



A Subsidiary of RGS Energy Group, Inc.

ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001 • 716-771-3250

www.rge.com

JOSEPH A. WIDAY
VICE PRESIDENT & PLANT MANAGER
GINNA STATION

December 19, 2002

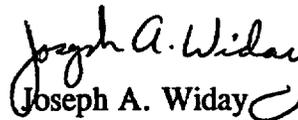
U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Robert Clark
Project Directorate I
Washington, D.C. 20555

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

Dear Mr. Clark:

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):

ES Index
ES-1.3, Rev 35

A045

PARAMETERS: DOC TYPES - PRER PRES PRPT STATUS: EF QU 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
ES-0.0	REDIAGNOSIS	010	05/01/98	05/01/98	05/01/03	EF
ES-0.1	REACTOR TRIP RESPONSE	020	07/25/02	05/01/98	05/01/03	EF
ES-0.2	NATURAL CIRCULATION COOLDOWN	012	05/01/98	05/01/98	05/01/03	EF
ES-0.3	NATURAL CIRCULATION COOLDOWN WITH STEAM VOID IN VESSEL	008	05/01/98	05/01/98	05/01/03	EF
ES-1.1	SI TERMINATION	023	08/13/02	05/01/98	05/01/03	EF
ES-1.2	POST LOCA COOLDOWN AND DEPRESSURIZATION	024	07/25/02	05/01/98	05/01/03	EF
ES-1.3	TRANSFER TO COLD LEG RECIRCULATION	035	12/19/02	05/01/98	05/01/03	EF
ES-3.1	POST-SGTR COOLDOWN USING BACKFILL	014	07/25/02	05/01/98	05/01/03	EF
ES-3.2	POST-SGTR COOLDOWN USING BLOWDOWN	015	07/25/02	05/01/98	05/01/03	EF
ES-3.3	POST-SGTR COOLDOWN USING STEAM DUMP	015	07/25/02	05/01/98	05/01/03	EF

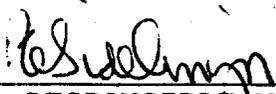
TOTAL FOR PRES 10

EOP: ES-1.3	TITLE: TRANSFER TO COLD LEG RECIRCULATION	REV: 35 PAGE 1 of 22
----------------	--	-------------------------

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23



RESPONSIBLE MANAGER

12-19-2002

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

EOP: ES-1.3	TITLE: TRANSFER TO COLD LEG RECIRCULATION	REV: 35 PAGE 2 of 22
----------------	--	-------------------------

A. PURPOSE - This procedure provides the necessary instructions for transferring the Safety Injection system and Containment Spray system to recirculation modes of operation.

B. ENTRY CONDITIONS/SYMPTOMS

1. ENTRY CONDITIONS - This procedure may be entered from:

- a. E-1, LOSS OF REACTOR OR SECONDARY COOLANT, or,
- b. ECA-0.2, LOSS OF ALL AC POWER RECOVERY WITH SI REQUIRED, or,
- c. ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF BOTH STEAM GENERATORS, or,
- d. FR-C.1, RESPONSE TO INADEQUATE CORE COOLING, or,
- e. FR-C.2, RESPONSE TO DEGRADED CORE COOLING, or,
- f. FR-C.3, RESPONSE TO SATURATED CORE COOLING, or,
- g. FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, or,
- h. FR-Z.1, RESPONSE TO HIGH CONTAINMENT PRESSURE, on low RWST level.
- i. Other procedures whenever RWST level reaches the switchover setpoint (28%).

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

.....

CAUTION

- o IF OFFSITE POWER IS LOST AFTER SI RESET, THEN MANUAL ACTION MAY BE REQUIRED TO RESTART SAFEGUARDS EQUIPMENT. (REFER TO ATT-8.5, ATTACHMENT LOSS OF OFFSITE POWER)
- o CONSULT WITH RADIATION PROTECTION BEFORE DISPATCHING PERSONNEL TO AUXILIARY BUILDING. SWITCHOVER TO RECIRCULATION MAY CAUSE HIGH RADIATION LEVELS.

.....

NOTE: o FOLDOUT page should be open and monitored periodically.

o Adverse CNMT values should be used whenever CNMT pressure is greater than 4 psig or CNMT radiation is greater than 10⁺⁰⁵ R/hr.

