

DOCUMENT TRANSMITTAL 18124
FOR DOCUMENT NOTIFICATION AND/OR TRANSMITTAL

TO: NRC (DC DESK) MAC: N/A DESTINATION:
DESCRIPTION:

DATE: Mon Jul 25 12:38:47 1994

DOCUMENT	REV	COMMENTS	CPY	COPY TOTALS		
			#	INFO	CNTL	MSTR
EOP0012	01		7	1	0	0

INSTRUCTIONS TO THE ADDRESSEE:

IF YOU ARE A HOLDER OF A HARD COPY, PLEASE VERIFY THE DOCUMENT(S) RECEIVED AGREES WITH THE ABOVE DESCRIPTION.
BE SURE TO DESTROY DOCUMENT(S) OR PORTIONS OF DOCUMENT(S) SUPERSEDED BY THE ABOVE.

THE SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTAND THESE INSTRUCTIONS AND THE CHANGES TO THE DOCUMENTS.

RETURN SIGNED AND DATED TRANSMITTAL TO DOCUMENT CONTROL WITHIN 20 DAYS AT MAIL CODE: ☒ NR2B
☐ SA1G
☐ NA1C
Florida Power Corporation
Document Control
Crystal River Energy Complex
15760 W. Power Line St.
Crystal River, FL 34428-6708

SIGNATURE OF ADDRESSEE _____ DATE _____

INDEPENDENT VERIFICATION (Control Room Documents Only) _____ DATE _____

110044
9408150132 940725
PDR ADOCK 05000302
F PDR

AD4591

SBO	REV 01	EOP-12
-----	--------	--------

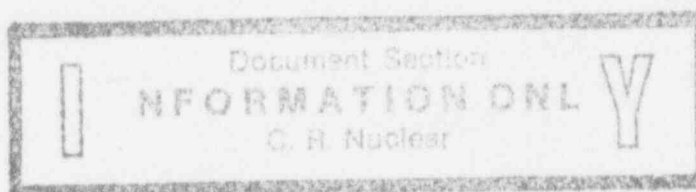
STATION BLACKOUT

1.0 ENTRY CONDITIONS

IF in MODES 1 through 4, neither 4160V ES bus can be energized,
THEN use this EOP.

2.0 IMMEDIATE ACTIONS

This EOP has no Immediate Actions.



This Procedure Addresses Safety Related Components		
Approved by MNPO	<i>[Signature]</i> (Signature on file)	Date <u>7/25/94</u>
EOP-12	PAGE 1 of 35	SBO

RULE #3, EFW CONTROL

- 1 Ensure EFW flow limits are NOT exceeded...
- 2 Ensure required OTSG level...
- 3 IF adequate subcooling margin does NOT exist,
THEN ensure OTSG levels are continuously progressing towards 80 - 90%...
- 4 EFW flow should be throttled to prevent OTSG PRESS from decreasing > 100 psi below desired setpoint...

3.0 FOLLOW-UP ACTIONS

ACTIONS

DETAILS

PLANT STATUS:

- o Both ES 4160V Buses are de-energized,
 - o The Reactor and Turbine are tripped
-

3.1 ___ Minimize RCS inventory loss.

- o Close MUV-49 to isolate letdown. Valve position indication is available at the ES-B panel.
 - o Close MUV-253 to isolate CBO.
 - o Contact Chemistry and ensure all sampling of the primary system is stopped.
-

3.2 ___ Ensure core cooling.

- o EFP-2 started
 - o EFIC OTSG level control is selected to NAT CIRC setpoint
 - o EFW flow exists to both OTSGs.
- [RULE #3, EFW CONTROL]
-

Note

Neutron flux recorders will not be operable. Use edgewise meters for monitoring neutron flux levels.

3.3 ___ Verify the reactor is shutdown.

- o IR flux decreasing.
- o SR flux decreasing.
- o SR flux at shutdown level and not increasing.

