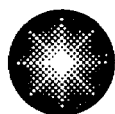


1503 Lake Road
Ontario, New York 14519-9364
585.771.3000



Constellation Energy

R.E. Ginna Nuclear Power Plant, LLC

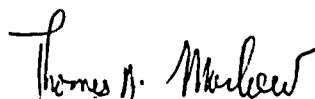
April 28, 2005

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,


Thomas A. Marlow

TAM/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-CCW.2, Rev 20
AP-CCW.3, Rev 17
AP-RCC.3, Rev 7

A002

NPSP0200
E66429

Ginna Nuclear Power Plant
PROCEDURE INDEX

Thu 4/28/2005 11:16:24 am
Page 1 of 2

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 | 017 | 06/30/2004 | 06/26/2002 | 06/26/2007 | EF |
| AP-CCW.2 | LOSS OF CCW DURING POWER OPERATION | 020 | 04/28/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-CCW.3 | LOSS OF CCW - PLANT SHUTDOWN | 017 | 04/28/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-CR.1 | CONTROL ROOM INACCESSIBILITY | 021 | 04/26/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-CVCS.1 | CVCS LEAK | 014 | 06/30/2004 | 06/03/2002 | 06/03/2007 | EF |
| AP-CVCS.3 | LOSS OF ALL CHARGING FLOW | 005 | 04/10/2005 | 02/27/2004 | 02/27/2009 | EF |
| AP-CW.1 | LOSS OF A CIRC WATER PUMP | 012 | 09/17/2004 | 04/16/2003 | 04/16/2008 | EF |
| AP-ELEC.1 | LOSS OF 12A AND/OR 12B BUSES | 028 | 01/21/2005 | 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) | 013 | 01/21/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-ELEC.13/15 | LOSS OF BUS 13/15 | 001 | 06/30/2004 | 09/24/2003 | 09/24/2008 | EF |
| AP-ELEC.14/16 | LOSS OF SAFEGUARDS BUS 14/16 | 009 | 01/21/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-ELEC.17/18 | LOSS OF SAFEGUARDS BUS 17/18 | 008 | 01/21/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-FW.1 | ABNORMAL MAIN FEEDWATER FLOW | 016 | 06/30/2004 | 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 | 015 | 06/30/2004 | 06/26/2002 | 06/26/2007 | EF |
| AP-RCC.1 | CONTINUOUS CONTROL ROD WITHDRAWAL/INSERTION | 009 | 06/30/2004 | 04/16/2003 | 04/16/2008 | EF |
| AP-RCC.2 | RCC/RPI MALFUNCTION | 012 | 04/10/2005 | 2/20/51/2 | 01/22/2007 | EF |
| AP-RCC.3 | DROPPED ROD RECOVERY | 007 | 04/28/2005 | 02/25/2003 | 02/25/2008 | EF |
| AP-RCP.1 | RCP SEAL MALFUNCTION | 017 | 06/30/2004 | 04/24/2003 | 04/24/2008 | EF |
| AP-RCS.1 | REACTOR COOLANT LEAK | 017 | 06/30/2004 | 04/16/2003 | 04/16/2008 | EF |
| AP-RCS.2 | LOSS OF REACTOR COOLANT FLOW | 012 | 06/30/2004 | 04/16/2003 | 04/16/2008 | EF |
| AP-RCS.3 | HIGH REACTOR COOLANT ACTIVITY | 011 | 06/30/2004 | 04/01/2002 | 01/22/2007 | EF |
| AP-RCS.4 | SHUTDOWN LOCA | 017 | 03/18/2005 | 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 | 015 | 04/05/2005 | 04/30/2003 | 04/30/2008 | EF |
| AP-SG.1 | STEAM GENERATOR TUBE LEAK | 004 | 04/10/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-SW.1 | SERVICE WATER LEAK | 021 | 09/17/2004 | 04/21/2003 | 04/21/2008 | EF |
| AP-SW.2 | LOSS OF SERVICE WATER | 007 | 01/21/2005 | 1/20/50/3 | 10/31/2006 | EF |
| AP-TURB.1 | TURBINE TRIP WITHOUT RX TRIP REQUIRED | 014 | 04/10/2005 | 06/26/2002 | 06/26/2007 | EF |

