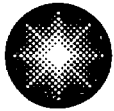


1503 Lake Road
Ontario, New York 14519-9364
585.771.3000



Constellation Energy

R.E. Ginna Nuclear Power Plant, LLC

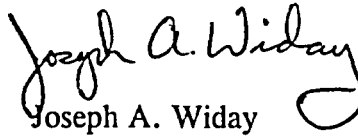
June 10, 2004

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

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
ECA Index
AP-ELEC.2, Rev 11
ECA-0.0, Rev 28

A002

NPSP0200
WRIGHTJ

Ginna Nuclear Power Plant
PROCEDURE INDEX

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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 BUSES	026	05/30/2003	06/26/2002	06/26/2007	EF
AP-ELEC.2	SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM LOW FREQUENCY	011	06/10/2004	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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Ginna Nuclear Power Plant
PROCEDURE INDEX

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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-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

NPSP0200
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Ginna Nuclear Power Plant
PROCEDURE INDEX

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INPUT PARAMETERS: TYPE: PRECA

STATUS VALUE(S): EF, QU

5 YEARS ONLY:

PRECA EMERGENCY CONTINGENCY ACTIONS PROC

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
ECA-0.0	LOSS OF ALL AC POWER	028	06/10/2004	03/24/2003	03/24/2008	EF
ECA-0.1	LOSS OF ALL AC POWER RECOVERY WITHOUT SI REQUIRED	023	01/07/2004	03/24/2003	03/24/2008	EF
ECA-0.2	LOSS OF ALL AC POWER RECOVERY WITH SI REQUIRED	015	05/30/2003	03/24/2003	03/24/2008	EF
ECA-1.1	LOSS OF EMERGENCY COOLANT RECIRCULATION	022	05/30/2003	03/24/2003	03/24/2008	EF
ECA-1.2	LOCA OUTSIDE CONTAINMENT	006	05/30/2003	03/24/2003	03/24/2008	EF
ECA-2.1	UNCONTROLLED DEPRESSURIZATION OF BOTH STEAM GENERATORS	027	01/07/2004	03/24/2003	03/24/2008	EF
ECA-3.1	SGTR WITH LOSS OF REACTOR COOLANT SUBCOOLED RECOVERY DESIRED	026	05/30/2003	03/24/2003	03/24/2008	EF
ECA-3.2	SGTR WITH LOSS OF REACTOR COOLANT SATURATED RECOVERY DESIRED	027	05/30/2003	03/24/2003	03/24/2008	EF
ECA-3.3	SGTR WITHOUT PRESSURIZER PRESSURE CONTROL	030	01/07/2004	03/24/2003	03/24/2008	EF

PRECA TOTAL: 9

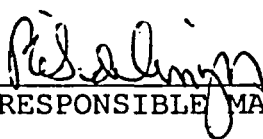
GRAND TOTAL: 9

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 1 of 15
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GINNA STATION

CONTROLLED COPY NUMBER

23


RESPONSIBLE MANAGER

6-10-2004
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 2 of 15
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A. PURPOSE - This procedure provides actions to be taken if AC Emergency bus (14, 16, 17, and 18) voltage decreases to less than 420 V, or if system frequency decreases to less than 59.9 Hz.

B. ENTRY CONDITIONS/SYMPTOMS

2.. SYMPTOMS - The symptoms of AC EMERGENCY BUSES LOW VOLTAGE OR SYSTEM LOW FREQUENCY are;

- a. Any AC Emergency bus voltmeters Bus 14, 16, 17, or 18, less than 420 V. or
- b. RG&E Energy Control Center notifies Ginna Control Room that system frequency is less than 59.9 Hz.

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 3 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>o THE DIESELS SHOULD NOT BE OPERATED AT IDLE OR MINIMUM LOAD FOR EXTENDED PERIODS OF TIME.</p> <p>o IF THE DIESELS ARE SHUT DOWN. THEY SHOULD BE PREPARED FOR RESTART.</p> <p>*****</p> <p><u>NOTE:</u> IF circuit 767 or 751 is available with voltage approximately 34 KV and frequency greater than 59.9 Hz, THEN refer to 0-6.9.2. ESTABLISHING AND/OR TRANSFERRING OFFSITE POWER TO BUS 12A/12B to go to 100/0 or 0/100 lineup.</p>		
1	Check Safeguards Bus Voltages:	<p><u>IF</u> any safeguards bus voltage less than 420 volts, <u>THEN</u>, start both emergency D/Gs and continue to monitor voltage.</p> <p><u>IF</u> any safeguards bus voltage decreases to less than 414 volts, <u>THEN</u> go to Step 4.</p>
	<ul style="list-style-type: none"> Safeguards busses 14, 16, 17 and 18 voltage - GREATER THAN 420 VOLTS 	
2	Check With RG&E Energy Control Center To Verify System Frequency - GREATER THAN 59.9 HZ HZ	<p><u>IF</u> system frequency less than 59.9 Hz, <u>THEN</u> start both emergency D/Gs and continue to monitor frequency.</p> <p><u>IF</u> system frequency decreases to less than 58.5 Hz, <u>THEN</u> go to Step 4.</p>

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 4 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
3	Establish Monitoring Of - SAFEGUARDS BUS VOLTAGE/SYSTEM FREQUENCY, AND GO TO STEP 13.	
4	Check Status Of Operating D/Gs:	
	a. Unit/parallel operation selector - IN UNIT POSITION	a. Place D/G unit/parallel operation selector in UNIT position.
	b. Voltage control - IN AUTO	b. Place voltage control in AUTO.
	c. Voltage - APPROXIMATELY 480 VOLTS	c. Adjust auto voltage control rheostat to obtain 480 volts.
	d. Frequency - APPROXIMATELY 60 HZ	d. Adjust D/G governor control to raise or lower D/G speed to obtain 60 Hz.

