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JOSEPH A. WIDAY
VICE PRESIDENT & PLANT MANAGER
GINNA STATION

February 8, 2001

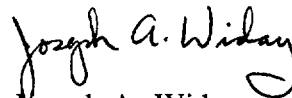
U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I
Washington, D.C. 20555

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
FIG Index
AP-ELEC.14/16, rev 2
AP-RHR.1, rev 15
FIG-3.1, rev 1

A002

REPORT NO. 01
REPORT: NPSP0200
DOC TYPE: PRAP

GINNA NUCLEAR POWER PLANT
PROCEDURES INDEX
ABNORMAL PROCEDURE

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PARAMETERS: DOC TYPES - PRFIG PRER PRAR PRAP 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	014	01/09/01	05/01/98	05/01/03	EF
AP-CCW.2	LOSS OF CCW DURING POWER OPERATION	014	05/18/00	08/17/99	08/17/04	EF
AP-CCW.3	LOSS OF CCW - PLANT SHUTDOWN	012	05/18/00	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	020	09/08/00	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)	008	09/08/00	05/01/98	05/01/03	EF
AP-ELEC.14/16	LOSS OF SAFEGUARDS BUS 14/16	002	02/08/01	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	013	06/09/00	05/01/98	05/01/03	EF
AP-RCS.1	REACTOR COOLANT LEAK	015	09/08/00	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	015	02/08/01	05/01/98	05/01/03	EF

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ABNORMAL PROCEDURE

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PARAMETERS: DOC TYPES - PRFIG PRER PRAR PRAP 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	009	10/13/00	03/31/00	03/31/05	EF
AP-SG.1	STEAM GENERATOR TUBE LEAK	000	09/08/00	09/08/00	09/08/05	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	005	06/09/00	06/09/00	06/09/05	EF
TOTAL FOR PRAP	32					

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EOP FIGURE PROCEDURES

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


PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
FIG-1.0	FIGURE MIN SUBCOOLING	000	05/01/98	05/01/98	05/01/03	EF
FIG-2.0	FIGURE SDM	002	10/13/00	05/01/98	05/01/03	EF
FIG-3.0	FIGURE NAT CIRC C/D WITH SHROUD FANS	000	05/01/98	05/01/98	05/01/03	EF
FIG-3.1	FIGURE NAT CIRC C/D WITHOUT SHROUD FANS	001	02/08/01	05/01/98	05/01/03	EF
FIG-3.2	FIGURE NC C/D WITH VOID IN UPPER HEAD	000	05/01/98	05/01/98	05/01/03	EF
FIG-4.0	FIGURE RCP SEAL LEAKOFF	001	10/13/00	05/01/98	05/01/03	EF
FIG-5.0	FIGURE RHR INJECTION	000	05/01/98	05/01/98	05/01/03	EF
FIG-6.0	FIGURE MIN RCS INJECTION	000	05/01/98	05/01/98	05/01/03	EF
FIG-7.0	FIGURE INTACT S/G PRESSURE	001	05/18/98	05/01/98	05/01/03	EF
FIG-8.0	FIGURE TSAT	000	05/01/98	05/01/98	05/01/03	EF
FIG-9.0	FIGURE TECH SPEC C/D	000	05/01/98	05/01/98	05/01/03	EF
FIG-9.1	FIGURE C/D LIMITS	000	05/01/98	05/01/98	05/01/03	EF
FIG-10.0	FIGURE LIMIT A	000	05/01/98	05/01/98	05/01/03	EF
FIG-11.0	FIGURE SOAK LIMITS	000	05/01/98	05/01/98	05/01/03	EF
FIG-12.0	FIGURE CNMT HYDROGEN	000	05/01/98	05/01/98	05/01/03	EF
FIG-13.0	FIGURE BACK PRESSURE	000	05/01/98	05/01/98	05/01/03	EF
FIG-14.0	FIGURE IA ISOL	000	05/01/98	05/01/98	05/01/03	EF
TOTAL FOR PRFIG	17					

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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

2-8-2001

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-ELEC.14/16	TITLE: LOSS OF SAFEGUARDS BUS 14/16	REV: 2 PAGE 2 of 17
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A. PURPOSE - This procedure provides actions to respond to a loss of AC Emergency Bus 14 or Bus 16.