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NPSP0200
E66429

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 | 021 | 04/10/2005 | 06/26/2002 | 06/26/2007 | EF |
| AP-TURB.3 | TURBINE VIBRATION | 012 | 06/30/2004 | 06/26/2002 | 06/26/2007 | EF |
| AP-TURB.4 | LOSS OF CONDENSER VACUUM | 018 | 04/10/2005 | 04/30/2003 | 04/30/2008 | EF |
| AP-TURB.5 | RAPID LOAD REDUCTION | 008 | 04/10/2005 | 06/26/2002 | 06/26/2007 | EF |

PRAP TOTAL: 34

GRAND TOTAL: 34

| | | |
|------------------|--|-------------------------|
| EOP: AP-CCW.2 | TITLE: LOSS OF CCW DURING POWER OPERATION | REV: 20 PAGE 1 of 10 |
|------------------|--|-------------------------|

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

4-28-2005

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

| | | |
|------------------|--|-------------------------|
| EOP: AP-CCW.2 | TITLE: LOSS OF CCW DURING POWER OPERATION | REV: 20 PAGE 2 of 10 |
|------------------|--|-------------------------|

A. PURPOSE - This procedure provides the steps necessary to respond to a loss of CCW while the plant is at power.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from:

a. AP-CCW.1, LEAKAGE INTO THE COMPONENT COOLING SYSTEM, when CCW surge tank level decrease indicated at power.

2. SYMPTOMS - The symptoms of LOSS OF CCW DURING POWER OPERATION are;

a. Annunciator A-6, CONT SPRAY PUMP COOLING WATER OUT LOW FLOW 15 GPM, lit or

b. Annunciator A-7 (A-15), RCP A (B) CCW RETURN HI TEMP OR LO FLOW 165 GPM 125° F, lit or

c. Annunciator A-9, RHR PUMP COOLING WATER OUTLET LO FLOW 15 GPM, lit or

d. Annunciator A-12, NON-REGEN HX LETDOWN OUT HI TEMP 145° F lit or,

e. Annunciator A-13, CCW SURGE TANK LO LEVEL 41.2%, lit, or

f. Annunciator A-14, SAFETY INJ PUMPS COOLING WATER OUT LO FLOW 25 GPM, lit or

g. Annunciator A-17, MOTOR OFF RCP CCWP, lit, or

h. Annunciator A-18, VCT HI TEMP 145°, lit or

i. Annunciator A-21, COMP COOLING HX OUT HI TEMP 100° F, lit or,

j. Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSI, lit, or

k. Annunciator A-24 (A-32), RCP A (B) OIL LEVEL + 1.25, lit or,

l. Annunciator B-21, RCP TEMP RECORDER, lit.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

- o 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.
- o IF CCW IS LOST, THEN SEAL INJECTION SHOULD BE MAINTAINED TO THE RCP(S) UNTIL RCS TEMPERATURE IS LESS THAN 150°F, OR UNTIL CCW IS RESTORED.

1 Check CCW Pump Status:

Perform the following:

- o Both CCW pump breaker white lights - EXTINGUISHED
- o Annunciator A-17, MOTOR OFF RCP CCWP - EXTINGUISHED

a. Ensure standby CCW pump running.

IF no CCW pump can be operated, THEN perform the following:

- 1) Trip the reactor.
- 2) WHEN all E-0 Immediate Actions done, THEN trip BOTH RCPs.
- 3) Close letdown isol, AOV-427.
- 4) Close excess letdown, HCV-123.
- 5) Go to E-0, REACTOR TRIP OR SAFETY INJECTION.

b. IF annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSI, lit, THEN check closed CCW to RHR HXs (MOV-738A and MOV-738B).

| | | |
|------------------|--|-------------------------|
| EOP: AP-CCW.2 | TITLE: LOSS OF CCW DURING POWER OPERATION | REV: 20 PAGE 4 of 10 |
|------------------|--|-------------------------|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: MCB CCW surge tank level indication should be verified locally in the AUX BLDG, if possible.

* 2 Monitor CCW Surge Tank Level
- APPROXIMATELY 50% AND STABLE

Perform the following:

- a. Open RMW to CCW surge tank. MOV-823.
- b. Start RMW pump(s).
- c. IF surge tank level stable or increasing, THEN control level at approximately 50% while continuing with Step 3.

