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REV 06

INADEQUATE SUBCOOLING MARGIN

1.0 ENTRY CONDITIONS

IF in one of the following modes:

- Mode 3
- Mode 4

AND either of the following conditions exist:

- "SUBCOOLING MARGIN" monitor indicates inadequate SCM
- SPDS indicates inadequate SCM

THEN use this procedure.

Approved by MMPO -Date \$ 120/98 ILWILSON SIGNATURE ON FILE EOP-03 PAGE 1 of 61 ISM 9805280162 980520 PDR ADOCK 0302 05

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INFORMATION ONLY



2.0 IMMEDIATE ACTIONS

ACTIONS

DETAILS

CAUTION

Tripping all RCPs > 2 min after losing adequate SCM may cause core damage.

- 2.1 _____ IF < 2 min have elapsedsince losing adequate SCM. <u>THEN</u> trip all RCPs.
 - <u>IF</u> RCPs were <u>NOT</u> tripped within 2 min, <u>THEN</u> ensure 1 RCP remains running in each loop.

[Rule 1, Loss of SCM]



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ACTIONS

3.1 Notify personnel of plant . ____ STA conditions.

DETAILS

- ____ Plant Operators
- NSM (evaluate plant conditions for potential entry into Emergency Plan)
- 3.2 Notify PPO to CONCURRENTLY PERFORM EOP-14, Enclosure 2, PPO Post Event Actions.



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ACTIONS

DETAILS

CAUTION

Concurrently performing APs prior to Step 3.19 could result in delays in performing time critical actions.

- 3.3 -----Verify all HPI valves are open.
 - open, THEN open affected HPI valve.
- IF any Hr. ve is NOT 1 ____ IF power is lost to MUV-23. OR MUV-24. THEN select:
 - "'A' SOURCE" to "CFF"
 - "'B' SOURCE" to "ON"
 - 2 ____ IF power is lost to MUV-25. OR MUV-26, THEN select:
 - "'B' SOURCE" to "OFF"
 - "'A' SOURCE" to "ON"
 - 3 Ensure all HPI valves are open:
 - MUV-23
 - MUV-24
 - ____ MUV-25
 - MUV-26

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ACTIONS

3.4 ____ Ensure full HPI. [Rule 5, EDG Control]

DETAILS

• BWST to MUP valves open:

____ MUV-73

____ MUV-58

- ES selected MUPs and required cooling systems running:
 - ____ MUP-1A
 - ___ MUP-1B
 - ____ MUP-1C
- MUP recirc to MUT valves closed:
 - ____ MUV-53

____ MUV-257

• HPI recirc to sump valves closed:

____ MUV-543

- ____ MUV-544
- ____ MUV-545
- ____ MUV-546
- Letdown isolation valves closed:
 - ____ MUV-49

____ MUV-567

 <u>IF</u> HPI can <u>NOT</u> be established, <u>THEN</u> establish and maintain maximum possible cooldown rate.

- Fully open all ADVs and TBVs.
- <u>WHEN</u> OTSG PRESS <725 psig, <u>THEN</u> depress "< 725 PSI STM GEN PRESS EFIC ACT BYPASS" push buttons on all EFIC channels.

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ACTIONS

DETAILS

- 3.5 ____ Verify MUV-27 is closed.
 - _____IF MUV-27 is NOT closed. THEN close MUV-27
- 1 _____<u>IF_MUV-27 is de-energized,</u> <u>THEN</u> transfer ES_MCC_GAB power supply.
- 2 ____ Close MUV-27
- 3 _____IF MUV-27 fails to close, THEN isolate normal makeup and GO TO Step 3.7 in this procedure.



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ACTIONS

DETAILS

3.6 ____ Ensure HPI flow is 1 Record digital narrow range HPI flow:

A1	A2	B1	B2

2 Determine HPI differential flow:

-		-
HIGHEST	2nd HIGHEST	∆ FLOW
<u>IF</u> HPI dif > 50 gpm. <u>AND</u> all HF <u>THEN</u> perfo	fferential PI valves a orm the fo	flow is are open. llowing:
Bypass	Auto ES a	actuations.
Reset	manual ES	actuations.
Close flow 1	HPI valve ine.	on the high
— Remove HPI va	e power fro ilve.	om affected
	HIGHEST IE HPI dif > 50 gpm. AND all HE THEN perform Bypass Reset Close flow 1 Remove HPI va	HIGHEST 2nd HIGHEST IF HPI differential > 50 gpm, AND all HPI valves a THEN perform the for Bypass Auto ES a Reset manual ES Close HPI valve flow line. Remove power from the International test Remove power from the International test

3.7 ____ Ensure DHV-3 is closed.