BLANK PAGE

3.0 FOLLOW-UP ACTIONS (CONT'D)

<u>ACTIONS</u>	<u>DETAILS</u>
3.4 — Secure DC motors at the Main Control Board that are not needed by placing their control switches in Pull-to-lock.	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>MUP-3A, MUP A B/U LUBE OIL PP</div> <div>MUP-3B, MUP B B/U LUBE OIL PP</div> <div>MUP-3C, MUP C B/U LUBE OIL PP</div> <div>RCP-3A, RCP A DC OIL LIFT PP</div> <div>RCP-3B, RCP B DC OIL LIFT PP</div> <div>RCP-3C, RCP C DC OIL LIFT PP</div> <div>RCP-3D, RCP D DC OIL LIFT PP</div>
3.5 — Actuate MS line isolation on both OTSGs.	<div><div></div><div></div></div> <div>1 — Depress "Main Stm Isolation" pushbuttons on EFIC Channels A and B for both OTSGs:</div> <div>2 — Verify all 4 MSIVs closed by observing status lights on PSA panel.</div> <div><div></div><div></div><div></div><div></div></div> <div>o MSV-411 o MSV-412</div> <div>o MSV-413 o MSV-414</div>
<u>Note</u>	
In-plant communications should be made with the hand-held radios, on Channel 11 during the performance of this EOP.	
3.6 — Notify personnel of plant conditions as required.	<div><div></div><div></div><div></div></div> <div>SOTA,</div> <div>Plant Operators,</div> <div>SSOD to evaluate plant conditions for potential entry into the Emergency Plan.</div>
3.7 — Notify available operator to observe EFP-2.	Locally observe EFP-2 performance and report indications of abnormal pump/turbine operation.

BLANK PAGE

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

3.8 — Continue attempts to restore AC power to the 4160 ES buses.

- o Attempt to restore EDG operation.
- o Determine status of 230KV Switchyard
 - o Off-Site Power Source Xfmr
 - o Backup ES Transformer
- o Determine status of 500KV switchyard to establish backfeed.

3.9 — IF a tripped EDG exists, THEN correct the cause of the trip and energize the affected Bus.

Continue on in this procedure.

Tripped EDG recovery:

- 1 — Block the EDG start command by selecting the "NORMAL/AT ENGINE" switch to "AT ENGINE" on the tripped EDG's gauge board.
- 2 — Ensure condition causing trip is corrected.
- 3 — Depress the "RESET" P/B on the EDG gauge board.
- 4 — Wait at least 2 minutes to allow the shutdown relays to reset.
- 5 — Select the "NORMAL/AT ENGINE" switch to "NORMAL" on the EDG gauge board.

The EDG should start and energize the bus if an undervoltage condition exists.

3.10 — IF, at any time while performing this EOP, 4160V ES bus power is available, THEN GO TO Step 3.25 in this EOP.

Applicable Carry-over steps:

3.10 IF 4160V ES power is available, GO TO Step 3.25...

RULE #3, EFW CONTROL

- 1 Ensure EFW flow limits are NOT exceeded...
- 2 Ensure required OTSG level...
- 3 IF adequate subcooling margin does NOT exist,
THEN ensure OTSG levels are continuously progressing towards 80 - 90%...
- 4 EFW flow should be throttled to prevent OTSG PRESS from decreasing > 100 psi below desired setpoint...

Table 1
Adequate Subcooling Margin:

RCS	Margin
> 1500 psig	30°F
≤ 1500 to > 250 psig	50°F
≤ 250 to > 150 psig	70°F
≤ 150 psig	SPDS
≤ 200°F	N/A

3.0 FOLLOW-UP ACTIONS (CONT'D)

<u>ACTIONS</u>	<u>DETAILS</u>
3.11 — IF, at any time while performing this EOP, adequate subcooling margin does <u>NOT</u> exist, <u>THEN</u> :	o See Table 1 for adequate subcooling margins.
o Raise OTSG levels to 80 to 90% using EFW.	o Depress "95%" level select pushbutton on both OTSGs.
o Immediately begin a cooldown at the maximum achievable rate.	[RULE #3, CONTROL EFW]
o There are no applicable cooldown rate limits for this cooldown.	

NOTE

The PORV and the High Point Vents should remain closed during performance of this procedure unless specifically directed otherwise.

3.12 — Select PORV, RCV-10, to CLOSE.	ICS panel control switch.
---------------------------------------	---------------------------

Applicable Carry-over steps:

3.10 IF 4160V ES power is available, GO TO Step 3.25...

3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible...

