rate to RCDT is ≤ 1.1 gpm, THEN continue plant operation while closely monitoring RCP seal indications.

b. IF RCP #2 seal leak rate to RCDT is greater than 1.1 gpm, THEN perform the following:

1) Prepare for orderly pump shutdown by placing the plant in Hot Shutdown using 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN.

2) Secure the affected RCP within 8 hours.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

REDUCING CHARGING FLOW WILL RESULT IN INCREASING REGEN HX OUTLET TEMPERATURE.

7	Check RCP Labyrinth Seal D/Ps - GREATER THAN 15 INCHES OF WATER	Perform the following: a. Ensure open CCW outlet valves from RCP thermal barriers. • RCP A, AOV-754A • RCP B, AOV-754B b. Verify seal injection flow greater than 5 GPM for affected RCP. c. Adjust HCV-142 to obtain at least 15 inches labyrinth seal ΔP. d. Dispatch AO to check seal injection filter D/P. e. Check CCW surge tank level stable. IF level increasing, THEN go to AP-CCW.1, LEAKAGE INTO THE COMPONENT COOLING LOOP.
8	Check RCP #3 Seal Indications: o Annunciator B-11, RCP A STAND PIPE LO LEVEL -4FT - EXTINGUISHED o Annunciator B-12, RCP B STAND PIPE LO LEVEL -4FT - EXTINGUISHED	Check CNMT radiation monitors normal. • R-11 • R-12 IF RCP standpipe level low and CNMT radiation increasing, THEN # 3 seal leakage increase is probable. Continue plant operation while closely monitoring RCP seal indications.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: In the absence of other seal failure indications, an elevated #1 seal outlet temperature may indicate pump bearing damage.

* 9 Monitor RCP Seal Conditions:

a. RCP total #1 seal flow for each RCP

- o Total #1 seal flow - LESS THAN 6.0 GPM
- o Total #1 seal flow - GREATER THAN 0.8 GPM

a. IF affected RCP running, THEN return to Step 1. IF NOT, THEN perform the following:

1) Monitor affected RCP (Refer to ATT-15.1, ATTACHMENT RCP DIAGNOSTICS).

2) Consult Plant Staff to determine if cooldown required.

b. RCP #1 Seal Leakoff Flow - WITHIN THE NORMAL OPERATING RANGE OF FIG-4.0, FIGURE RCP SEAL LEAKOFF

b. Perform the following:

- o Ensure seal injection flow exceeds #1 seal leakoff flow.
- o Refer to S-2.1, Reactor Coolant Pump Operation.
- o Consult plant staff for further instructions.

c. RCP #1 seal outlet temperatures - LESS THAN 215° AND STABLE

c. IF pump bearing damage is suspected, THEN notify plant staff and expedite shutdown of the affected RCP. IF NOT, THEN return to Step 1.

d. RCS leakage - NORMAL (Refer to leakage surveillance sheet)

d. Perform the following:

1) Calculate RCS leakrate.

2) Refer to ITS section 3.4.13.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

10 Evaluate MCB Annunciator Status (Refer to AR Procedures)

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

11 Notify Higher Supervision

-END-

AP-RCP.1 APPENDIX LIST

	TITLE	
1)	FIGURE RCP SEAL LEAKOFF	(FIG-4.0)
2)	ATTACHMENT RCP DIAGNOSTICS	(ATT-15.1)