B. ENTRY CONDITIONS/SYMPTOMS

2. SYMPTOMS - The symptoms of a LOSS OF SAFEGUARDS BUS 14/16 are;

- a. Annunciator J-7, 480V MAIN OR TIE BREAKER TRIP, lit, or
- b. Annunciator J-29, 480V TRANSFORMER BREAKER TRIP, lit.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

- o IF A LOSS OF BUS 12A OR 12B HAS OCCURRED, THEN NO OUTSIDE, SHOULD BE PERFORMED.
- o IF A TURBINE RUNBACK HAS OCCURRED, THEN AP-TURB.2, TURBINE LOAD REJECTION, SHOULD BE PERFORMED.
- o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR 1/2 HOUR, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.
- o DO NOT ATTEMPT TO ENERGIZE A BUS THAT IS POTENTIALLY FAULTED.

NOTE: Conditions should be evaluated for site contingency reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION).

1 Establish Manual Rod Control

- a. Place Rod Control Bank Selector Switch to MANUAL
- b. Verify control rod motion stops
- b. Manually trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
- c. Manually move control rods as necessary

2 Verify Emergency D/G Associated With Affected Bus - RUNNING AND LOADED

Attempt to start and load emergency D/G(s) manually. (Refer to ER-D/G.1, RESTORING D/Gs)

- o Bus 14 - D/G A
- o Bus 16 - D/G B

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
3	<p>Verify At Least One Train of AC Emergency Busses Energized to at Least 420 Volts:</p> <ul style="list-style-type: none"> o Bus 14 and Bus 18 -OR- o Bus 16 and Bus 17 	Go to ECA-0.0, LOSS OF ALL AC POWER step 1.
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>IF CCW FLOW TO A RCP IS INTERRUPTED FOR GREATER THAN 2 MINUTES OR IF EITHER RCP MOTOR BEARING TEMPERATURE EXCEEDS 200°F, THEN TRIP THE AFFECTED RCP.</p> <p>*****</p>		
4	Verify CCW Pump Status	
	<p>a. At least one CCW Pump - RUNNING</p> <p>b. Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSIG - EXTINGUISHED</p>	<p>a. Start one CCW pump (124 KW)</p> <p>1) <u>IF</u> neither CCW pump can be started, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> a) Trip the reactor. b) Trip <u>BOTH</u> RCP's. c) Go to E-0, REACTOR TRIP OR SAFETY INJECTION. <p>b. Start second CCW pump (124 KW).</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	Verify Charging Pump Status- AT LEAST ONE RUNNING	Secure letdown flowpaths <ul style="list-style-type: none"> o Close loop B cold leg to REGEN Hx, AOV-427. o Ensure closed loop A cold leg to EXCESS LETDOWN Hx, AOV-310. o Ensure closed EXCESS LETDOWN HCV-123.
6	Monitor S/G Level Control: <ul style="list-style-type: none"> o S/G level - TRENDING TO 52% o MFW regulating valves - CONTROLLING IN AUTO 	Place MFW regulating valves in MANUAL and control feed flow as necessary.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	Verify Bus 14 - ENERGIZED TO AT LEAST 420 VOLTS	<p>Perform the following:</p> <ul style="list-style-type: none"> a. Close loop B cold leg to REGEN Hx, AOV-427. b. <u>IF</u> steam dump is armed, <u>THEN</u> place STEAM DUMP MODE SELECTOR Switch to MANUAL. c. Ensure only one charging pump operating. d. Transfer Inst Bus B to maintenance supply. e. Return steam dump to AUTO, if desired. f. Ensure the following equipment operating as necessary: <ul style="list-style-type: none"> • CCW Pump B • PRZR Backup Heaters • CNMT Recirc Fans B and C • Boric Acid Pump B • RMW Pump B • Reactor Compartment Cooling Fan B • Penetration Cooling Fan B g. <u>IF</u> Bus 14 can <u>NOT</u> be energized, <u>THEN</u>: <ul style="list-style-type: none"> o Provide alternate room cooling for D/G A. o Cross-connect D/G B fuel oil transfer pump to D/G A (Refer to ER-D/G.1).