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 5 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>o OBSERVE D/G LOADING LIMITS OF 2300 KW FOR ½ HOURS, 2250 KW FOR 2 HOURS, AND 1950 KW FOR CONTINUOUS SERVICE.</p> <p>o ROTATING ELECTRICAL EQUIPMENT NOT REQUIRED FOR SAFE OPERATION OF THE PLANT SHOULD BE STOPPED BEFORE TRANSFERRING THE ASSOCIATED SAFEGUARDS BUS.</p> <p>*****</p>		
5	<p>Complete Transfer Of Safeguards Buses To The Emergency D/Gs And Restoration Of Required Equipment As Follows:</p> <p>a. Transfer Instrument Bus B to its maintenance supply (Refer to ER-INST.3).</p> <p>b. Bus 14 transfer:</p> <ol style="list-style-type: none"> 1) Open Bus 14 normal feed 480V breaker 2) Verify D/G "A" Bus 14 supply breaker closes 3) Check and restore equipment lost during bus transfer: <ul style="list-style-type: none"> o Charging pumps o PRZR htrs o RHR pump o MCCs o CNMT Recirc fan coolers o CCW pump o Aux FW pump 	
<p>This Step continued on the next page.</p>		

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 6 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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(Step 5 continued from previous page)

c. Bus 16 transfer:

- 1) Open Bus 16 normal feed 480V breaker
- 2) Verify D/G B Bus 16 supply breaker closes
- 3) Check and restore equipment lost during bus transfer:
 - o Charging pumps
 - o PRZR backup htrs
 - o RHR pump
 - o MCCs
 - o CNMT Recirc fan coolers
 - o CCW pump
 - o Aux FW pump

d. Bus 17 transfer:

- 1) Open Bus 17 normal feed 480V breaker
- 2) Verify D/G "B" Bus 17 supply breaker closes
- 3) Check and restore equipment lost during bus transfer:
 - o SW pumps
 - o MCC G
 - o Motor Fire pump

This Step continued on the next page.

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 7 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	(Step 5 continued from previous page)	
	e. Bus 18 transfer:	
	1) Open Bus 18 normal feed 480V breaker	
	2) Verify D/G "A" Bus 18 supply breaker closes	
	3) Check and restore equipment lost during bus transfer:	
	o SW pumps	
	o MCC G	
	f. Transfer Instrument Bus B back to its normal supply (Refer to ER-INST.3)	

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 8 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	<p>Verify Status Of Equipment Required For Current Plant Conditions:</p> <ul style="list-style-type: none"> o Charging pumps - OPERATING AS REQUIRED o SW pumps - OPERATING AS REQUIRED o CCW pumps - OPERATING AS REQUIRED o PRZR heaters - OPERATING AS REQUIRED o RHR pumps - OPERATING AS REQUIRED o MCCs - ALL ENERGIZED o CNMT Recirc fan coolers - OPERATING AS REQUIRED o Motor fire pump breaker - CLOSED AS REQUIRED o Aux FW pumps - OPERATING AS REQUIRED o SFP cooling pump A or B - OPERATING AS REQUIRED o Discharge canal sample pump - OPERATING 	<p><u>IF</u> required equipment <u>NOT</u> operating. <u>THEN</u> start equipment as necessary.</p>

EDP: AP-ELEC.2	TITLE: SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 9 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	<p>Check D/G Operation Periodically:</p> <ul style="list-style-type: none"> D/G voltage - AT APPROXIMATELY 480V D/G frequency - AT APPROXIMATELY 60 Hz 	<p><u>IF</u> D/G voltage/frequency <u>NOT</u> as desired. <u>THEN</u> adjust D/G voltage/frequency to obtain desired values.</p>
8	<p>Establish Monitoring of D/Gs:</p> <ul style="list-style-type: none"> Take hourly log readings on running D/G(s) per T-27.4. DIESEL GENERATOR OPERATION 	
	<p><u>NOTE:</u> Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting requirements.</p>	
9	<p>Notify Higher Supervision</p>	
10	<p>Establish Conditions To Return Safeguards Busses To Normal Power Supplies:</p> <ul style="list-style-type: none"> Verify circuit 767 and/or 751 available with voltage approximately 34 KV System frequency greater than 59.9 Hz Cause of degraded condition known and corrected 	<p>Return to Step 7.</p>

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 10 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>ROTATING ELECTRICAL EQUIPMENT NOT REQUIRED FOR SAFE OPERATION OF THE PLANT SHOULD BE STOPPED BEFORE TRANSFERRING THE ASSOCIATED SAFEGUARDS BUS.</p> <p>*****</p>		
11	<p>Remove D/G A From Service And Restore Required Equipment As Follows:</p> <p>a. Transfer instrument Bus B to its maintenance supply (Refer to ER-INST.3)</p> <p>b. Bus 14 transfer:</p> <ol style="list-style-type: none"> 1) Manually hold closed Bus 14 normal feed 480V bkr switch 2) Open D/G A Bus 14 supply breaker 3) Verify Bus 14 normal feed 480V bkr closes 4) Check and restore equipment lost during bus transfer: <ul style="list-style-type: none"> o Charging pumps o PRZR htrs o RHR pumps o MCCs o CNMT Recirc fan coolers o CCW pump o Aux FW 	<p>3) <u>IF</u> normal feed bkr fails to close, <u>THEN</u> ensure D/G supply bkr closes back in and investigate.</p>
<p>This Step continued on the next page.</p>		