IF CCW surge tank level can NOT be maintained greater than 10%, THEN perform the following:

- 1) Close letdown isol, AOV-427.
- 2) Close excess letdown, HCV-123.
- 3) Trip the reactor.
- 4) WHEN all E-0 Immediate Actions done, THEN trip BOTH RCPs.
- 5) Place both CCW pumps in pull stop.
- 6) Go to E-0, REACTOR TRIP OR SAFETY INJECTION.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

3 Check CCW To Both RCPs:

- o Annunciator A-7 (A-15), RCP 1A (1B) CCW return Hi temp or low flow 165 gpm 125°F alarm - EXTINGUISHED
- o RCP motor bearings temperature (PPCS Group Display-RCPS OR RCP temperature monitor RK-30A recorder) - $\leq 200^{\circ}\text{F}$

IF CCW lost to RCP(s), THEN perform the following:

- a. Trip the reactor.
- b. WHEN all E-0 Immediate Actions done, THEN trip affected RCP(s).
- c. Go to E-0. REACTOR TRIP OR SAFETY INJECTION.

* 4 Monitor If Letdown Should Be Isolated:

- a. Check annunciator A-12, Non-Regen Hx Letdown Out Hi Temp 145° - EXTINGUISHED

a. Isolate Normal Letdown:

- 1) Close letdown isolation, AOV-427.
- 2) Close letdown orifice valves (AOV-200A, AOV-200B, and AOV-202).
- 3) Close letdown isolation, AOV-371.
- 4) Close charging flow control valve, HCV-142 WHILE adjusting charging pump speed to maintain:
 - RCP labyrinth seal D/P between 15 inches and 80 inches
 - PRZR level at program

- b. Check excess letdown temperature - LESS THAN 195°F

b. Isolate Excess Letdown:

- 1) Close excess letdown flow control valve, HCV-123.
- 2) Close excess letdown isolation valve, AOV-310.

EOP:
AP-CCW.2

TITLE:
LOSS OF CCW DURING POWER OPERATION

REV: 20
PAGE 6 of 10

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

5 Check CCW Valve Alignment -
NORMAL

- a. Check MCB CCW valves (Refer to ATT-1.0, ATTACHMENT AT POWER CCW ALIGNMENT)
- b. Direct AO to check local flow indications per ATT-1.1, ATTACHMENT NORMAL CCW FLOW

a. Align CCW valves as necessary.

NOTE: o IF Seal Water Hx will be bypassed, THEN an increase in VCT temperature is expected.

o IF Seal Water Hx will be isolated, THEN seal return and excess letdown (if in service) will be to the PRT through RV-314.

6 Locally Check Seal Water Hx
CCW Outlet Flow - NORMAL
(FI-605)

IF VCT level increasing AND FI-605 abnormally low, THEN bypass and isolate Seal Water Hx and, if desired, isolate Seal Return.

a. To bypass and isolate Hx perform the following:

- 1) Open seal bypass V-394
- 2) Close seal inlet V-265
- 3) Close seal outlet V-321
- 4) Close CCW inlet V-763
- 5) Close CCW outlet V-767

b. IF desired to isolate seal return line, THEN close MOV-313.

c. Notify RP to sample RCS for chromates.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Operation may continue with the reactor support coolers isolated. If this occurs, notify higher supervision.

7 Check For CCW Leakage In CNMT:

a. Check CNMT sump A level:

- o Level - STABLE
- o Sump A pumps - OFF

b. RCP oil levels - STABLE

a. IF abnormal increase in CNMT sump level, THEN perform the following:

- 1) Direct RP Tech to sample sump A for chromates.
- 2) Prepare to make CNMT entry to check for CCW leak.

b. IF any RCP oil level increasing uncontrollably, THEN perform the following:

- 1) Trip the reactor.
- 2) WHEN all E-0 Immediate Actions done, THEN trip affected RCP(s).
- 3) Close CCW supply and return for affected RCP(s).
 - RCP A, MOV-749A and MOV-759A
 - RCP B, MOV-749B and MOV-759B
- 4) Go to E-0, REACTOR TRIP OR SAFETY INJECTION.

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| 8 | <p>Check for CCW Leakage In AUX BLDG:</p> <ul style="list-style-type: none"> o Start frequency of AUX BLDG sump pump(s) - NORMAL (Refer to RCS daily leakage log) o Waste holdup tank level - STABLE OR INCREASING AS EXPECTED | <p>Dispatch AO to investigate AUX BLDG for CCW leakage.</p> |
| 9 | <p>Verify CCW System Leak - IDENTIFIED</p> <ul style="list-style-type: none"> a. Leak identified b. Isolate leak if possible c. Refer to IP-ENV-3, RESPONSE TO A SPILL OF HAZARDOUS MATERIAL/WASTE | <p>a. Perform the following:</p> <ul style="list-style-type: none"> 1) Direct RP Tech to sample CCW HX SW outlet for chromates. 2) Return to Step 2. |
| 10 | <p>Check Normal Or Excess Letdown - IN SERVICE</p> | <p><u>IF</u> normal letdown desired, <u>THEN</u> establish normal letdown (refer to ATT-9.0, ATTACHMENT LETDOWN).</p> <p><u>IF</u> normal letdown <u>NOT</u> available, <u>THEN</u> establish excess letdown if desired. (Refer to ATT-9.1, ATTACHMENT EXCESS L/D)</p> |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--------------------------|-----------------------|
|------|--------------------------|-----------------------|