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8	Verify Bus 16 - ENERGIZED TO AT LEAST 420 VOLTS	<p>Perform the following:</p> <p>a. Ensure the following equipment operating as necessary:</p> <ul style="list-style-type: none"> • CCW Pump A • Charging Pump A • PRZR Proportional Heaters • CNMT Recirc Fans A and D • Boric Acid Pump A • RMW Pump A • Reactor Compartment Cooling Fan A • Penetration Cooling Fan A <p>b. <u>IF</u> Bus 16 can <u>NOT</u> be energized, <u>THEN</u>:</p> <ul style="list-style-type: none"> o Provide alternate room cooling for D/G B. o Cross-connect D/G A fuel oil transfer pump to D/G B (Refer to ER-D/G.1).

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: IF VCT level decreased to 5%, charging pump suction will swap to the RWST. This may required a load reduction.

9 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.

Manually increase VCT makeup
flow as follows:

- 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.

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

EOP: AP-ELEC.14/16	TITLE: LOSS OF SAFEGUARDS BUS 14/16	REV: 2 PAGE 9 of 17
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	<p>Check Charging Pump Suction Aligned To VCT:</p> <p>a. VCT level - GREATER THAN 20%</p> <p>b. Verify charging pumps aligned to VCT</p> <ul style="list-style-type: none"> o LCV-112C open o LCV-112B closed 	<p>a. <u>IF</u> VCT level can <u>NOT</u> be maintained greater than 5%, <u>THEN</u> perform the following:</p> <p>1) Ensure charging pump suction aligned to RWST</p> <ul style="list-style-type: none"> o LCV-112B open o LCV-112C closed <p>2) Continue with Step 11. <u>WHEN</u> VCT level greater than 20%, <u>THEN</u> do Step 10b.</p> <p>b. Manually align valves as necessary.</p>

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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

11 Check CVCS Operation:

a. Charging pumps - AT LEAST ONE
RUNNING

a. IF charging pump(s) available,
THEN perform the following:

- 1) Start charging pumps as necessary.
- 2) Establish greater than 20 gpm charging line flow.

IF NO charging pumps available,
THEN go to step 13

b. Charging line flow - GREATER
THAN 20 GPM

b. Establish charging line flow to
REGEN Hx - GREATER THAN 20 GPM

c. Check letdown indications:

c. Perform the following:

- o Check PRZR level - GREATER
THAN 13%
- o Letdown flow - APPROXIMATELY
40 GPM
- o Letdown flow - STABLE

- 1) Close loop B cold leg to
REGEN Hx, AOV-427.
- 2) Close letdown orifice valves
(AOV-200A, AOV-200B, and
AOV-202)
- 3) IF PRZR level greater than
13%, THEN go to Step 12. IF
NOT, THEN continue with
Step 14. WHEN PRZR level
greater than 13%, THEN do
Steps 12 and 13.

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

e. Go to Step 13

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Steps 12 and 13 may be performed concurrently.

12 Establish Normal Letdown:

- a. Establish charging line flow to REGEN Hx - GREATER THAN 20 GPM
- b. Place letdown controllers in MANUAL at 40% open
 - TCV-130
 - PCV-135
- c. Open AOV-427
- d. Open letdown orifice valves as necessary
- e. Place TCV-130 in AUTO at 105°F
- f. Place PCV-135 in AUTO at 250 psig
- g. Adjust charging pump speed and HCV-142 as necessary

Perform the following steps in sequence to establish excess letdown, if desired:

- 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

13 Verify PRZR Heaters Restored:

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

IF adequate D/G capacity available for PRZR heaters (400 kw each bank), THEN perform the following:

- a. Reset and close PRZR proportional heater breaker if necessary.
- b. Reset PRZR backup heater breaker and return to AUTO if necessary.