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 11 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	(Step 11 continued from previous page)	
	c. Bus 18 transfer:	
	1) Manually hold closed Bus 18 normal feed 480V bkr switch	
	2) Open D/G A Bus 18 supply breaker	
	3) Verify Bus 18 normal feed 480V bkr closes	3) <u>IF</u> normal feed bkr fails to close, <u>THEN</u> ensure D/G supply bkr closes back in and investigate.
	4) Check and restore equipment lost during bus transfer:	
	o SW pumps	
	o MCC G	
	d. Stop D/G A <u>AND</u> align for auto standby (Refer to ATT-8.1, ATTACHMENT D/G STOP)	
	e. Transfer Instrument Bus B back to its normal supply (Refer to ER-INST.3)	

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 12 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>ROTATING ELECTRICAL EQUIPMENT NOT REQUIRED FOR SAFE OPERATION OF THE PLANT SHOULD BE STOPPED BEFORE TRANSFERRING THE ASSOCIATED SAFEGUARDS BUS.</p> <p>*****</p>		
12	<p>Remove D/G B From Service And Restore Required Equipment As Follows:</p> <p>a. Bus 16 transfer:</p> <ol style="list-style-type: none"> 1) Manually hold closed Bus 16 normal feed 480V bkr switch 2) Open D/G B Bus 16 supply breaker 3) Verify Bus 16 normal feed 480V bkr closes 4) Check and restore equipment lost during bus transfer: <ul style="list-style-type: none"> o Charging pumps o PRZR backup htrs o RHR pump o MCCs o CNMT Recirc fan coolers o CCW pump o Aux FW pump 	<p>3) <u>IF</u> normal feed bkr fails to close. <u>THEN</u> ensure D/G bkr closes back in and investigate.</p>
<p>This Step continued on the next page.</p>		

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 13 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	(Step 12 continued from previous page)	
	b. Bus 17 transfer:	
	1) Manually hold closed Bus 17 normal feed 480V bkr switch	
	2) Open D/G B Bus 17 supply breaker	
	3) Verify Bus 17 normal feed 480V bkr closes	3) <u>IF</u> normal feed bkr fails to close, <u>THEN</u> ensure D/G bkr closes back in and investigate.
	4) Check and restore equipment lost during bus transfer:	
	o SW pumps	
	o MCC G	
	o Motor fire pump	
	c. Stop D/G B and align for auto standby (Refer to ATT-8.1, ATTACHMENT D/G STOP)	

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 14 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	<p>Verify Status Of Equipment Required For Current Plant Conditions:</p> <ul style="list-style-type: none"> o Charging pumps - OPERATING AS REQUIRED o SW pumps - OPERATING AS REQUIRED o CCW pumps - OPERATING AS REQUIRED o PRZR heaters - OPERATING AS REQUIRED o RHR pumps - OPERATING AS REQUIRED o MCCs - ALL ENERGIZED o CNMT Recirc fan coolers - OPERATING AS REQUIRED o Motor fire pump breaker - CLOSED AS REQUIRED o Aux Feed pumps - OPERATING AS REQUIRED o SFP cooling pump A or B - OPERATING AS REQUIRED o Discharge canal sample pump - OPERATING 	<p><u>IF</u> required equipment <u>NOT</u> operating; <u>THEN</u> start equipment.</p>

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 15 of 15
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	Verify Safeguards Bus Voltage/System Frequency Normal:	<u>IF</u> safeguards bus voltage less than 420 volts. <u>THEN</u> return to Step 1.
	o All safeguards busses voltage - GREATER THAN 420 VOLTS	<u>IF</u> system frequency less than 59.9 Hz. <u>THEN</u> return to Step 2.
	o Check with RG&E Energy Control Center to verify system frequency - GREATER THAN 59.9 HZ	
15	Evaluate MCB Annunciator Status (Refer to AR Procedures)	
16	Notify Higher Supervision	
17	Establish Further Guidance:	
	o Return to procedure in effect or operating procedures	
	-END-	

EOP: AP-ELEC.2	TITLE: SAFEGUARD BUSES LOW VOLTAGE OR SYSTEM ABNORMAL FREQUENCY	REV: 11 PAGE 1 of 1
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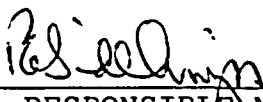
AP-ELEC.2 APPENDIX LIST

TITLE

- 1) ATTACHMENT D/G STOP (ATT-8.1)

EOP: ECA-0.0	TITLE: LOSS OF ALL AC POWER	REV: 28 PAGE 1 of 25
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GINNA STATION
CONTROLLED COPY NUMBER 23


RESPONSIBLE MANAGER

6-10-2004
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP:	TITLE:	REV: 28
ECA-0.0	LOSS OF ALL AC POWER	PAGE 2 of 25

A. PURPOSE - This procedure provides actions to respond to a loss of all AC power.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure may be entered directly or from:
 - a. E-0, REACTOR TRIP OR SAFETY INJECTION, on the indication that both Bus 14 and Bus 16 are deenergized.
2. SYMPTOMS - Which indicate a loss of all AC power are:
 - a. Neither 480 volt AC emergency bus 14 nor 16 available.