11 Check CCW System Leak Isolated

- a. Surge tank level - APPROXIMATELY 50%
- b. Surge tank level - STABLE

- a. IF level less than 50%, THEN continue filling.

IF \geq 50%, THEN perform the following:
 - 1) Stop RMW pump(s).
 - 2) Close MOV-823.
- b. Return to Step 2.

12 Direct RP To Sample CCW System For Chromates

13 Evaluate MCB Annunciator Status (Refer to AR Procedures)

14 Evaluate Plant Conditions:

- a. CCW system malfunction - IDENTIFIED AND CORRECTED
- b. CCW system status adequate for power operation (Refer to ITS Section 3.7.7).

- a. Return to Step 1.
- b. IF shutdown required, THEN refer to O-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN.

| | | |
|------------------|--|--------------------------|
| EOP: AP-CCW.2 | TITLE: LOSS OF CCW DURING POWER OPERATION | REV: 20 PAGE 10 of 10 |
|------------------|--|--------------------------|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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

15 Notify Higher Supervision

16 Return To Procedure Or
Guidance In Effect

-END-

| | | |
|------------------|--|------------------------|
| EOP: AP-CCW.2 | TITLE: LOSS OF CCW DURING POWER OPERATION | REV: 20 PAGE 1 of 1 |
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AP-CCW.2 APPENDIX LIST

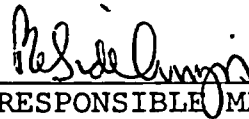
TITLE

- 1) ATTACHMENT AT POWER CCW ALIGNMENT (ATT-1.0)
- 2) ATTACHMENT EXCESS L/D (ATT-9.1)
- 3) ATTACHMENT NORMAL CCW FLOW (ATT-1.1)
- 4) ATTACHMENT LETDOWN (ATT-9.0)

| | | |
|------------------|--|-------------------------|
| EOP: AP-CCW.3 | TITLE: LOSS OF CCW - PLANT SHUTDOWN | REV: 17 PAGE 1 of 12 |
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GINNA STATION

CONTROLLED COPY NUMBER 23


RESPONSIBLE MANAGER

4-28-2005
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

| | | |
|------------------|--|-------------------------|
| EOP: AP-CCW.3 | TITLE: LOSS OF CCW - PLANT SHUTDOWN | REV: 17 PAGE 2 of 12 |
|------------------|--|-------------------------|

A. PURPOSE - This procedure provides the steps necessary to respond to a loss of CCW while the plant is shut down.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure is entered from:

- a. AP-CCW.1, LEAKAGE INTO THE COMPONENT COOLING LOOP, or
- b. AP-ELEC.3, LOSS OF 12A AND/OR 12B TRANSFORMER (BELOW 350° F), or
- c. AP-RHR.1, LOSS OF RHR, or
- d. AP-RHR.2, LOSS OF RHR WHILE OPERATING AT REDUCED RCS INVENTORY CONDITIONS, when CCW malfunction indicated.

2. SYMPTOMS - The symptoms of LOSS OF CCW - PLANT SHUTDOWN are:

- a. Annunciator A-6, CONT SPRAY PUMP COOLING WATER OUT LO FLOW 15 GPM, lit, or
- b. Annunciator A-7, (A-15), RCP A (B) CCW RETURN HI TEMP OR LO FLOW 165 GPM 125° F, lit, or
- c. Annunciator A-9, RHR PUMP COOLING WATER OUTLET LO FLOW 15 GPM, lit, or
- d. Annunciator A-12, NON-REGEN HX LETDOWN OUT HI TEMP 145° F lit, or
- e. Annunciator A-13, CCW SURGE TANK LO LEVEL 41.2%, lit, or
- f. Annunciator A-14, SAFETY INJ PUMPS COOLING WATER OUT LO FLOW 25 GPM, lit, or
- g. Annunciator A-17, MOTOR OFF RCP CCWP, lit, or
- h. Annunciator A-18, VCT Hi Temp 145° F, lit or
- i. Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSI, lit, or
- j. Annunciator A-24, (A-32), RCP A (B) OIL LEVEL +/- 1.25, lit, or
- k. Annunciator A-31, CCW SYSTEM LO FLOW 1800 GPM, lit or
- l. Annunciator B-21, RCP TEMP RECORDER, lit.