IF adequate D/G capacity NOT available, THEN refer to ER-PRZR.1.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	Verify Normal Rod Control Restored:	
a.	Annunciator C-5, PPCS ROD SEQUENCE OR ROD DEVIATION - EXTINGUISHED	a. <u>IF</u> alarm is due to a loss of power to MRPI, <u>THEN</u> maintain rods in manual <u>AND</u> minimize rod motion. <u>IF</u> alarm is due to actual rod misalignment, <u>THEN</u> refer to AP-RCC.2, RCC/RPI MALFUNCTION, while continuing with this procedure.
b.	Annunciator E-28, POWER RANGE ROD DROP ROD STOP - EXTINGUISHED	b. Perform the following: 1) Place rod control bank selector switch in MANUAL. 2) Reset NIS rod drop rod stop signals (at NIS racks) as necessary.
c.	Annunciator F-15, RCS TAVG DEV 4°F - EXTINGUISHED	c. Go to step 15
d.	Place rod control bank selector switch in AUTO if desired	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
15	Establish Stable Plant Conditions:	
	a. Check Tav _g - TRENDING TO TREF	a. Insert control rods or, if necessary, decrease turbine load to match Tav _g to Tref.
	b. Check 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. Check 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.
16	Restore Normal Electric System Alignment:	
	a. Verify circuit 767 and/or 751 - AVAILABLE	a. Continue with Step 17. <u>WHEN</u> offsite power available, <u>THEN</u> do Steps 16b and c.
	b. Verify all emergency AC bus normal feed breakers - CLOSED	b. Perform the following:
	<ul style="list-style-type: none"> • Bus 14 • Bus 16 • Bus 17 • Bus 18 	1) Restore emergency AC busses to normal power supply (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER) 2) <u>IF</u> normal power is restored to all AC emergency buses, <u>THEN</u> return to step 7. <u>IF NOT</u> , <u>THEN</u> go to step 17.
	c. Stop any unloaded emergency D/G and place in standby (Refer to T-27.4)	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17	Establish Normal Plant Conditions:	
a.	Verify 2 charging pumps - RUNNING	a. Perform the following: 1) Manually start charging pumps as necessary. 2) Place selected charging pump speed controller in AUTO if desired.
b.	Verify at least 2 CNMT recirc fans - RUNNING	b. Start CNMT recirc fans as necessary (240 kw each).
c.	Check CCW pumps - ONLY ONE RUNNING	c. Locally verify two CCW pumps running, <u>THEN</u> manually stop one pump.
d.	Check radiation monitoring systems: o CNMT vent sample pump - RUNNING o Plant vent sample pump - RUNNING o All area and process monitors operating as required	d. Restore sample pumps and radiation monitors as necessary. (Refer to CHA-RETS-ODCM).
18	Check Status Of DC System Loads:	
a.	Verify TDAFW pump DC oil pump - OFF IN AUTO	a. Perform the following: 1) Direct AO to locally check TDAFW AC oil pump running. <u>IF</u> not running, <u>THEN</u> start pump from MCB. 2) Stop TDAFW pump DC oil pump.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Inst Bus C provides power to all MCB manual controllers.

19 Check Status of Battery
Chargers:

a. Battery Chargers 1A OR 1A1 -
ENERGIZED.

a. IF BOTH battery chargers are
deenergized, THEN direct the
Electricians to crosstie TSC
battery charger to main battery
A (Refer to ATTACHMENT TRANSFER
BATTERY TO TSC).

b. Battery Chargers 1B OR 1B1 -
ENERGIZED

b. IF BOTH battery chargers are
deenergized, THEN direct the
Electricians to crosstie TSC
battery charger to main battery
B (Refer to ATTACHMENT TRANSFER
BATTERY TO TSC).