<p>* 1 Verify RWST level - GREATER THAN 15%</p>	<p><u>IF</u> sump recirculation <u>NOT</u> in progress, <u>THEN</u> pull-stop all pumps taking suction from RWST, <u>EXCEPT</u> one SI pump <u>AND</u> go to ECA-1.1. LOSS OF EMERGENCY COOLANT RECIRCULATION. Step 1.</p>
---	--

<p>2 Verify CNMT Sump B Level - AT LEAST 113 INCHES</p>	<p><u>IF</u> RWST level is less than 28% <u>AND</u> CNMT sump B level is less than 113 inches, <u>THEN</u> go to ECA-1.2. LOCA OUTSIDE CONTAINMENT. Step 1.</p>
---	---

NOTE: Steps 3 through 13 should be performed without delay. FR procedures should not be implemented prior to completion of these steps.

3 Reset SI

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: IF D/Gs supplying emergency AC busses, THEN non-essential loads may be shed as necessary to allow start of additional SW pumps.

4 Establish Adequate SW Flow:

- | | |
|--|--|
| <p>a. Verify at least two SW pumps -
RUNNING</p> <p>b. Verify AUX BLDG SW isolation
valves - OPEN</p> <ul style="list-style-type: none"> • MOV-4615 and MOV-4734 • MOV-4616 and MOV-4735 <p>c. Dispatch AO to Check BOTH CCW
Hxs - IN SERVICE</p> <p>d. Determine required SW flow to
CCW HXs per table:</p> | <p>a. Start additional SW pumps as
power supply permits (257 kw
each). <u>IF</u> only 1 SW pump
operable, <u>THEN</u> perform the
following:</p> <ol style="list-style-type: none"> 1) Ensure SW aligned to one CCW
Hx per ATT-2.1, ATTACHMENT
MIN SW. 2) Go to Step 5. <p>b. Manually align valves.</p> <p>c. Locally place BOTH CCW Hxs in
service</p> |
|--|--|

SW DISCHARGE ALIGNMENT	CCW HXs IN SERVICE	REQUIRED SW FLOW
Normal	2	Total of 5000 - 6000 gpm equally divided to both HXs
Normal	1	5000 - 6000 gpm to in-service HX
Alternate	2	30-33" d/p across each HX
Alternate	1	95-100" d/p across in-service HX

This Step continued on the next page.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

(Step 4 continued from previous page)

- | | |
|---|---|
| <p>e. Direct AO to adjust SW flow to required value</p> <ul style="list-style-type: none"> o <u>IF</u> on normal SW discharge: <ul style="list-style-type: none"> • V-4619, CCW HX A • V-4620, CCW HX B <li style="text-align: center;">-OR- o <u>IF</u> on alternate SW discharge: <ul style="list-style-type: none"> • V-4619C, CCW HX A • V-4620B, CCW HX B | <p>e. <u>IF</u> the required SW flow can <u>NOT</u> be obtained, <u>THEN</u> perform the following:</p> <ol style="list-style-type: none"> 1) Isolate SW to screenhouse and air conditioning headers. <ul style="list-style-type: none"> • MOV-4609/MOV-4780 - AT LEAST ONE CLOSED • MOV-4663/MOV-4733 - AT LEAST ONE CLOSED 2) Direct AO to locally adjust SW flow to required value. 3) Direct AO to locally isolate SW return from SFP Hxs: <ul style="list-style-type: none"> • SFP Hx A (V-4622) (for alternate SW discharge use V-4622A) • SFP Hx B (V-8689) 4) Verify SW portions of ATT-17.0. ATTACHMENT SD-1 are complete. |
|---|---|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

5 Establish CCW flow to RHR Hxs:

a. Check both CCW pumps - RUNNING

a. Perform the following:

1) Start CCW pumps as power supply permits (122 kw each).

2) IF both CCW pumps are running. THEN go to step 5b.3) IF only one CCW pump is running. THEN perform the following:

a) Direct AO to isolate CCW to boric acid evaporator

o Close V-760A

b) Manually open CCW MOV to only one operable RHR loop.

o Open MOV-738A

-OR-

o Open MOV-738B

c) Go to step 6.

b. Open CCW valves to RHR Hxs

b. Dispatch AO to locally open valves.