Table 1
Adequate Subcooling Margin:

RCS	Margin
> 1500 psig	30°F
≤ 1500 to > 250 psig	50°F
≤ 250 to > 150 psig	70°F
≤ 150 psig	SPDS
≤ 200°F	N/A

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

- 3.13 — IF at any time RC PRESS \geq 2400 psig,
THEN reduce RC PRESS based on subcooling margin.

Refer to table 1.

IF the PORV is NOT available,
THEN energize and use the High Point Vents.

DETAILS

- o IF ASCM does NOT exist,
THEN open PORV to reduce RC PRESS to \approx 1600 psig
- o IF ASCM exists,
THEN open PORV to reduce RC PRESS until either:
 - o RC PRESS > ASCM curve
 - OR
 - o RC PRESS \approx 1600 psig

High Point Vent valves:

PZR	A HOT LEG	B HOT LEG
DPDP-8A __SW #13	DPDP-5A __SW #1	DPDP-5B __SW #1
__RCV-159	__RCV-157	__RCV-163
__RCV-160	__RCV-158	__RCV-164

- 3.14 — IF any of the containment isolation valves listed in the details column were open when the SBO event occurred,
THEN ensure that they are closed using the local handwheel.

IF the open containment isolation valve cannot be closed,
THEN complete ITS 3.6.3 action A to isolate the penetration.

Continue on in this procedure.

- o DHV-4 "DH OUTLET ISO" (location is not accessible during an SBO)
- o DHV-41 "DH OUT CONT ISO" (located in the triangle room 20' above floor)
- o DHV-42 "DHP-1A RB SUMP" (located in A DH pit 12' above floor)
- o DHV-43 "DHP-1B RB SUMP" (located in B DH pit 12' above floor)
- o IF the action statement for ITS 3.6.3 is in effect for any other valves prior to the SBO,
THEN ensure that ITS 3.6.3 action A has been completed.

Applicable Carry-over steps:

- 3.10 IF 4160V ES power is available, GO TO Step 3.25...
- 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible...
- 3.13 Control RC PRESS < 2400# using PORV or HPVs...

RULE #3, EFW CONTROL

- 1 Ensure EFW flow limits are NOT exceeded...
- 2 Ensure required OTSG level...
- 3 IF adequate subcooling margin does NOT exist,
THEN ensure OTSG levels are continuously progressing towards 80 - 90%...
- 4 EFW flow should be throttled to prevent OTSG PRESS from decreasing > 100 psi below desired setpoint...

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

- | 3.15 — Vent main generator H₂ pressure to \approx 0 psig.
- Venting will take \approx 20 minutes to complete.
- Continue on in this procedure.

Notify available operator to perform the following:

1 Close H₂ isolation valves:

- HYV-28
- GGV-213
- GGV-220

2 — Open H₂ vent valves:

- o GGV-232
- o GGV-274

Valves are located on 95' TB at H₂ manifold area.

-
- | 3.16 — Control EFW flow to maintain RCS TEMP and minimize PZR outsurge.

[RULE #3, CONTROL EFW]

-
- | 3.17 — Provide cooling to the electrical equipment in the Control Complex.

Ensure the following doors are open and remain open until Control Complex ventilation is restored.

- All Annunciator cabinet doors
- All ICS cabinet doors
- All NNI cabinet doors
- All EFIC cabinet doors
- All doors on the 145 ft. elevation leading from the Control Room to the Turbine Building.

Applicable Carry-over steps:

- | |
|---|
| 3.10 IF 4160W ES power is available, GO TO Step 3.25... |
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control RC PRESS < 2400# using PORV or HPVs... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

- 3.18 — IF, at any time, while performing this EOP, OTSG PRESS decreases to ≤ 100 psig
 AND Units 1/2 steam is available,
 THEN supply EFP-2 from Units 1/2 steam.

Notify available plant operator to perform Enclosure 7, EFP-2 Steam Lineup to Units 1/2.

- 3.19 — IF instrument air is not available,
 THEN align N₂ to the ADVs.

Notify available operator to:

- o Close N₂ vent valve NGV-324.
- o Open N₂ supply valve NGV-312.

- 3.20 — Control OTSG PRESS to prevent cooldown of the RCS.

Use the ADVs to Stabilize RC TEMP.

Note

FWP-5A and FWP-5B should be operated for 30 minutes following event initiation.