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	20 Restore Equipment Alignment:	
	a. Verify annunciator L-1, AUX BLDG VENT SYSTEM CONTROL PANEL - EXTINGUISHED	a. Dispatch AO to restore AUX BLDG ventilation (Refer to T-35A, AUX AND INTERMEDIATE BUILDING VENTILATION STARTUP AND SHUTDOWN)
	b. Restore affected bus equipment as desired	
	o SFP Cooling	
	o Penetration cooling fans	
	o Reactor compartment cooling fans	
	o Hydrogen panel	
	o PA system inverter (Battery Room A)	
	o Auxiliary Bldg lighting (normal supply MCC D, manual throwover to MCC C)(located at MCC C)	
	o Fire system (Refer to SC-3.16.2.3)	
	c. Check control board annunciator panels - ALARM STATUS VALID FOR PLANT CONDITIONS	c. Perform alarm response procedures for unexpected alarms.
	d. Verify control board valve alignment - NORMAL (Refer to O-6.13, DAILY SURVEILLANCE LOG)	d. Manually align valves as necessary.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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

21 Verify emergency AC bus
normal feed breakers closed

Return to Step 7

- o Bus 14
- o Bus 16

22 Verify Inst Bus B on normal
supply

Place Inst Bus B on normal supply
(Refer to ER-INST.3, INSTRUMENT BUS
POWER RESTORATION).

23 Reset UV relay targets on
undervoltage cabinets

- o Bus 14
- o Bus 16

24 Notify Higher Supervision

25 Return To Procedure Or
Guidance In Effect

-END-

EOP:	TITLE:	REV: 2
AP-ELEC.14/16	LOSS OF SAFEGUARDS BUS 14/16	PAGE 1 of 1

AP-ELEC.14/16 APPENDIX LIST

TITLE

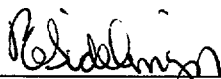
- 1) ATTACHMENT TRANSFER BATTERY TO TSC (ATT-24.0)

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 1 of 13
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

2-8-2001

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 2 of 13
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A. PURPOSE - This procedure provides guidance in the event of a loss of RHR cooling at or above normal loop levels. (i.e. RCS loop levels of 64 inches or greater)

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from;

- a. FR-C.3, RESPONSE TO SATURATED CORE COOLING, or
- b. AP-ELEC.3, LOSS OF 12A AND/OR 12B TRANSFORMER (BELOW 350°F), when RHR flow can NOT be restored, or
- c. AP-CCW.3, LOSS OF CCW - PLANT SHUTDOWN when CCW is inadequate for RHR cooling

2. SYMPTOMS - The following are symptoms of LOSS OF RHR;

- a. No RHR pumps running, or
- b. Annunciator A-20, RESIDUAL HEAT REMOVAL LOOP LO FLOW 2900 GPM (Set at 400 GPM per 0-2.2 in RHR Cooling mode), lit, or
- c. Unexpected increase in temperature while on RHR cooling, or
- d. Erratic or no flow on FI-626, RHR Loop Flow, or
- e. Annunciator J-9, SAFEGUARD BREAKER TRIP, lit.

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 3 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>DO NOT START ANOTHER RHR PUMP UNTIL THE CAUSE OF THE ABNORMAL RHR INDICATIONS HAS BEEN DETERMINED. IF A RUNNING PUMP HAS TRIPPED FOR REASONS OTHER THAN LOSS OF SUCTION FLOW, THEN REDUNDANT PUMP MAY BE STARTED.</p> <p>*****</p> <p><u>NOTE:</u> Conditions should be evaluated for site contingency reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION).</p>		
1	Check PRZR Wide Range Level - GREATER THAN 0 INCHES	<p><u>IF</u> RCS loop level indicator in service and loop level less than 64 inches, <u>THEN</u> go to AP-RHR.2, LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS.</p>