• MOV-738A

• MOV-738B

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

.....

CAUTION

- o THE RHR HX OUTLET VALVES (HCV-624 AND HCV-625) WILL FAIL OPEN ON LOSS OF INSTRUMENT AIR PRESSURE.
- o CONSULT WITH RADIATION PROTECTION BEFORE DISPATCHING PERSONNEL TO AUXILIARY BUILDING. SWITCHOVER TO RECIRCULATION MAY CAUSE HIGH RADIATION LEVELS.

.....

6 Check RHR Flow:

- o RHR flow - LESS THAN 1500 GPM PER OPERATING PUMP

Manually adjust RHR Hx outlet valves equally to reduce flow to less than 1500 gpm per operating pump

- RHR Hx A. HCV-625
- RHR Hx B. HCV-624

IF flow can NOT be reduced manually. THEN dispatch an AO with locked valve key to locally adjust RHR Hx outlet valve handwheels equally to reduce flow.

- RHR Hx A. HCV-625 handwheel
- RHR Hx B. HCV-624 handwheel

EOP:

ES-1.3

TITLE:

TRANSFER TO COLD LEG RECIRCULATION

REV: 35

PAGE 8 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

7 Check IF Unnecessary Pumps
Can Be Stopped:

- | | |
|---|---|
| <p>a. Three SI pumps - RUNNING</p> | <p>a. Go to Step 7c.</p> |
| <p>b. Stop SI pump C and place both switches in PULL STOP</p> | |
| <p>c. Stop both RHR pumps and place in PULL STOP</p> | |
| <p>d. Both CNMT spray pumps - RUNNING</p> | <p>d. Pull stop any idle CNMT spray pump and go to Step 7f.</p> |
| <p>e. Pull stop one CNMT spray pump</p> | |
| <p>f. Check CNMT pressure - LESS THAN 28 PSIG.</p> | <p>f. Go to Step 8.</p> |
| <p>g. Place NaOH Tank outlet valve switches to OPEN.</p> <ul style="list-style-type: none"> • AOV-836A • AOV-836B | |
| <p>h. Reset CNMT spray</p> | |
| <p>i. Close discharge valves for idle CNMT spray pump(s)</p> <ul style="list-style-type: none"> o Pump A <ul style="list-style-type: none"> • MOV-860A • MOV-860B o Pump B <ul style="list-style-type: none"> • MOV-860C • MOV-860D | |

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

8 Verify RHR System Alignment:

- | | |
|--|--|
| <p>a. Verify the following valves - CLOSED</p> <ul style="list-style-type: none"> o RHR suction valves from loop A hot leg <ul style="list-style-type: none"> • MOV-700 • MOV-701 o RHR discharge valves to loop B cold leg <ul style="list-style-type: none"> • MOV-720 • MOV-721 <p>b. Verify RHR pump suction crosstie valves - OPEN</p> <ul style="list-style-type: none"> • MOV-704A • MOV-704B <p>c. Verify the following valves - OPEN</p> <ul style="list-style-type: none"> o RHR pump discharge to Rx vessel deluge valves <ul style="list-style-type: none"> • MOV-852A • MOV-852B o RHR suction from sump B (inside CNMT) <ul style="list-style-type: none"> • MOV-851A • MOV-851B <p>d. Verify RCDT pump suction valves from sump B - CLOSED</p> <ul style="list-style-type: none"> • MOV-1813A • MOV-1813B | <p>a. Ensure at least one suction valve and one discharge valve closed.</p> <p>b. Manually open valves. If valves can <u>NOT</u> be opened, <u>THEN</u> dispatch AO to locally open valves.</p> <p>c. Ensure at least one valve in each set open.</p> <p>d. Manually close valves.</p> |
|--|--|

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

.....

CAUTION

RHR FLOW INDICATED ON FI-626 SHOULD BE LIMITED TO 1500 GPM PER OPERATING PUMP TO ENSURE OPTIMUM PUMP PERFORMANCE.

.....