- 3.21 — IF power restoration has not occurred,
 THEN stop FWP lube oil pumps.

- 1 — Place FWP-5A in Pull-to-lock.
- 2 — Place FWP-5B in Pull-to-lock.

- 3.22 — De-energize plant computer Inverter VBIT-1E.

- 1 — Open Inverter "AC Input" Bkr.
- 2 — Open Inverter "AC Output" Bkr.
- 3 — Open Inverter "Battery Input" Bkr.

Applicable Carry-over steps:

- | |
|--|
| 3.10 IF 4160V ES power is available, GO TO Step 3.25... |
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control PC PRESS < 2400# using PORV or HPVs... |
| 3.18 IF OTSG PRESS lowers to \leq 100 psig, Align AS to EFP-2... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

- | 3.23 — WHEN main generator pressure has decreased to ≈ 0 psig,
THEN purge the generator using N_2 for 1.5 hours,
OR until a total of 20" N_2 has been used.

Continue on in this procedure.

DETAILS

- o Use local H_2 pressure indication, TB-156-PI, 95' TB.

Notify available operator to perform the following:

- 1 — Open generator purge valves, 95' TB by H_2 header:

- o GGV-233
- o GGV-234

- 2 — Open N_2 purge supply valves, 119' TB West of Cardox tank:

- o NGV-325
- o NGV-326

- 3 — Ensure open, both N_2 tank outlet valves:

- o NGV-260
- o NGV-261

- 4 Record data:

North N_2 tank level _____ inches
South N_2 tank level _____ inches
Time of purge start _____ hours

- 5 WHEN either 1.5 hours has elapsed OR a total of 20" N_2 has been used,
THEN isolate the purge lineup by closing:

- _____ NGV-325
- _____ NGV-326
- _____ GGV-233
- _____ GGV-234
- _____ GGV-232

Applicable Carry-over steps:

- | |
|--|
| 3.10 IF 4160V ES power is available, GO TO Step 3.25... |
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control RC PRESS < 2400# using PORV or HPVs... |
| 3.18 IF OTSG PRESS lowers to \leq 100 psig, Align AS to EFP-2... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

- | 3.24 — WHEN main generator has been purged with N₂;
THEN stop TBP-3 and TBP-10
AND open DPDP switches for these pumps.

Continue on in this procedure

- 1 — Place TBP-3 control switch in Pull-to-lock.
- 2 — Open DPDP 1C, switches 2 and 16.
- 3 — Open DPDP 3B, switches 17 and 13.

- | 3.25 — Place EFP-1 control switch in Pull-to-lock.

Provides for controlled start-up following power restoration.

Note

Opening HPI pump Bkrs provides for controlled start-up following power restoration.

- | 3.26 — IF an ES actuation has occurred prior to energizing the 4160V ES buses.
THEN ensure ES is bypassed or reset
AND ensure HPI pump Bkrs are open.

- 1 — Ensure ES is bypassed or reset
 - HPI bypassed or reset
 - LPI bypassed or reset
 - RBIC bypassed or reset
- 2 — Position the following control switches to "STOP" then to "NORM-AFT-STOP"
 - MUP-1A
 - MUP-1B
 - MUP-1C

- | 3.27 — WHEN ES 4160V power is available,
THEN continue this EOP.

Applicable Carry-over steps:

- | |
|--|
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control RC PRESS < 2400# using PORV or HPVs... |
| 3.18 IF OTSG PRESS lowers to \leq 100 psig, Align AS to EFP-2... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

- 3.28 — Restore power to ES 4160V
A Bus.

DETAILS

- 1 — Ensure switchgear room is cleared prior to energizing the bus.
2. IF the "A 4160V ES BUS ES/UV BLOCK LOCK OUT" has actuated, THEN defeat and reset this lockout:
 - Notify available PPO to open knife switch "AY" in "DUMMY BREAKER" cubicle 3A13.
 - WHEN "AY" is open, THEN reset UV lockout by depressing "A 4160 ES UV RESET" pushbutton.
 - WHEN UV lockout has been reset, THEN notify available PPO to close knife switch "AY" in "DUMMY BREAKER" cubicle 3A13.
3. Close feeder Bkr from the available power source by holding in "CLOSE" position until the "4 KV ES BUS DEAD" annunciator alarm clears (normally ≤ 10 seconds):
 - 3211, Unit 3 Offsite Power Transformer,
 - OR
 - 3205, Unit 3 BEST,
 - OR
 - 3209, If EDG-1A is operating at rated voltage and speed.
- 4 — IF EDG is supplying the bus, THEN CONCURRENTLY PERFORM AP-770, Emergency Diesel Generator Actuation, beginning with Step 3.2.