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 4 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2	Check If RHR Pump(s) Should Be Stopped:	
a.	RHR pump - ANY RUNNING	a. Go to Step 3.
b.	Check RHR pump flow - LESS THAN 1500 GPM PER PUMP	b. Decrease RHR flow as necessary. <u>IF</u> RHR flow can <u>NOT</u> be controlled, <u>THEN</u> perform the following: <ol style="list-style-type: none"> 1) Stop running RHR pump. 2) Dispatch an AO with a locked valve key to locally throttle RHR Hx outlet valves to approximately half open. <ul style="list-style-type: none"> • A RHR Hx, HCV-625 handwheel • B RHR Hx, HCV-624 handwheel 3) Start an RHR pump. 4) Direct AO to locally adjust RHR flow to less than 1500 gpm.
c.	RHR pumps cavitating: <ol style="list-style-type: none"> o RHR pump flow - OSCILLATING -OR- o RHR pump NPSH - APPROXIMATELY ZERO (PPCS group GD NPSH) 	c. Go to Step 17.
d.	Stop RHR pumps	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

<u>CAUTION</u>		
<ul style="list-style-type: none">o DO NOT INITIATE ANY ACTIONS WHICH MAY ADD POSITIVE REACTIVITY TO THE CORE.o NOTIFY S/G OFFICE THAT CNMT BREATHING AIR MAY BE LOST.o IF REFUELING IN PROGRESS, THEN STOP REFUELING OPERATIONS (NOTIFY REFUELING SRO).		

<u>NOTE:</u> Personnel remaining in CNMT to assist in event mitigation should consult Health Physics for changes in radiological concerns.		
3 Initiate Actions To Protect Personnel In CNMT:		
<ul style="list-style-type: none">a. Evacuate non-essential personnel from CNMTb. Verify all available CNMT RECIRC fan(s) - RUNNINGc. Initiate monitoring of CNMT area and process radiation monitorsd. Verify CNMT penetrations with direct access to outside atmosphere - CLOSED (Refer to Attachment CNMT CLOSURE)b. Manually start available CNMT RECIRC fans.c. Refer to appropriate alarm response procedures for required actions.d. Within 4 hours, close all CNMT penetrations to outside atmosphere.		

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 6 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4	Check RHR Cooling Valve Alignment - NORMAL (Refer to Attachment NORMAL RHR COOLING)	Manually or locally align valves as necessary.
<p style="text-align: center;">***** <u>CAUTION</u> THE RHR HX OUTLET VALVES (HCV-624 AND HCV-625) WILL FAIL OPEN ON LOSS OF INSTRUMENT AIR PRESSURE. *****</p>		
5	Check IA System:	
a.	Verify 2 IA compressors - RUNNING	a. Manually start IA compressors as necessary (75 kw each). <u>IF</u> IA compressors can <u>NOT</u> be started manually, <u>THEN</u> dispatch AO to locally reset and start compressors (75 kw each).
b.	Check IA supply	b. <u>IF</u> IA pressure can <u>NOT</u> be restored, <u>THEN</u> perform the following:
	o Pressure - GREATER THAN 60 PSIG	1) Dispatch AO with a locked valve key to locally throttle RHR Hx outlet valves to approximately half open.
	o Pressure - STABLE OR INCREASING	<ul style="list-style-type: none"> • A RHR Hx, HCV-625 handwheel • B RHR Hx, HCV-624 handwheel
		2) <u>WHEN</u> conditions permit, <u>THEN</u> refer to AP-IA.1, LOSS OF INSTRUMENT AIR, to restore IA.

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 7 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
* 6	Monitor RCS Temperature - GREATER THAN 200°F	<p>Perform the following:</p> <ul style="list-style-type: none"> a. Notify Plant Staff to attempt to establish CNMT integrity <u>AND</u> CNMT heat removal capability. b. Go to step 8.
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>o CHANGES IN RCS PRESSURE COULD RESULT IN INACCURACIES IN RCS LOOP LEVEL INDICATION</p> <p>o UNSTABLE OR FLUCTUATING LEVEL INSTRUMENTS SHOULD NOT BE RELIED ON FOR INDICATION OF RCS INVENTORY.</p> <p>*****</p>		
7	Verify RCS Intact:	<p>Perform the following:</p> <ul style="list-style-type: none"> a. Verify charging line flow control valve, HCV-142, open as necessary. b. Ensure charging line valve to loop B cold leg, AOV-294, open. c. Start charging pumps as necessary. d. Control charging pump speed and letdown flow as necessary to stabilize RCS conditions. <ul style="list-style-type: none"> • PRZR pressure • PRZR level • Loop level <p><u>IF</u> charging flow greater than 75 gpm with letdown isolated <u>OR</u> unable to verify RCS inventory, <u>THEN</u> go to AP-RCS.4, SHUTDOWN LOCA.</p>
	<ul style="list-style-type: none"> o PRZR level - GREATER THAN 5% AND STABLE o RCS pressure - STABLE o RCS subcooling based on core exit T/Cs - GREATER THAN 0°F USING FIGURE MIN SUBCOOLING o RCS vent paths - CLOSED 	