9 Initiate RHR Sump Recirculation:

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Close RWST outlet valve to RHR pump suction, MOV-856 (turn on DC power key switch) b. Open both RHR suction valves from sump B (outside CNMT) <ul style="list-style-type: none"> o MOV-850A - OPEN o MOV-850B - OPEN c. Check MOV-738A AND MOV-738B - BOTH OPEN d. Start both RHR pumps e. Verify at least one RHR pump - RUNNING | <ul style="list-style-type: none"> a. Dispatch AO to locally close valve and continue with Step 9b. b. <u>IF</u> only one valve will open, <u>THEN</u> perform the following: <ul style="list-style-type: none"> 1) Initiate only one train of RHR recirculation (Refer to ATT-14.3, ATTACHMENT RHR NPSH for further guidance). 2) Go to step 9e. <p><u>IF</u> neither valve will open, <u>THEN</u> refer to ATT-14.6, ATTACHMENT RHR PRESS REDUCTION for further guidance.</p> c. Perform the following: <ul style="list-style-type: none"> 1) <u>IF</u> MOV-738A open, <u>THEN</u> start RHR Pump A and go to step 9e. 2) <u>IF</u> MOV-738B open, <u>THEN</u> start RHR Pump B and go to step 9e. e. <u>IF</u> no RHR pump can be started, <u>THEN</u> go to ECA-1.1, LOSS OF EMERGENCY COOLANT RECIRCULATION, Step 1. |
|---|---|

EOP:

ES-1.3

TITLE:

TRANSFER TO COLD LEG RECIRCULATION

REV: 35

PAGE 11 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

.....

CAUTION

SUMP RECIRCULATION FLOW TO RCS MUST BE MAINTAINED AT ALL TIMES, EXCEPT DURING ALIGNMENT FOR HIGH HEAD RECIRCULATION.

.....

NOTE: The TSC should be requested to establish periodic monitoring of the AUX BLDG sub-basement, as radiological conditions permit, to monitor RHR pump operation.

10 Check RWST Level - LESS THAN 15%

DO NOT continue with this procedure until RWST level is less than 15%.

11 Stop All Pumps Supplied From RWST:

a. Stop all SI pumps and place in PULL STOP

b. Stop all charging pumps

c. Stop operating CNMT spray pump and place in PULL STOP

d. Check CNMT pressure - LESS THAN 28 PSIG

d. Go to Step 12.

e. Reset CNMT spray if necessary

f. Close CNMT spray pump discharge valves

- MOV-860A
- MOV-860B
- MOV-860C
- MOV-860D

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

.....

CAUTION

RHR FLOW MUST BE MAINTAINED LESS THAN 1500 GPM PER OPERATING RHR PUMP AS DETERMINED BY THE TOTAL OF FI-931A, FI-931B AND FI-626 INDICATIONS.

.....

12 Align SI And CNMT Spray For Sump Recirculation:

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Verify SI pump suction valves from BASTs - CLOSED <ul style="list-style-type: none"> • MOV-826A and MOV-826B • MOV-826C and MOV-826D
 b. Close RWST outlet valves to SI and CNMT spray pumps (turn on DC power key switches) <ul style="list-style-type: none"> • MOV-896A • MOV-896B
 c. Close SI pump RECIRC valves <ul style="list-style-type: none"> • MOV-898 • MOV-897
 d. Verify SI pump suction valves from RWST - OPEN <ul style="list-style-type: none"> • MOV-825A • MOV-825B
 e. Align operating RHR pump flow path(s) to SI and CNMT spray pump suction. <ul style="list-style-type: none"> o <u>IF</u> RHR Pump A operating, <u>THEN</u> open MOV-857A and MOV-857C o <u>IF</u> RHR Pump B operating, <u>THEN</u> open MOV-857B | <ul style="list-style-type: none"> a. Ensure at least one valve in each flowpath closed.
 b. Ensure at least one valve closed.
 c. Ensure at least one valve closed.
 d. Ensure at least one valve open.
 e. Ensure at least one flowpath aligned from RHR pump(s) to SI and CS pump suction header (Refer to ATT-14.5, ATTACHMENT RHR SYSTEM).

<u>IF</u> neither flow path can be aligned, <u>THEN</u> refer to ATT-14.6, ATTACHMENT RHR PRESS REDUCTION for further guidance. |
|---|---|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

.....