Applicable Carry-over steps:

- | |
|--|
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control RC PRESS < 2400# using PORV or HPVs... |
| 3.18 IF OTSG PRESS lowers to \leq 100 psig, Align AS to EFP-2... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

3.29 — Restore power to ES 4160V
B Bus.

DETAILS

1 — Ensure switchgear room is
cleared prior to energizing the
bus.

2. IF the "B 4160V ES BUS ES/UV
BLOCK LOCK OUT" has actuated,
THEN defeat and reset this
lockout:

— Notify available PPO to open
knife switch "AY" in "DUMMY
BREAKER" cubicle 3B2.

— WHEN "AY" is open,
THEN reset UV lockout by
depressing "B 4160 ES UV
RESET" pushbutton.

— WHEN UV lockout has been
reset,
THEN notify available PPO to
close knife switch "AY" in
"DUMMY BREAKER" 3B2.

3. Close feeder Bkr from the
available power source by
holding in "CLOSE" position
until the "4 KV ES BUS DEAD"
annunciator alarm clears
(normally ≤ 10 seconds):

— 3212, Unit 3 Offsite Power
Transformer,

OR

— 3206, Unit 3 BEST,

OR

— 3210, If EDG-1B is operating
at rated voltage and speed.

4 — IF EDG is supplying the bus,
THEN CONCURRENTLY PERFORM
AP-770, Emergency Diesel
Generator Actuation, beginning
with Step 3.2.

Applicable Carry-over steps:

- | |
|--|
| 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible... |
| 3.13 Control RC PRESS < 2400# using PORV or HPVs... |
| 3.18 IF OTSG PRESS lowers to \leq 100 psig, Align AS to EFP-2... |

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

| 3.30 ____ If any ES 480V bus is de-energized,
THEN energize the de-energized bus or busses.

o ES 480V Bus 3A:

1 IF UV lockout relays are tripped,
THEN reset the lockout relays located behind the MCB.

1 ____ 8627/ESA
2 ____ 86X27/ESA

2 ____ Close Bkr 3221.

3 ____ Close Bkr 3311.

o ES 480V Bus 3B:

1 ____ IF UV lockout relay is tripped,
THEN reset the lockout relay located behind the MCB.

o 8627/ESB

2 ____ Close Bkr 3220.

3 ____ Close Bkr 3310.

| 3.31 ____ Ensure all ES 480V MCCs are energized.

____ ES MCC 3A1
____ ES MCC 3A2
____ ES MCC 3A3
____ ES MCC 3B1
____ ES MCC 3B2
____ ES MCC 3B3
____ ES MCC 3AB

Applicable Carry-over steps:

- 3.11 IF ASCM does NOT exist, Cooldown as rapidly as possible...
- 3.13 Control RC PRESS < 2400# using PORV or HPVs...
- 3.18 IF OTSG PRESS lowers to ≤ 100 psig, Align AS to EFP-2...

RULE #3, EFW CONTROL

- 1 Ensure EFW flow limits are NOT exceeded...
- 2 Ensure required OTSG level...
- 3 IF adequate subcooling margin does NOT exist,
THEN ensure OTSG levels are continuously progressing towards 80 - 90%...
- 4 EFW flow should be throttled to prevent OTSG PRESS from decreasing > 100 psi below desired setpoint...

Table 1
Adequate Subcooling Margin:

RCS	Margin
> 1500 psig	30°F
≤ 1500 to > 250 psig	50°F
≤ 250 to > 150 psig	70°F
≤ 150 psig	SPDS
$\leq 200^\circ\text{F}$	N/A

3.0 FOLLOW-UP ACTIONS (CONT'D)

<u>ACTIONS</u>	<u>DETAILS</u>
3.32 — Ensure SW and RW cooling water systems are operating.	o — SWP-1A or SWP-1B o — RWP-2A or RWP-2B
3.33 — IF EFW is required, THEN start EFP-1.	o — Start EFP-1 from the Main Control Room. [RULE #3, CONTROL EFW]
3.34 — IF EFP-2 is NOT required, THEN stop EFP-2.	Close ASV-5 and ASV-204.
3.35 — IF adequate subcooling margin exists, THEN GO TO Step 3.38 in this EOP.	Refer to Table 1, ASCM.