EOP: ECA-0.0	TITLE: LOSS OF ALL AC POWER	REV: 28 PAGE 3 of 25
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>DUE TO POTENTIALLY EXTREME ENVIRONMENTAL CONDITIONS, CAUTION SHOULD BE USED WHEN ENTERING THE INTERMEDIATE BLDG FOR LOCAL ACTIONS.</p> <p>*****</p> <p><u>NOTE:</u> o CSFSTs should be monitored for information only. FR procedures should not be implemented.</p> <p> o Local actions may require portable lighting and communication devices.</p>		
1	<p>Verify Reactor Trip:</p> <ul style="list-style-type: none"> o At least one train of reactor trip breakers - OPEN o Neutron flux - DECREASING o MRPI indicates - ALL CONTROL AND SHUTDOWN RODS ON BOTTOM 	<p>Manually trip reactor.</p> <p><u>IF</u> reactor trip breakers <u>NOT</u> open, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> a. Open Bus 13 and Bus 15 normal feed breakers. b. Verify rod drive MG sets tripped. c. Close Bus 13 and Bus 15 normal feed breakers. d. Reset lighting breakers.
2	<p>Verify Turbine Stop Valves - CLOSED</p>	<p>Manually trip turbine.</p> <p><u>IF</u> turbine trip can <u>NOT</u> be verified, <u>THEN</u> close both MSIVs.</p>

EOP: ECA-0.0	TITLE: LOSS OF ALL AC POWER	REV: 28 PAGE 4 of 25
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: FOLDOUT page should be open and monitored periodically.

- * 3 Adjust S/G ARVs To Control
Tavg At Approximately 547°F

4 Stop Both RCPs

NOTE: Adverse CNMT values should be used whenever CNMT pressure is greater than 4 psig or CNMT radiation is greater than 10^{+05} R/hr.

5 Check If RCS Is Isolated:

a. PRZR PORVs - CLOSED

a. IF PRZR pressure less than 2335 psig. THEN manually close PORVs.

b. Verify RCS isolation valves closed:

1) Place letdown orifice valve switches to CLOSE

- AOV-200A
- AOV-200B
- AOV-202

2) Place letdown isolation valve switches to CLOSE

- AOV-371
- AOV-427

3) Place excess letdown isolation valve switch to CLOSE (AOV-310)

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	Verify Adequate TDAFW Flow:	
a.	Verify TDAFW pump - RUNNING	<p>a. Perform the following:</p> <ol style="list-style-type: none"> 1) Verify governor valve, V-3652, latched. <u>IF</u> governor valve tripped, <u>THEN</u> dispatch AO to locally reset valve. 2) Manually or locally open at least one TDAFW pump steam supply valve. <ul style="list-style-type: none"> • MOV-3505A • MOV-3504A
b.	Verify TDAFW pump flow - GREATER THAN 200 GPM	<p>b. Verify proper TDAFW valve alignment:</p> <ol style="list-style-type: none"> 1) TDAFW pump discharge valve (MOV-3996) open. 2) Intact S/G TDAFW pump flow control valves open. <p><u>IF NOT</u>, <u>THEN</u> manually align valves as necessary.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p><u>NOTE:</u> o Conditions should be evaluated for Site Contingency Reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION).</p> <p>o AO should increase surveillance of TDAFW pump until AC power is restored.</p>	
7	<p>Try To Restore Power to Any Train Of AC Emergency Busses:</p>	
	<p>a. Verify emergency D/G aligned for unit operation</p> <p>o Mode switch in UNIT</p> <p>o Voltage control selector in AUTO</p> <p>b. Check emergency D/Gs - BOTH D/G RUNNING</p>	<p>a. Manually align switches on rear of MCB.</p> <p>b. <u>WHEN</u> non-running D/G available for starting. <u>THEN</u> perform the following:</p> <ol style="list-style-type: none"> 1) Depress D/G FIELD RESET pushbutton 2) Depress D/G RESET pushbutton 3) Start D/G 4) <u>IF</u> D/G starts, <u>THEN</u> go to Step 7c. 5) <u>IF</u> D/G will <u>NOT</u> start, <u>THEN</u> dispatch AO to locally start emergency D/Gs. <p><u>IF</u> no emergency D/G available. <u>THEN</u> perform the following:</p> <ol style="list-style-type: none"> a) Direct AO to attempt to restore emergency D/G (Refer to ER-D/G.1, RESTORING D/G) b) Go to Step 8.
This Step continued on the next page.		