CAUTION

SI PUMPS SHOULD BE STOPPED IF RCS PRESSURE IS GREATER THAN THEIR SHUTOFF HEAD PRESSURE.

.....

NOTE: Operation of SI pump C is preferred since it delivers to both RCS loops.

13 Verify Adequate RCS Makeup Flow:

a. RCS pressure - LESS THAN 225 psig [425 psig adverse CNMT]

a. Perform the following:

1) Check RCS conditions:

- o RCS subcooling based on core exit T/Cs greater than Figure MIN SUBCOOLING.
- o PRZR level greater than 5% [30% adverse CNMT].

IF either condition NOT met, THEN start one SI pump.

2) Go to Step 14.

b. RHR injection flow adequate:

b. Start one SI pump.

- o Core exit T/Cs - LESS THAN REQUIREMENTS OF FIGURE RHR INJECTION
- o Check RVLIS level (no RCPS) - GREATER THAN 52% [55% adverse CNMT]

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

.....

CAUTION

IF A CNMT SPRAY PUMP IS STARTED, THEN CNMT PRESSURE SHOULD BE CLOSELY MONITORED. CNMT PRESSURE SHOULD NOT BE REDUCED TO LESS THAN 22 PSIG.

.....

***14 Check If CNMT Spray Is Required:**

a. CNMT pressure - GREATER THAN 28 PSIG

a. Perform the following:

1) IF CNMT spray previously actuated and NaOH tank level greater than 55%. THEN consult TSC to determine if CNMT spray should be restarted.

2) Go to Step 15.

b. Verify CNMT spray pump discharge valves - OPEN

b. Manually open valve(s) for selected pump.

- MOV-860A
- MOV-860B
- MOV-860C
- MOV-860D

- CS pump A, MOV-860A or MOV-860B
- CS pump B, MOV-860C or MOV-860D

c. Start selected CNMT spray pump

c. IF the selected CNMT spray pump will not start, THEN align and start the other CNMT spray pump. IF neither pump will start, THEN continue with Step 15. WHEN a CNMT spray pump can be started, THEN do steps 14d, e and f.

d. Adjust RHR flow to maintain less than 1500 gpm per operating RHR pump as indicated by the total of FI-931A, FI-931B and FI-626 indications.

This Step continued on the next page.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

(Step 14 continued from previous page)

e. Verify NaOH flow (FI-930)

e. IF NaOH flow NOT indicated, THEN place switches for NaOH tank outlet valves to OPEN.

- AOV-836A
- AOV-836B

f. WHEN CNMT pressure decreases to 22 psig. THEN perform the following:

- 1) Reset CNMT spray
- 2) Check NaOH tank outlet valves
- CLOSED
 - AOV-836A
 - AOV-836B
- 3) Stop CNMT spray pumps and place in PULL STOP
- 4) Close CNMT spray pump discharge valves
 - MOV-860A
 - MOV-860B
 - MOV-860C
 - MOV-860D

2) Place NaOH tank outlet valve controllers to MANUAL and close valves.

15 Verify Adequate Core Cooling:

- o Core exit T/Cs - STABLE OR DECREASING
- o RVLIS level (no RCPs) - STABLE OR INCREASING
- o RVLIS level (no RCPs) - GREATER THAN 52% [55% adverse CNMT]

IF both RHR pumps running, THEN ensure two SI pumps running.

IF only one RHR pump running, THEN perform the following:

- a. Ensure one SI pump running.
- b. WHEN CNMT spray pumps stopped, THEN start one additional SI pump.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

***16 Monitor Indications Of CNMT Sump B Blockage**

- o Check running RHR Pump motor current - STABLE
 - RHR Pump A, PPCS point 10685AD
 - RHR Pump B, PPCS point 10685BD
- o Check running RHR pump discharge flows - STABLE

Perform the following:

- a. Stop all but one RHR pump
- b. Reduce RHR flow as low as possible but NOT less than requirements of FIG-6.0, FIGURE MIN RCS INJECTION.
- c. Contact the TSC for additional guidance.

NOTE: TDAFW pump flow control AOVs may drift open on loss of IA.