RULE #1, LOSS OF SUBCOOLING MARGIN

IF adequate subcooling margin is lost,

THEN perform the following:

- 1 Trip ALL RCPs immediately...
- 2 Ensure FULL HPI...
- 3 Ensure HPI flows are balanced...

RULE #4, PRESSURIZED THERMAL SHOCK

- 1 The PTS guidelines MUST be implemented when either of the following conditions exist:

o Forced RCS Flow: $T_{\text{cold}} < 380^{\circ}\text{F}$ AND cooldown rate exceeds T.S. limit.

o NO Forced RCS Flow: RCPs OFF AND HPI flow exists.

- 2 PTS guidelines: Ensure minimum adequate subcooling margin is maintained...

Table 1
Adequate Subcooling Margin:

RCS	Margin
> 1500 psig	30°F
≤ 1500 to > 250 psig	50°F
≤ 250 to > 150 psig	70°F
≤ 150 psig	SPDS
≤ 200°F	N/A

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

NOTE

Rule 4, Pressurized Thermal Shock guidelines are applicable if HPI flow exists with RCPs off.

3.36 — IF ASCM does NOT exist,
THEN Establish FULL HPI.

[RULE #1, LOSS OF
SUBCOOLING MARGIN]

Refer to Table M.

1 — Ensure MUV-16, Seal Injection
Control Valve is closed.

2 — Verify "SWGR TRANSF PERMIT"
lights are lit.

3 — Ensure MUP control switch is
selected to NORM-AFT-STOP.

4 — Ensure BWST suction to HPI are
open.

o MUV-73 o MUV-58

5 — Ensure MUP recirc valves are
open:

o MUV-53 o MUV-257

6 — Ensure associated Main Lube and
Gear Oil Pumps are operating.

7 — Ensure MUP cooling water supply.

8 — One at a time, start 2 MUPs.

9 — Establish HPI using all 4
injection lines.

3.37 — GO TO EOP-03, Inadequate
Subcooling Margin,
Beginning with step 3.1.

BLANK PAGE

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

- 3.38 — IF MUP is required
THEN start 1 MUP
AND establish RCP Seal
Injection and Make-up.

DETAILS

- 1 — Ensure MUV-16, Seal Injection Control Valve is closed.
- 2 — Verify "SWGR TRANSF PERMIT" light is lit.
- 3 — Ensure MUP control switch is selected to NORM-AFT-STOP.
- 4 — Ensure BWST suction is open.
 - o MUV-73 o MUV-58
- 5 — Ensure MUP recirc valves are open:
 - o MUV-53 o MUV-257
- 6 — Ensure associated Main Lube and Gear Oil Pumps are operating.
- 7 — Ensure MUP cooling water supply.
- 8 — Start MUP.
- 9 — Ensure open MUV-18, Seal Injection Block Valve.
- 10 — Throttle open MUV-16 to obtain 2 gpm/RCP.
- 11 — Ensure open MUV-253, RCPs Controlled Bleed-off MOV.
- 12 — Throttle open MUV-16 over a 30 min period to establish \approx 10 gpm/RCP.
- 13 — Operate MUV-31 to obtain desired PZR level.

BLANK PAGE

3.0 FOLLOW-UP ACTIONS (CONT'D)

ACTIONS

DETAILS

- | 3.39 — IF RCS make-up is established,
AND RCS letdown is desired,
THEN restore RCS letdown.

Refer to Enclosure 4, RC letdown recovery.

- | 3.40 — Energize plant computer
Invertor VBIT-1E.