| | | |
|------|--------------------------|-----------------------|
| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--------------------------|-----------------------|

CAUTION

- o 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.
- o IF CCW IS LOST, THEN SEAL INJECTION SHOULD BE MAINTAINED TO THE RCP(S) UNTIL RCS TEMPERATURE IS LESS THAN 150°F, OR UNTIL CCW IS RESTORED.

NOTE: IF CCW is lost to operating CS, RHR, or SI pumps, they may be left running for brief periods while isolating a CCW leak.

1 Check CCW Pump Status:

- o Both CCW pump breaker white lights - EXTINGUISHED
- o Annunciator A-17, MOTOR OFF, RCP CCWP - EXTINGUISHED

IF a CCW pump has tripped, THEN perform the following:

- a. Ensure standby CCW pump running.
- b. Attempt to reset and start the affected CCW pump if required for cooling.
- c. IF no CCW pumps available, THEN trip BOTH RCPs.

NOTE: MCB surge tank level indication should be verified locally in the Aux Bldg, if possible.

2 Check CCW Surge Tank Level - APPROXIMATELY 50% AND STABLE

IF CCW surge tank level is decreasing, THEN perform the following:

- a. Open RMW to CCW surge tank, MOV-823.
- b. Start RMW pump(s).
- c. Dispatch AO to AUX BLDG to investigate for CCW leak
- d. Control CCW surge tank level at approximately 50% while continuing with Step 3.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

3 Check CCW Cooling To RCPs:

a. RCPs - BOTH RUNNING

b. Check RCP indications:

- o Annunciator A-7 (A-15), RCP A (B) CCW RETURN HI TEMP OR LOW FLOW 165 GPM 125°F - EXTINGUISHED
- o Verify RCP motor bearing temperatures (PPCS Group Display - RCPS or RK-30A recorder) - LESS THAN 200°F

a. Perform the following:

- 1) Verify SDM requirements met. (Refer to 0-3.1, BORON CONCENTRATION FOR THE XENON FREE ALL RODS IN - MOST REACTIVE ROD STUCK OUT SHUTDOWN MARGIN)
- 2) IF no RCPs running, THEN verify natural circulation (refer to ATT-13.0, ATTACHMENT NC) AND go to Step 4.

b. IF CCW lost to RCP(s), THEN perform the following:

- 1) Stop the affected RCP(s).
- 2) IF no RCPs running, THEN verify natural circulation (Refer to ATT-13.0, ATTACHMENT NC).
- 3) Verify SDM requirements met. (Refer to 0-3.1, BORON CONCENTRATION FOR THE XENON FREE ALL RODS IN - MOST REACTIVE ROD STUCK OUT SHUTDOWN MARGIN)

EOP:
AP-CCW.3

TITLE:
LOSS OF CCW - PLANT SHUTDOWN

REV: 17
PAGE 5 of 12

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

* 4 Monitor If Letdown Should Be Isolated:

a. Check annunciator A-12,
Non-Regen Hx Letdown Out Hi Temp
145° - EXTINGUISHED

a. Isolate Normal Letdown:

- 1) Close letdown isolation, AOV-427.
- 2) Close letdown orifice valves (AOV-200A, AOV-200B, and AOV-202).
- 3) Close letdown isolation, AOV-371.
- 4) IF PRZR solid, THEN perform the following:
 - a) Stop all charging pumps.
 - b) IF CCW lost to RCP thermal barrier Hx, THEN close seal injection V-300A and V-300B.
 - c) Start and stop charging pump to maintain RCS at desired pressure.
 - d) Go to Step 4b.
- 5) Close charging flow control valve, HCV-142, WHILE adjusting charging pump speed to control:
 - o RCP labyrinth seal D/P between 15 inches and 80 inches
 - o PRZR level at desired level
- 6) Establish excess letdown, if desired (Refer to ATT-9.1, ATTACHMENT EXCESS L/D).

b. Check excess letdown temperature
- LESS THAN 195°F.

b. Isolate Excess Letdown:

- 1) Close excess letdown flow control valve, HCV-123.
- 2) Close excess letdown isolation valve, AOV-310.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

5 Check CCW Pump Discharge Pressure

- a. At least one CCW pump - RUNNING
- b. Verify Annunciator A-22, CCW PUMP DISCHARGE LO PRESS 60 PSIG - EXTINGUISHED

- a. Go to Step 6.
- b. Dispatch AO to the AUX BLDG to perform the following:
 - 1) Throttle CCW to RHR Hxs as necessary to restore CCW pump discharge pressure.
 - MOV-738A
 - MOV-738B
 - 2) Investigate for CCW leaks.