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 8 of 13
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

8 Establish Conditions To Start RHR Pump:

a. RHR pump - AVAILABLE

a. Perform the following:

- 1) Start trending core exit TCs.
- 2) IF RCS closed, THEN go to Step 10. IF RCS open to atmosphere, THEN go to Step 16.

b. Verify CCW cooling to RHR system in service

b. Perform the following:

- o CCW pumps - AT LEAST ONE RUNNING
- o CCW to RHR Hxs, MOV-738A AND MOV-738B - OPEN AS NECESSARY

- 1) Ensure at least one CCW pump running.
- 2) Open MOV-738A and MOV-738B as necessary.

IF CCW can NOT be restored, THEN continue with Step 9 while attempting to restore CCW (Refer to AP-CCW.3, LOSS OF CCW - PLANT SHUTDOWN).

c. Close RHR pump flow control valves (controllers at 100% demand)

- HCV-624
- HCV-625

d. Place RHR Hx bypass valve, HCV-626, to MANUAL and close valve

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 9 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>STARTING AN RHR PUMP MAY RESULT IN AN RCS LEVEL OR PRESSURE DECREASE DUE TO SHRINK OR VOID COLLAPSE.</p> <p>*****</p>		
9	Restore RHR Flow:	
	a. Start one RHR pump - RHR PUMP RUNNING	a. Go to Step 9e.
	b. Check RHR flow - LESS THAN 1500 GPM PER PUMP	b. Manually adjust RHR flow as necessary.
	c. Adjust RHR Hx bypass flow control valve, HCV-626, to desired flowrate	
	d. Place RHR Hx bypass flow control valve, HCV-626, controller in AUTO	
	e. RHR flow - RESTORED	e. Perform the following:
		1) Start trending core exit T/Cs.
		2) <u>IF</u> RCS closed, <u>THEN</u> go to Step 10. <u>IF</u> RCS vented to atmosphere, <u>THEN</u> go to Step 16.
	f. Open RHR Hx outlet valves as necessary to control RCS temperature	
	<ul style="list-style-type: none"> • HCV-624 • HCV-625 	

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 10 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10 Monitor RCS Temperature:		
a. RCS temperature - STABLE OR DECREASING		a. <u>IF</u> RCS closed, <u>THEN</u> go to Step 11. <u>IF</u> RCS open to atmosphere, <u>THEN</u> go to Step 16.
b. Go to Step 19		
11 Check Any S/G Level - GREATER THAN 17%		Verify at least 200 gpm AFW flow available. <u>IF NOT</u> , <u>THEN</u> go to Step 17.
12 Check RCS Pressure - GREATER THAN 300 PSIG		Increase RCS pressure to greater than 300 psig. <u>IF</u> RCS pressure can <u>NOT</u> be increased, <u>THEN</u> go to Step 17.
13 Check RCP Status - ANY RCP RUNNING		Perform the followig: a. Establish conditions for starting an RCP. o Verify bus 11A or 11B energized. o Refer to Attachment RCP START. b. Start one RCP. <u>IF</u> an RCP can <u>NOT</u> be started, <u>THEN</u> verify natural circulation. (Refer to Attachment NC.) <u>IF</u> natural circulation <u>NOT</u> verified, <u>THEN</u> increase dumping steam.