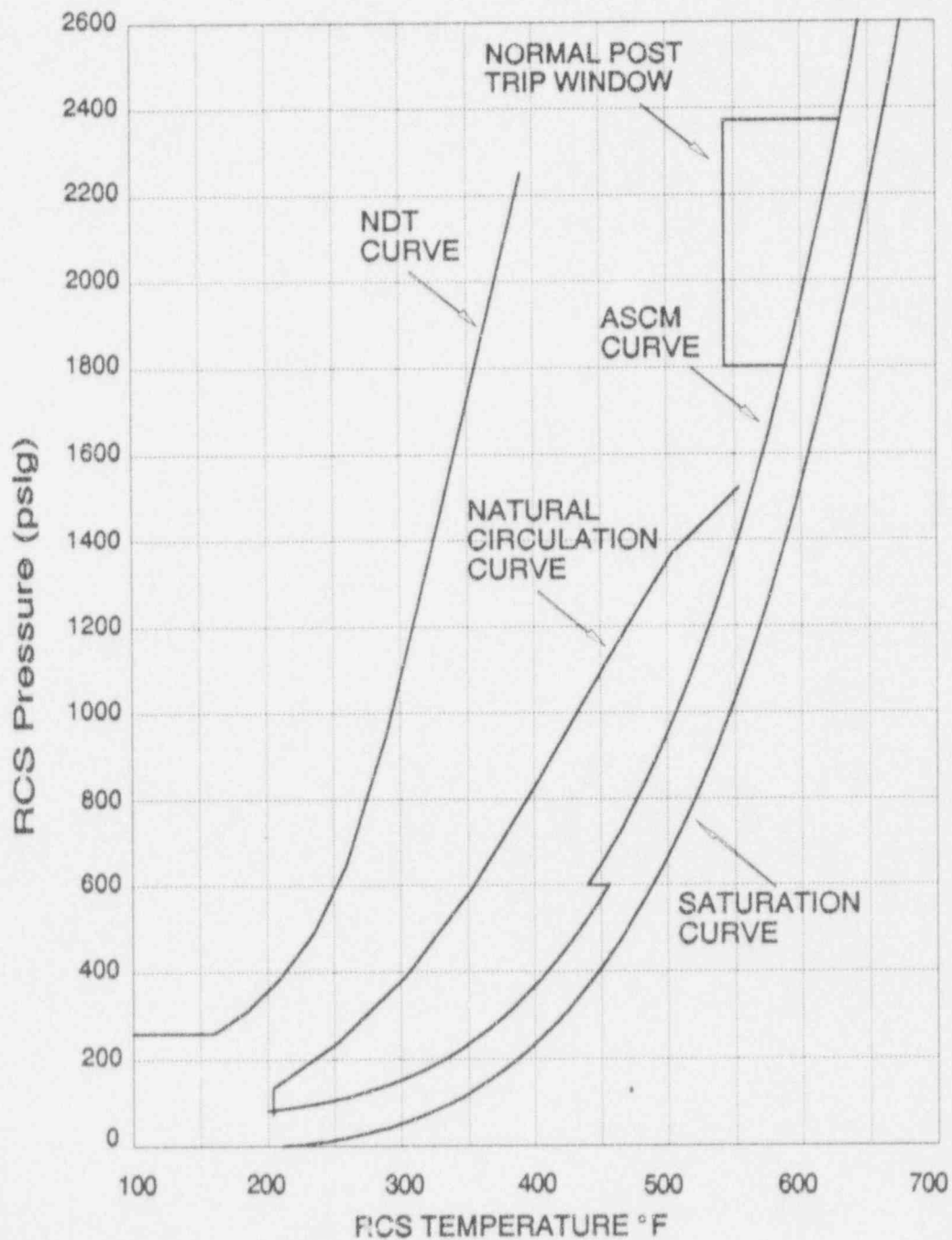
- 1 — Close Invertor "Battery Input" Bkr.
- 2 — Close Invertor "AC Output" Bkr.
- 3 — Close Invertor "AC Input" Bkr.
- 4 — Verify normal Invertor AC output voltage of approximately 120V.

- | 3.41 — GO TO EOP-2, VSSV,
beginning with step 2.1.

BLANK PAGE

Figure 1

Cooldown Curve for Natural Circulation and Forced Flow



Acceptable region is:

- o below and to the right of the NDT curve
- o above and to the left of the ASCM curve
- o above and to the left of the Natural Circulation curve if RCPs are off and cooldown rate $\geq 10^{\circ}\text{F/hr}$