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p>·(Step 7 continued from previous page)</p> <p>c. Check D/G voltage and frequency</p> <p>1) Voltage - APPROXIMATELY 480v</p> <p>2) Frequency - APPROXIMATELY 60 Hz</p> <p>d. Verify adequate D/G cooling</p> <p>o Bus 17 and/or Bus 18 - ENERGIZED</p> <p>o One SW Pump running for each running D/G</p> <p>e. Verify at least one train of AC emergency busses - ENERGIZED</p> <p>• Bus 14 and Bus 18</p> <p>• Bus 16 and Bus 17</p> <p>f. Return to procedure and step in effect</p>	
		<p>1) Adjust voltage control to restore voltage to approximately 480v</p> <p>2) Adjust governor to restore frequency to approximately 60 Hz</p> <p>d. Manually energize busses and start SW Pumps.</p> <p><u>IF</u> adequate cooling can <u>NOT</u> be supplied to a running D/G. <u>THEN</u> perform the following:</p> <p>1) Pull stop the D/G <u>AND</u> immediately depress associated VOLTAGE SHUTDOWN pushbutton.</p> <p>2) Align alternate cooling (Refer to ER-D/G.2. ALTERNATE COOLING FOR EMERGENCY D/Gs).</p> <p>e. Manually energize AC emergency busses.</p> <p><u>IF</u> Bus 14 <u>AND</u> Bus 16 are deenergized. <u>THEN</u> go to Step 8.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>o WHEN POWER IS RESTORED TO BUS 14 AND/OR BUS 16, RECOVERY ACTIONS SHOULD CONTINUE STARTING WITH STEP 27.</p> <p>o IF AN SI SIGNAL EXISTS OR IF AN SI SIGNAL IS ACTUATED DURING THIS PROCEDURE, IT SHOULD BE RESET TO PERMIT MANUAL LOADING OF EQUIPMENT ON AN AC EMERGENCY BUS.</p> <p>*****</p> <p>8 Establish The Following Equipment Alignment:</p> <p>a. Pull stop AC emergency bus loads</p> <ul style="list-style-type: none"> • RHR pumps • CNMT RECIRC fans • CNMT spray pumps • SI pumps • CCW pumps • Charging pumps • MDAFW pumps <p>b. Evaluate non-vital loads (Refer to ATT-8.3. ATTACHMENT NONVITAL)</p> <p>c. Place non-running SW pump switches to STOP, then return to AUTO</p> <p>d. Place switch for MOV-313, RCP seal return isolation valve, to CLOSE</p> <p>e. Momentarily place to CLOSE RCP CCW return valves</p> <ul style="list-style-type: none"> • MOV-759A • MOV-759B 		

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE:: Temporary power may be provided to Bus 16 by performing procedure ER-ELEC.4 and to Bus 13 by performing procedure ER-ELEC.5 at the Shift Supervisor's discretion.

9 Try To Restore Offsite Power:

- a. Consult RG&E Energy Control Center to determine if either normal offsite power supply - AVAILABLE

- o 12B transformer via breaker 76702

-OR-

- o 12A transformer via breaker 75112

- b. Reset SI, if necessary

- c. Restore offsite power (Refer to ER-ELEC.1. RESTORATION OF OFFSITE POWER)

- a. IF normal offsite power supply NOT readily available. THEN perform the following:

- 1) Restore IA system using the Diesel Air Compressor (Refer to ATT-11.2. ATTACHMENT DIESEL AIR COMPRESSOR).

- 2) Evaluate Main transformer backfeed for long term concerns (Refer to ER-ELEC.3. EMERGENCY OFFSITE BACKFEED VIA MAIN & UNIT TRANSFORMER).

- 3) Go to Step 10.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	<p>Initiate Local Actions To Isolate RCS And To Provide Cooling To Vital Areas And Equipment</p> <ol style="list-style-type: none"> Open all Reactor Protection and Control System rack doors in the Control Room. Direct Security personnel to open the following vital area doors to increase cooling: <ul style="list-style-type: none"> Control Room Door S51 Intermediate Bldg Door S37 (AFW pump area) Intermediate Bldg Door F36 (Automatic fire door, Rod Drive MG set area) Intermediate Bldg Door S44 (Steam Header area) Dispatch AO To Locally Isolate RCP Seals and BASTs (Refer to ATT-21.0, ATTACHMENT RCS ISOLATION) Dispatch AO to align backup cooling water to TDAFW Pump (Refer to ATT-5.2, ATTACHMENT FIRE WATER COOLING TO TDAFW PUMP) 	

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Isolate Makeup And Reject From Hotwell To CST By Placing Hotwell Level Controller (LC-107) In Manual AT 50%	<p><u>IF</u> valves can <u>NOT</u> be manually closed, <u>THEN</u> dispatch AO to locally isolate makeup and reject lines.</p> <ul style="list-style-type: none"> • Makeup isolation V-4058 • Reject isolation V-4055
12	Isolate S/G: <ul style="list-style-type: none"> a. Manually close both MSIVs b. Depress MANUAL pushbuttons <u>AND</u> manually close MFW flow control valves <ul style="list-style-type: none"> • MFW regulating valves • MFW bypass valves c. Place MCB master switch for S/G blowdown and sample valves to CLOSE 	<p><u>IF</u> valves can <u>NOT</u> be manually closed, <u>THEN</u> dispatch AO to locally isolate the affected flow path.</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>A FAULTED OR RUPTURED S/G THAT IS ISOLATED SHOULD REMAIN ISOLATED. STEAM SUPPLY TO THE TDAFW PUMP MUST BE MAINTAINED FROM AT LEAST ONE S/G.</p> <p>*****</p>		
13	<p>Check If S/G Secondary Side Is Intact:</p> <ul style="list-style-type: none"> o Pressure in both S/Gs - STABLE OR INCREASING o Pressure in both S/Gs - GREATER THAN 110 PSIG 	<p>Perform the following:</p> <ul style="list-style-type: none"> a. <u>IF</u> any S/G pressure decreasing in an uncontrolled manner <u>OR</u> completely depressurized, <u>THEN</u> isolate faulted S/G unless needed for RCS cooldown: <ul style="list-style-type: none"> 1) Close faulted S/G MDAFW pump discharge valve. <ul style="list-style-type: none"> • S/G A. MOV-4007 • S/G B. MOV-4008 2) Close faulted S/G TDAFW flow control valve. <ul style="list-style-type: none"> • S/G A. AOV-4297 • S/G B. AOV-4298 3) Verify faulted S/G ARV controller in MANUAL with output at 0%. <ul style="list-style-type: none"> • S/G A. AOV-3411 • S/G B. AOV-3410 4) Pull stop faulted S/G TDAFW pump steam supply valve. <ul style="list-style-type: none"> • S/G A. MOV-3505A • S/G B. MOV-3504A <p><u>IF</u> valve(s) can <u>NOT</u> be closed manually, <u>THEN</u> dispatch AO to locally close valve(s) to isolate flow.</p> b. Dispatch AO to complete faulted S/G isolation (Refer to ATT-10.0. ATTACHMENT FAULTED S/G).