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 11 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	<p>Establish Condenser Steam Dump Manual Control:</p> <ul style="list-style-type: none"> a. Verify condenser available: <ul style="list-style-type: none"> o Any MSIV - OPEN o Annunciator G-15, STEAM DUMP ARMED - LIT b. Place condenser steam dump controller HC-484 in MANUAL c. Place steam dump mode selector switch to MANUAL d. Open steam dump valves as necessary to stabilize RCS temperature 	<ul style="list-style-type: none"> a. Perform the following: <ul style="list-style-type: none"> 1) Place S/G ARV controller in MANUAL and open ARVs as necessary to stabilize RCS temperature. 2) Go to Step 15.
15	<p>Monitor RCS Temperature:</p> <ul style="list-style-type: none"> a. RCS temperature - STABLE OR DECREASING 	<ul style="list-style-type: none"> a. <u>IF</u> dumping steam does <u>NOT</u> provide adequate cooling, <u>THEN</u> perform the following: <ul style="list-style-type: none"> 1) Initiate S/G blowdown from both S/Gs. 2) Maintain both S/G levels stable by controlling AFW flow. 3) Go to Step 17. b. Go to Step 18

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 12 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
16	Check RCS Conditions:	
a.	Rx vessel head - REMOVED	a. Go to Step 17.
b.	Stop refueling operations if in progress	
c.	Verify Refueling Cavity Level - GREATER THAN 23 FEET ABOVE VESSEL FLANGE	c. Increase refueling cavity level to greater than 23 feet (Refer to O-15.3, FILLING REFUELING CANAL).
d.	Verify refueling cavity sweep fans - RUNNING	d. Locally start refueling cavity sweep fans if available.
17	Check CCW System Operation:	To restore CCW cooling to RHR Hxs, perform the following:
o	CCW pumps - AT LEAST ONE RUNNING	
o	CCW to RHR Hxs, MOV-738A AND MOV-738B - OPEN AS NECESSARY	a. Ensure the standby CCW pump is running.
o	Annunciator A-21, COMP COOLING HX OUT HI TEMP - EXTINGUISHED	b. Open MOV-738A and MOV-738B as necessary.
o	Annunciator A-22, CCW PUMP DISCHARGE LO PRESS - EXTINGUISHED	<u>IF</u> CCW can <u>NOT</u> be restored, <u>THEN</u> continue attempts to restore CCW (Refer to AP-CCW.3, LOSS OF CCW - PLANT SHUTDOWN).
o	Annunciator A-30, CCW PUMP INLET HEADER HI TEMP - EXTINGUISHED	

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 13 of 13
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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NOTE: Consult with Plant Staff to determine alternatives for long term cooling.

18 Monitor RHR Cooling:

Perform the following:

- o RHR cooling - RESTORED
- o RCS temperature - STABLE OR DECREASING

- a. Evaluate alternatives for long term cooling (Consult Plant Staff)

- Consider establishing secondary heat sink
- Refer to ER-RHR.1, RCDT PUMP OPERATION FOR CORE COOLING
- Consider RCS feed and bleed

- b. Continue attempts to restore RHR to operable.

- c. Return to Step 3.

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

19 Notify Higher Supervision

20 Return to Procedure Or Guidance In Effect

-END-

EOP: AP-RHR.1	TITLE: LOSS OF RHR	REV: 15 PAGE 1 of 1
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AP-RHR.1 APPENDIX LIST

TITLE

- 1) FIGURE MIN SUBCOOLING (FIG-1.0)
- 2) ATTACHMENT NORMAL RHR COOLING (ATT-14.0)
- 3) ATTACHMENT RCP START (ATT-15.0)
- 4) ATTACHMENT NC (ATT-13.0)
- 5) ATTACHMENT CNMT CLOSURE (ATT-3.1)

EOP: FIG-3.1	TITLE: FIGURE NAT CIRC C/D WITHOUT SHROUD FANS	REV: 1 PAGE 1 of 1
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Responsible Manager Residehman Date 2-8-2001
RCS PRESSURE (PSIG)