***17 Monitor Intact S/G Levels:**

- a. Narrow range level - GREATER THAN 5% [25% adverse CNMT]
- b. Control feed flow to maintain narrow range level between 17% [25% adverse CNMT] and 50%

- a. Maintain total feed flow greater than 200 gpm until narrow range level greater than 5% [25% adverse CNMT] in at least one S/G.

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

18 Establish Normal Shutdown Alignment:

a. Check condenser - AVAILABLE

a. Dispatch AO to perform ATT-17.1, ATTACHMENT SD-2.

b. Perform the following:

- o Open generator disconnects
 - 1G13A71
 - 9X13A73
- o Place voltage regulator to OFF
- o Open turbine drain valves
- o Rotate reheater steam supply controller cam to close valves
- o Place reheater dump valve switches to HAND
- o Stop all but one condensate pump

c. Verify adequate Rx head cooling:

- 1) Verify at least one control rod shroud fan - RUNNING
- 2) Verify one Rx compartment cooling fan - RUNNING

1) Manually start one fan as power supply permits (45 kw)

2) Perform the following:

- o Dispatch AO to reset UV relays at MCC C and MCC D.
- o Manually start one fan as power supply permits (23 kw)

d. Verify ATT-17.0, ATTACHMENT SD-1 - COMPLETE

EOP:

ES-1.3

TITLE:

TRANSFER TO COLD LEG RECIRCULATION

REV: 35

PAGE 18 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

19 Check If Emergency D/Gs
Should Be Stopped:

a. Verify AC emergency busses
energized by offsite power:

o Emergency D/G output breakers
- OPEN

o AC emergency bus voltage -
GREATER THAN 420 VOLTS

o AC emergency bus normal feed
breakers - CLOSED

b. Stop any unloaded emergency D/G
and place in standby (Refer to
ATT-8.1, ATTACHMENT D/G STOP)

a. Try to restore offsite power
(Refer to ER-ELEC.1, RESTORATION
OF OFFSITE POWER).

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

20 Check If SI ACCUMs Should Be Isolated:

- | | |
|--|--|
| <p>a. Both RCS hot leg temperatures - LESS THAN 400° F</p> <p>b. Dispatch AO with locked valve key to locally close breakers for SI ACCUM discharge valves</p> <ul style="list-style-type: none"> • MOV-841. MCC C position 12F • MOV-865. MCC D position 12C <p>c. Close SI ACCUM discharge valves</p> <ul style="list-style-type: none"> • ACCUM A. MOV-841 • ACCUM B. MOV-865 <p>d. Locally reopen breakers for MOV-841 and MOV-865</p> | <p>a. Continue with Step 21. <u>WHEN</u> both RCS hot leg temperatures less than 400° F. <u>THEN</u> do Steps 20b through d.</p> <p>c. Vent any unisolated ACCUMs:</p> <p>1) Open vent valves for unisolated SI ACCUMs.</p> <ul style="list-style-type: none"> • ACCUM A. AOV-834A • ACCUM B. AOV-834B <p>2) Open HCV-945.</p> |
|--|--|

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

.....

CAUTION

IF FUEL DAMAGE IS SUSPECTED, MAINTAIN S/G PRESSURE SLIGHTLY GREATER THAN RCS PRESSURE.

.....

21 Check If Intact S/Gs Should Be Depressurized To RCS Pressure:

- | | |
|---|--|
| a. RCS pressure - LESS THAN INTACT S/G PRESSURES | a. Go to Step 22. |
| b. Direct RP to sample S/Gs for activity | |
| c. Request TSC perform a dose projection on steaming S/Gs | |
| d. Dose projection for each S/G - ACCEPTABLE | d. Do <u>NOT</u> dump steam from a S/G with an unacceptable dose projection. |
| e. Dump steam to condenser from intact S/G(s) until S/G pressure less than RCS pressure | e. <u>IF</u> steam dump to condenser <u>NOT</u> available, <u>THEN</u> dump steam using intact S/G ARVs until S/G pressure less than RCS pressure. |

22 Consult TSC to Determine If Rx Vessel Head Should Be Vented

EOP:

ES-1.3

TITLE:

TRANSFER TO COLD LEG RECIRCULATION

REV: 35

PAGE 21 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: This procedure should be continued while obtaining CNMT hydrogen sample in Step 23.