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	<p>Check If S/G Tubes Are Intact:</p> <ul style="list-style-type: none"> o Dispatch RP tech or AO to locally check steamline radiation - NORMAL 	<p>Try to identify ruptured S/G. Continue with Step 15. <u>WHEN</u> ruptured S/G identified, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> a. Isolate ruptured S/G unless needed for RCS cooldown: <ul style="list-style-type: none"> 1) Close ruptured S/G MDAFW pump discharge valve. <ul style="list-style-type: none"> • S/G A. MOV-4007 • S/G B. MOV-4008 2) Pull stop ruptured S/G MDAFW pump. 3) Close ruptured S/G TDAFW flow control valve. <ul style="list-style-type: none"> • S/G A. AOV-4297 • S/G B. AOV-4298 4) Adjust ruptured S/G ARV controller to 1050 psig in AUTO. <u>WHEN</u> S/G pressure less than 1050 psig, <u>THEN</u> ensure ruptured S/G ARV closed. <ul style="list-style-type: none"> • S/G A. AOV-3411 • S/G B. AOV-3410 5) Pull stop ruptured S/G TDAFW pump steam supply valve. <ul style="list-style-type: none"> • S/G A. MOV-3505A • S/G B. MOV-3504A <p><u>IF</u> valve(s) can <u>NOT</u> be closed manually, <u>THEN</u> dispatch AO to locally close valve(s) to isolate flow.</p> <ul style="list-style-type: none"> b. Dispatch AO to complete ruptured S/G isolation (Refer to ATT-16.0. ATTACHMENT RUPTURED S/G).

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>IF CST LEVEL DECREASES TO LESS THAN 5 FEET, THEN ALTERNATE WATER SOURCES FOR AFW PUMPS, USING FIRE OR CITY WATER, WILL BE NECESSARY (REFER TO ER-AFW.1, ALTERNATE WATER SUPPLY TO AFW PUMPS).</p> <p>*****</p> <p><u>NOTE:</u> TDAFW pump AOV flow control AOVs may drift open on loss of IA.</p>		
<p>*15 Monitor Intact S/G Levels:</p>		
a.	Narrow range level - GREATER THAN 5% [25% adverse CNMT]	a. Maintain maximum AFW flow until narrow range level greater than 5% [25% adverse CNMT] in at least one S/G.
b.	Control AFW flow by throttling TDAFW flow control valves <ul style="list-style-type: none"> • S/G A. AOV-4297 • S/G B. AOV-4298 	<p>b. Control AFW flow by throttling TDAFP discharge MOV-3996.</p> <p><u>IF</u> MOV-3996 can <u>NOT</u> be controlled, <u>THEN</u> dispatch AO to locally control AFW flow by throttling TDAFW flow control valves.</p> <ul style="list-style-type: none"> • S/G A. AOV-4297 • S/G B. AOV-4298 <p><u>IF</u> valves can <u>NOT</u> be throttled, <u>THEN</u> control AFW flow by starting and stopping TDAFW pump.</p>
c.	Control AFW flow to maintain narrow range level between 17% [25% adverse CNMT] and 50%	c. <u>IF</u> narrow range level in any intact S/G continues to increase in an uncontrolled manner, <u>THEN</u> return to Step 14.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: IF the loss of power is expected to continue beyond 4 hours, THEN degassing of main generator should commence as soon as personnel become available (Refer to ATT-8.2, ATTACHMENT GEN DEGAS).

16 Check DC Bus Loads:

- a. Place control switches for MFW pump AC oil pumps to OFF (allows timer to stop DC oil pumps)
- b. Stop all large non-essential DC loads
 - 1) Evaluate DC loads (Refer to ATT-8.0, ATTACHMENT DC LOADS).
 - 2) WHEN turbine is stopped, THEN perform the following:
 - a) Locally close Turbine backup seal oil reg outlet valve V-5475J.
 - b) Stop Turbine DC lube oil pump (within 1 hour).
- c. Check DC bus voltage - GREATER THAN 105 VOLTS DC
 - Bus A
 - Bus B
- c. IF either DC bus less than 105 volts DC, THEN refer to ER-ELEC.2, RECOVERY FROM LOSS OF A or B DC BUS.
- d. Direct electricians to locally monitor DC power supply

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17	<p>Verify Source Range Detector(s) - ENERGIZED</p> <ul style="list-style-type: none"> • N-31 • N-32 	<p>Dispatch personnel with relay rack key to turn off 125 VDC power switches in REACTOR PROTECTION racks RLTR-1 and RLTR-2 to deenergize source range block relays.</p>
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>WHEN POWER IS RESTORED TO BUS 14 AND/OR BUS 16, RECOVERY ACTIONS SHOULD CONTINUE STARTING WITH STEP 27.</p> <p>*****</p>		
18	<p>Check CST Level - GREATER THAN 5 FEET</p>	<p>Initiate makeup to CSTs using fire or city water as a source. (Refer to ER-AFW.1, ALTERNATE WATER SUPPLY TO AFW PUMPS).</p>