6 Check RCS Temperature - STABLE OR DECREASING

IF RHR cooling available, THEN adjust RHR cooling to stabilize RCS temperature AND go to Step 7.

IF S/G cooling available, THEN control S/G ARVs to stabilize RCS temperature. IF S/G ARVs do NOT provide adequate cooling, THEN perform the following:

- a. Stop all but one RCP.
- b. Initiate S/G blowdown from both S/Gs. (Refer to T-14 series)
- c. Maintain both S/G levels stable by controlling AFW flow.

EOP:

AP-CCW.3

TITLE:

LOSS OF CCW - PLANT SHUTDOWN

REV: 17

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

* 7 Monitor CCW Surge Tank Level
- GREATER THAN 10%

Perform the following:

- a. Stop any running RCP.
- b. Close letdown isolation, AOV-427.
- c. IF RHR pump(s) running in shutdown cooling mode, THEN stop both RHR pumps AND refer to AP-RHR.1. LOSS OF RHR or AP-RHR.2. LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS.
- d. Pull stop both CCW pumps.
- e. Verify natural circulation (Refer to ATT-13.0. ATTACHMENT NC).

8 Check CCW System Leakage -
ANY LEAKAGE INDICATED

Go to Step 13.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- NOTE:
- o IF Seal Water Hx will be bypassed, THEN an increase in VCT temperature is expected.
 - o IF Seal Water Hx will be isolated, THEN seal return will be to the PRT through RV-314.

9 Locally Check Seal Water Hx
CCW Outlet Flow - NORMAL
(FI-605)

IF VCT level increasing AND FI-605 abnormally low, THEN bypass and isolate Seal Water Hx and, if desired, isolate Seal Return as follows.

- a. To bypass and isolate Hx perform the following:
 - 1) Open seal bypass V-394
 - 2) Close seal inlet V-265
 - 3) Close seal outlet V-321
 - 4) Close CCW inlet V-763
 - 5) Close CCW outlet V-767
- b. If desired to isolate seal return line close MOV-313.
- c. Notify RP to sample RCS for chromates.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

10 Check For CCW Leakage In CNMT:

a. Check CNMT sump A level:

- o Level - STABLE
- o Sump A pumps - OFF

b. RCP oil levels - STABLE

a. IF abnormal increase in CNMT sump level. THEN perform the following:

- 1) Direct RP Tech to sample sump A for chromates.
- 2) Prepare to make CNMT entry to check for CCW leak.

b. IF any RCP oil level increasing uncontrollably. THEN perform the following:

- 1) Stop affected RCP.
- 2) Close CCW supply and return for affected RCP(s).
 - RCP A, MOV-749A and MOV-759A
 - RCP B, MOV-749B and MOV-759B
- 3) IF no RCPs running. THEN verify natural circulation (Refer to ATT-13.0, ATTACHMENT NC).
- 4) Verify SDM requirements met. (Refer to O-3.1, BORON CONCENTRATION FOR THE XENON FREE ALL RODS IN - MOST REACTIVE ROD STUCK OUT SHUTDOWN MARGIN)

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| 11 | <p>Check for CCW Leakage In AUX BLDG:</p> <ul style="list-style-type: none"> o Start frequency of AUX BLDG sump pump(s) - NORMAL (Refer to RCS daily leakage log) o Waste holdup tank level - STABLE OR INCREASING AS EXPECTED | <p>Dispatch AO to investigate AUX BLDG for CCW leakage.</p> |
| 12 | <p>Verify CCW System Leak - IDENTIFIED</p> <ul style="list-style-type: none"> a. Leak identified b. Isolate leak if possible c. Refer to IP-ENV-3. RESPONSE TO A SPILL OF HAZARDOUS MATERIAL/WASTE | <p>a. Perform the following:</p> <ul style="list-style-type: none"> 1) Direct RP Tech to sample CCW HX SW outlet for chromates. 2) Return to Step 2. |
| 13 | <p>Check CCW Valve Alignment And Flow Rates - AS REQUIRED FOR PLANT CONDITIONS (Refer to ATT-1.1, ATTACHMENT NORMAL CCW FLOW)</p> | <p>Realign valves to restore CCW to individual components.</p> |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