23 Check CNMT Hydrogen Concentration:

- a. Direct RP to start CNMT hydrogen monitors as necessary
- b. Hydrogen concentration - LESS THAN 0.5%
- b. Consult TSC to determine if hydrogen recombiners should be placed in service.

NOTE: The TSC should be consulted before changing recirculation lineups.

24 Check Event Duration - GREATER THAN 19 HOURS AFTER EVENT INITIATION

Consult TSC to evaluate long term plant status.

25 Secure CNMT Spray

- a. Reset CNMT spray
- b. Place NaOH Tank outlet valve switches in AUTO
 - AOV-836A
 - AOV-836B
- c. Place CNMT spray pumps in PULL STOP
- d. Close discharge valves for idle CNMT spray pumps
 - o Pump A
 - MOV-860A
 - MOV-860B
 - o Pump B
 - MOV-860C
 - MOV-860D

EOP:

ES-1.3

TITLE:

TRANSFER TO COLD LEG RECIRCULATION

REV: 35

PAGE 22 of 22

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

26 Verify Two SI Pumps - RUNNING

Manually start pumps.

27 Check Core Exit T/Cs - LESS
THAN REQUIREMENTS OF FIGURE
RHR INJECTION

Perform the following:

a. Manually open both PRZR PORVs
and block valves.

b. Verify core exit T/Cs decreasing
to less than requirements of
Figure RHR INJECTION. IF NOT,
THEN dump steam from intact S/Gs
until core exit T/Cs less than
required.

28 Consult TSC To Evaluate Long
Term Plant Status

-END-

EOP: ES-1.3	TITLE: TRANSFER TO COLD LEG RECIRCULATION	REV: 35 PAGE 1 of 1
----------------	--	------------------------

ES-1.3 APPENDIX LIST

TITLE

- 1) RED PATH SUMMARY
- 2) FIGURE RHR INJECTION (FIG-5.0)
- 3) FIGURE MIN SUBCOOLING (FIG-1.0)
- 4) ATTACHMENT D/G STOP (ATT-8.1)
- 5) ATTACHMENT SD-1 (ATT-17.0)
- 6) ATTACHMENT SD-2 (ATT-17.1)
- 7) ATTACHMENT RHR NPSH (ATT-14.3)
- 8) ATTACHMENT RHR SYSTEM (ATT-14.5)
- 9) ATTACHMENT MIN SW (ATT-2.1)
- 10) ATTACHMENT RHR PRESS REDUCTION (ATT-14.6)
- 11) ATTACHMENT LOSS OF OFFSITE POWER (ATT-8.5)
- 12) FOLDOUT

EOP: ES-1.3	TITLE: TRANSFER TO COLD LEG RECIRCULATION	REV: 35 PAGE 1 of 1
----------------	--	------------------------

RED PATH SUMMARY

- a. SUBCRITICALITY - Nuclear power greater than 5%
- b. CORE COOLING - Core exit T/Cs greater than 1200° F
-OR-
Core exit T/Cs greater than 700° F AND
RVLIS level (no RCPs) less than 52% [55%
adverse CNMT]
- c. HEAT SINK - Narrow range level in all S/Gs less than 5%
[25% adverse CNMT] AND total feedwater flow
less than 200 gpm
- d. INTEGRITY - Cold leg temperatures decrease greater than
100° F in last 60 minutes AND RCS cold leg
temperature less than 285° F
- e. CONTAINMENT - CNMT pressure greater than 60 psig

EOP: ES-1.3	TITLE: TRANSFER TO COLD LEG RECIRCULATION	REV: 35 PAGE 1 of 1
----------------	--	------------------------

FOLDOUT PAGE

1. ECA-1.1 TRANSITION CRITERIA

IF emergency coolant recirculation is established and subsequently lost, THEN go to ECA-1.1, LOSS OF EMERGENCY COOLANT RECIRCULATION, Step 1.

2. AFW SUPPLY SWITCHOVER CRITERION

IF CST level decreases to less than 5 feet, THEN switch to alternate AFW water supply (Refer to ER-AFW.1, ALTERNATE WATER SUPPLY TO AFW PUMPS).