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>o S/G PRESSURES SHOULD BE MAINTAINED GREATER THAN 200 PSIG TO PREVENT INJECTION OF SI ACCUM NITROGEN INTO THE RCS.</p> <p>o S/G NARROW RANGE LEVEL SHOULD BE MAINTAINED GREATER THAN 5% [25% ADVERSE CNMT] IN AT LEAST ONE INTACT S/G. IF LEVEL CANNOT BE MAINTAINED, S/G DEPRESSURIZATION SHOULD BE STOPPED UNTIL LEVEL IS RESTORED IN AT LEAST ONE S/G.</p> <p>*****</p> <p><u>NOTE:</u> o The S/Gs should be depressurized at maximum rate to minimize RCS inventory loss.</p> <p>o PRZR level may be lost and reactor vessel upper head voiding may occur due to depressurization of S/Gs. Depressurization should not be stopped to prevent these occurrences.</p> <p>o S/G ARV nitrogen pressure should be monitored and nitrogen supply bottles changed as necessary.</p> <p>19 Initiate Depressurization Of Intact S/Gs To 300 PSIG:</p> <p>a. Check S/G narrow range levels - GREATER THAN 17% [25% adverse CNMT] IN AT LEAST ONE S/G</p> <p>a. Perform the following:</p> <p>1) Maintain maximum AFW flow until narrow range level greater than 17% [25% adverse CNMT] in at least one S/G.</p> <p>2) Continue with Step 20. <u>WHEN</u> narrow range level greater than 17% [25% adverse CNMT] in at least one S/G, <u>THEN</u> do Steps 19b and 20.</p> <p>b. Manually dump steam from intact S/Gs at maximum rate using S/G ARVs</p> <p>b. Locally dump steam from intact S/Gs at maximum rate using S/G ARV.</p>		

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p><u>NOTE:</u> o Adverse CNMT conditions or loss of forced air cooling may result in failure of NIS detectors.</p> <p>o <u>IF</u> Instrument Bus D deenergized, <u>THEN</u> NIS SUR meters will <u>NOT</u> be available.</p>	
*20	<p>Monitor Reactor For Subcriticality:</p>	
	<p>a. Verify Subcriticality using the following indications:</p> <ol style="list-style-type: none"> 1) Check source range(s). N-31 <u>AND</u> N-32 <ul style="list-style-type: none"> o Indicator - ON SCALE o Power - STABLE OR DECREASING 2) Check intermediate range. N-35 <ul style="list-style-type: none"> o Indicator - ON SCALE o Power - STABLE OR DECREASING 3) Check power range. N-41 and N-43 <ul style="list-style-type: none"> o Indicators - LESS THAN 5% o Power - STABLE OR DECREASING 	<p>a. <u>IF</u> unable to verify subcriticality using NIS, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> o Control S/G ARVs to stop S/G depressurization and allow RCS to heat up. o Direct RP to sample RCS and PRZR for boron concentration. o Request plant staff assistance in evaluating core reactivity status

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Depressurization of S/Gs will result in a SI actuation. SI should be reset to permit manual loading of equipment on emergency busses.

21 Check SI Signal Status:

a. Any SI annunciator - LIT

a. Go to Step 25. WHEN SI actuated, THEN do Steps 21b, 22, 23 and 24.

b. Reset SI

22 Verify CI And CVI:

a. CI and CVI annunciators - LIT

a. Depress manual CI pushbutton.

- Annunciator A-26, CNMT ISOLATION
- Annunciator A-25, CONTAINMENT VENTILATION ISOLATION

b. Verify CI and CVI valve status lights - BRIGHT

b. Manually close CI and CVI valves. IF valves can NOT be verified closed by MCB indication, THEN dispatch AO to locally close valves (Refer to ATT-3.0, ATTACHMENT CI/CVI).

c. CNMT RECIRC fan coolers SW outlet valve status lights - BRIGHT

c. Dispatch AO to locally fail open valves.

- AOV-4561
- AOV-4562

d. Verify RHR Pump Suction from CNMT Sump B valves - CLOSED

d. IF sump recirculation NOT in progress, THEN manually close valves.