14 Evaluate Plant Conditions:

- a. RHR normal cooling - IN SERVICE
- b. Check RCS Cooling:
 - o RCS temperature - STABLE OR DECREASING
 - o CCW system status - ADEQUATE FOR RHR NORMAL COOLING

- a. Adjust S/G ARVs to stabilize RCS temperature and go to Step 15.
- b. Perform the following:
 - 1) Increase SW from CCW Hx
 - CCW Hx A, V-4619
 - CCW Hx B, V-4620
 - 2) Adjust CCW to RHR Hxs, MOV-738A and MOV-738B to maintain RCS temperature stable or decreasing.
 - 3) IF > 4900 gpm CCW flow required for desired RHR cooling (FI-619), THEN notify the Shift Supervisor.
 - 4) IF CCW inadequate for RHR normal cooling, THEN go to AP-RHR.1, LOSS OF RHR OR AP-RHR.2, LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS.

15 Evaluate MCB Annunciator Status (Refer to AR Procedures)

| | | |
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| EOP: AP-CCW.3 | TITLE: LOSS OF CCW - PLANT SHUTDOWN | REV: 17 PAGE 12 of 12 |
|------------------|--|--------------------------|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

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

16 Notify Higher Supervision

17 Return To Procedure Or Guidance In Effect

-END-

| | | |
|------------------|--|------------------------|
| EOP: AP-CCW.3 | TITLE: LOSS OF CCW - PLANT SHUTDOWN | REV: 17 PAGE 1 of 1 |
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AP-CCW.3 APPENDIX LIST

TITLE

- 1) ATTACHMENT NC (ATT-13.0)
- 2) ATTACHMENT EXCESS L/D (ATT-9.1)
- 3) ATTACHMENT NORMAL CCW FLOW (ATT-1.1)

| | | |
|------------------|--------------------------------|-----------------------|
| EOP: AP-RCC.3 | TITLE: DROPPED ROD RECOVERY | REV: 7 PAGE 1 of 9 |
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GINNA STATION

CONTROLLED COPY NUMBER 23

Bill King
RESPONSIBLE MANAGER

4-28-2005
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

| | | |
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| EOP: AP-RCC.3 | TITLE: DROPPED ROD RECOVERY | REV: 7 PAGE 2 of 9 |
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A. PURPOSE - This procedure provides the guidance necessary to control the plant during a transient resulting from a dropped control rod.

B. ENTRY CONDITIONS/SYMPTOMS

1. SYMPTOMS - The symptoms of DROPPED CONTROL ROD are;

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

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

c. MRPI indicates control rod(s) on bottom.

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--------------------------|-----------------------|
|------|--------------------------|-----------------------|

NOTE: A NIS or MRPI dropped rod signal will block AUTO out rod motion.

1 Verify Only One Rod Has Dropped

IF 2 or more rods dropped, THEN trip the reactor AND go to E-0, REACTOR TRIP OR SAFETY INJECTION.

2 Place Rods To MANUAL

CAUTION

BANK ROD WITHDRAWAL SHOULD NOT BE PERFORMED UNTIL THE DROPPED ROD IS RECOVERED.

3 Check Tav_g - STABLE AT PROGRAM

Perform the following:

- a. Place EH control in MANUAL.
- b. Manually adjust turbine load to match Tav_g and Tref.

4 Verify Annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED

Verify steam dump valves closed. IF NOT, THEN place STEAM DUMP MODE SELECTOR switch to MANUAL and close valves.

5 Check Main Generator Load - GREATER THAN 15 MW

IF load can NOT be stabilized above 15 MW, THEN trip the turbine and go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: With PRZR pressure controller 431K in manual, PORV-431C will not operate in the automatic mode. (Refer to TR 3.4.3)

6 Establish Stable Plant Conditions:

a. Tavg - TRENDING TO TREF

a. If Tavg greater than Tref, THEN restore Tavg to Tref by one or more of the following:

- Insert control rods
- Boration

IF Tavg less than Tref, THEN restore Tavg to Tref by one or more of the following:

- Reduce turbine load
- Dilution of RCS

b. PRZR pressure - TRENDING TO 2235 PSIG IN AUTO

b. Control PRZR pressure by one of the following:

- 431K in MANUAL
- Manual control of PRZR heaters and spray

IF pressure can NOT be controlled manually, THEN refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.

c. PRZR level - TRENDING TO PROGRAM IN AUTO CONTROL

c. Perform the following:

- 1) Place affected charging pumps in MANUAL
- 2) Adjust charging pump speed to restore PRZR level to program

IF PRZR level can NOT be controlled manually, THEN refer to AP-RCS.1, REACTOR COOLANT LEAK.

d. MFW Regulating Valves - RESTORING S/G LEVEL TO 52% IN AUTO

d. Perform the following:

- 1) Place affected S/G(s) MFW regulating valve in MANUAL
- 2) Restore S/G level to 52%

IF S/G can NOT be controlled manually, THEN refer to AP-FW.1, ABNORMAL MAIN FEEDWATER FLOW.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

7 Check QPTR - LESS THAN 1.02

Refer to ITS section 3.2.4.

| | | |
|------|--------------------------|-----------------------|
| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--------------------------|-----------------------|

8 Evaluate Control Rod Operability:

- a. Verify MRPI indicates rod on bottom

- b. Direct I&C to locally investigate rod failure
- c. Refer to ER-RCC.1, RETRIEVAL OF A DROPPED RCC
- d. Rod failure identified and corrected - DROPPED ROD REPAIRED

- e. Retrieve dropped rod (Refer to ER-RCC.1, RETRIEVAL OF A DROPPED ROD)
- f. Perform PT-1 for the affected bank

- a. Perform the following:
 - 1) Verify all NIS power range channels approximately equal. IF a NIS PR channel malfunction is indicated, THEN defeat failed channel (Refer to ER-NIS.3, PR MALFUNCTION).
 - 2) IF RCS temperature and NIS power range response indicates potential dropped rodlets or RCCA spider disengagement, THEN request Reactor Engineer perform a flux map.
 - 3) Go to Step 9.

- d. Perform the following:
 - 1) Consult Reactor Engineer and ITS section 3.1.4 for operational concerns.
 - 2) IF the dropped rod can NOT be repaired, THEN go to ER-RCC.1, RETRIEVAL OF A DROPPED RCC.
 - 3) Return to step 3.

EOP:

AP-RCC.3

TITLE:

DROPPED ROD RECOVERY

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

9 Check Reactor Conditions:

a. Rod insertion limit alarms -
EXTINGUISHED

b. NIS PR ΔI - WITHIN $\pm 5\%$ OF
TARGET VALUE

a. Borate as necessary and withdraw control rods to clear insertion limit alarms (refer to affected rod bank alarm response procedures if necessary).

b. Perform one or more of the following to restore ΔI to within limits.

- Borate RCS
- Dilute RCS
- Restore control rods to desired position

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| 10 | Establish Control Systems In Auto | |
| a. | Verify 431K in AUTO | a. Place 431K in AUTO, if desired. |
| b. | Verify PRZR spray valves in AUTO | b. Place PRZR spray valves in AUTO, if desired. |
| c. | Verify PRZR heaters restored: | c. Restore PRZR heaters, if desired. |
| | o PRZR proportional heaters breaker - CLOSED | |
| | o PRZR backup heaters breaker - RESET, IN AUTO | |
| d. | Verify one charging pump in AUTO | d. Place one charging pump in AUTO, if desired. |
| e. | Verify MFW regulating valves in AUTO | e. Place MFW regulating valves in AUTO, if desired. |
| f. | Restore EH controls | |
| | 1) Place in OP PAN, IMP OUT | |
| | 2) Place load rate thumbwheel to 10%/hr | |
| | 3) Match setter and reference | |
| g. | Verify annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED | g. <u>WHEN</u> Tavg within 5°F of Tref, <u>THEN</u> perform the following: |
| | | 1) Ensure steam dump valves closed. |
| | | 2) Reset steam dump. |
| h. | Verify rods in AUTO | h. Place rods in AUTO, if desired. |

| | | |
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| EOP: AP-RCC.3 | TITLE: DROPPED ROD RECOVERY | REV: 7 PAGE 9 of 9 |
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

11 Evaluate MCB Annunciator
Status (Refer to AR
Procedures)

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

12 Notify Higher Supervision

13 Return To Procedure Or
Guidance In Effect

-END-

| | | |
|------------------|--------------------------------|-----------------------|
| EOP: AP-RCC.3 | TITLE: DROPPED ROD RECOVERY | REV: 7 PAGE 1 of 1 |
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AP-RCC.3 APPENDIX PAGE

TITLE

- 1) ATTACHMENT EXCESS L/D (ATT-9.1)