- MOV-850A
- MOV-850B

IF valves can NOT be verified closed by MCB indication, THEN dispatch AO to locally close valves.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
23	Check If S/G Depressurization Should Be Stopped:	
a.	Check RCS cold leg temperatures - GREATER THAN 315°F	a. Perform the following: 1) Control S/G ARVs to stop S/G depressurization. 2) Go to Step 24.
b.	Check S/G pressures - LESS THAN 300 PSIG	b. Continue with Step 24. <u>WHEN</u> S/G pressure decreases to less than 300 psig. <u>THEN</u> do Step 23c and d.
c.	Check IA supply: o Pressure - GREATER THAN 60 PSIG o Pressure - STABLE OR INCREASING	c. Control S/G ARVs in manual to maintain S/G pressures at 300 psig <u>IF</u> manual control is <u>NOT</u> available. <u>THEN</u> locally control S/G ARVs to maintain S/G pressures at 300 psig.
d.	Control S/G ARVs to maintain S/G pressures at 300 psig IN AUTO	d. Control S/G ARVs in manual to maintain S/G pressures at 300 psig <u>IF</u> manual control is <u>NOT</u> available. <u>THEN</u> locally control S/G ARVs to maintain S/G pressures at 300 psig.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
24	<p>Check CNMT Pressure - HAS REMAINED LESS THAN 28 PSIG</p> <ul style="list-style-type: none"> o Annunciator A-27. CNMT SPRAY - EXTINGUISHED o CNMT pressure indicators - LESS THAN 28 PSIG 	<p><u>IF</u> CNMT pressure is less than 28 psi, <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> a. Reset CNMT spray. b. Place CNMT spray pump discharge valve switches to CLOSE to deenergize open contactor. <p><u>IF NOT</u>. <u>THEN</u> continue with step 25. <u>WHEN</u> CNMT pressure less than 28 psig. <u>THEN</u> reset CNMT spray and place CNMT spray pump discharge valve switches to CLOSE.</p>
25	<p>Check Core Exit T/Cs - LESS THAN 1200°F</p>	<p><u>IF</u> core exit temperatures greater than 1200°F and increasing. <u>THEN</u> go to SACRG-1. SEVERE ACCIDENT CONTROL ROOM GUIDELINE INITIAL RESPONSE. step 1.</p>
26	<p>Check If AC Emergency Power Is Restored - BUSSES 14 AND/OR 16 ENERGIZED</p>	<p>Continue to control RCS conditions and monitor plant status:</p> <ul style="list-style-type: none"> a. Check status of desired actions: <ul style="list-style-type: none"> o AC power restoration o ARV nitrogen pressure o Diesel air compressor to IA system o RCP seal isolation o DC power supply b. Return to Step 13.

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: SW isolation may occur when power is restored to AC emergency busses.

28 Verify SW System Operation:

- a. Check Bus 17 and Bus 18 - AT
LEAST ONE ENERGIZED

- b. Verify two SW pumps - RUNNING

- a. Perform the following:

- 1) Pull stop any D/G that is NOT supplied by alternate cooling. AND immediately depress associated VOLTAGE SHUTDOWN pushbutton.
- 2) Refer to ATT-2.4, ATTACHMENT NO SW PUMPS.
- 3) Go to Step 29.

- b. IF normal power available. THEN establish two SW pumps running.

IF normal power NOT available. THEN establish one SW pump running for each operating D/G.

IF NO SW pumps running. THEN perform the following:

- 1) Pull stop any D/G that is NOT supplied by alternate cooling. AND immediately depress associated VOLTAGE SHUTDOWN pushbutton.
- 2) Refer to ATT-2.4, ATTACHMENT NO SW PUMPS.

IF only one SW pump running. THEN perform the following:

- 1) Manually perform SW isolation.
- 2) Refer to AP-SW.2, LOSS OF SERVICE WATER.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>THE LOADS PLACED ON THE ENERGIZED AC EMERGENCY BUS SHOULD NOT EXCEED THE CAPACITY OF THE POWER SOURCE.</p> <p>*****</p>		
29	<p>Verify Following Equipment Loaded On Available AC Emergency Busses:</p> <ul style="list-style-type: none"> o 480 volt MCCs - ENERGIZED <ul style="list-style-type: none"> • MCC C from Bus 14 • MCC D from Bus 16 o Verify instrument busses - ENERGIZED <ul style="list-style-type: none"> • Bus A from MCC C (A battery) • Bus B from MCC C • Bus C from MCC D (B battery) o Dispatch personnel to verify proper operation of battery chargers 	<p>Manually load equipment as power supply permits.</p>

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

30 Select Recovery Procedure:

- | | |
|--|---|
| <ul style="list-style-type: none"> a. Check RCS subcooling based on core exit T/Cs - GREATER THAN 0°F USING FIG-1.0, FIGURE MIN SUBCOOLING b. Check PRZR level - GREATER THAN 5% [30% adverse CNMT] c. Check SI and RHR Pumps - NONE RUNNING d. Go to ECA-0.1, LOSS OF ALL AC POWER RECOVERY WITHOUT SI REQUIRED, Step 1 | <ul style="list-style-type: none"> a. Go to ECA-0.2, LOSS OF ALL AC POWER RECOVERY WITH SI REQUIRED, Step 1. b. Go to ECA-0.2, LOSS OF ALL AC POWER RECOVERY WITH SI REQUIRED, Step 1. c. Go to ECA-0.2, LOSS OF ALL AC POWER RECOVERY WITH SI REQUIRED, Step 1. |
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-END-

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ECA-0.0 APPENDIX LIST

TITLE

- 1) FIGURE MIN SUBCOOLING (FIG-1.0)
- 2) ATTACHMENT DC LOADS (ATT-8.0)
- 3) ATTACHMENT FAULTED S/G (ATT-10.0)
- 4) ATTACHMENT RUPTURED S/G (ATT-16.0)
- 5) ATTACHMENT CI/CVI (ATT-3.0)
- 6) ATTACHMENT NONVITAL (ATT-8.3)
- 7) ATTACHMENT GEN DEGAS (ATT-8.2)
- 8) ATTACHMENT RCS ISOLATION (ATT-21.0)
- 9) ATTACHMENT FIRE WATER COOLING TO TDAFW PUMP (ATT-5.2)
- 10) ATTACHMENT DIESEL AIR COMPRESSOR (ATT-11.2)
- 11) ATTACHMENT NO SW PUMPS (ATT-2.4)
- 12) FOLDOUT

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FOLDOUT PAGE

1. LOSS OF SW CRITERIA

IF no SW pumps are available, THEN perform the following:

- a. Pull stop any D/G that is NOT supplied by alternate cooling, AND immediately depress associated VOLTAGE SHUTDOWN pushbutton.
- b. Refer to ATT-2.4, ATTACHMENT NO SW PUMPS.