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ACTIONS

DETAILS

- 3.8 IF RCPs are <u>NOT</u> running, 1 _____ Close MUV-18 THEN isolate seal injection.

 - $2 _ _ IF MUV-18 fails to close, \\ \hline THEN isolate seal injection$ line.
- 3.9 Ensure level in available OTSGs is at or trending towards "ISCM" setpoint.

See Table 1

- IF EFW is <u>NOT</u> available, <u>THEN</u> CONCURRENTLY PERFORM EOP-14, Enclosure 10. Alternate OTSG Feedwater Supply.
- Depress "ISCM" push buttons for EFIC channels A and B.

[Rule 3, EFW Control]

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1.8		8
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ACTIONS

3.10 _____ IF at any time, ES systems have, <u>OR</u> should have actuated, <u>THEN</u> ensure ES equipment is properly aligned.

DETAILS

- 1 Ensure applicable ES actuations:
 - ____ HPI (1500 psig RCS PRESS)
 - ____ LPI (500 psig RCS PRESS)
 - ____ RBIC (4 psig RB PRESS)
 - ____ RB Spray (30 psig RB PRESS)
- 2 Bypass or reset ES actuation:

____ Auto

____ Manual

- 3 ____ Control ES systems as required.
 - [Rule 2. HPI Control]
 - [Rule 5, EDG Control]



EUP-03	50	0	00		
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Applicable carry-over steps:

3.10 IF ES systems have OR should have actuated. THEN ensure...

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EOP-03	REV 06	PAGE 18 of 61	ISM
	and the second		

	ACTIONS	DETAILS
3.11	Monitor SCM based on Tincore. See Table 2	 Select "INCORE" on: "SUBCOOLING MARGIN" monitors SPDS
3.12	_ Ensure CC ventilation is running in emergency mode.	• CONCURRENTLY PERFORM EOP-14, Enclosure 17. Control Complex Emergency Ventilation.
3.13	<u>IE</u> at any time, BWST level is < 20 ft, <u>THEN</u> transfer ECCS pump suction to RB sump.	• PERFORM EOP-14, Enclosure 19, ECCS Suction Transfer.
3 14	IF LPI flow is > 1400 com	

3.14 <u>IF</u> LP1 flow is > 1400 gpm in any line, <u>THEN</u> GO TO EOP-08, LOCA Cooldown, beginning with Step 3.1



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App1i	cable carry-over steps:	
3.10	IF ES systems have <u>OR</u> should have actuated	I, <u>THEN</u> ensure
3.13	IF BWST level is < 20 ft. THEN transfer ECC	S pump suction

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ACTIONS

3.15 ____ IF OTSG tube leakage is causing level to rise. AND full HPI flow exists from at least 1 HPI pump. THEN control OTSG levels.

DETAILS

- Stop EFW flow to affected OTSG.
- Ensure unaffected OTSG level is progressing to "ISCM" setpoint.

See Table 1

IF in manual, THEN feed unaffected OTSG at single OTSG inadequate SCM rate.

[Rule 3, EFW Control]

- IF condenser is available, THEN notify SPO to CONCURRENTLY PERFORM EOP-14, Enclosure 6. OTSG Blowdown Lineup (if accessible).
- 3.16 ____ IF EDG A is supplying power to A ES 4160V Bus. THEN PERFORM EOP-14, Enclosure 11, EDG A Load Management.
- 3.17 ____ Verify a CC chiller is running.
 - running. THEN start a CC chiller.
- IF a CC chiller is NOT

 Notify PPO to CONCURRENTLY PERFORM EOP-14, Enclosure 18, Control Complex Chiller Startup.



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Applicable carry-over steps: 3.10 <u>IF</u> ES systems have <u>OR</u> should have actuated, <u>THEN</u> ensure... 3.13 <u>IF</u> BWST level is < 20 ft, <u>THEN</u> transfer ECCS pump suction...

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EOP-03	REV 06	PAGE 22 of 61	ISM
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ACTIONS

3.18 ____ Isolate potential RCS leak • Close HPVs: paths.

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DETAILS

____ RCV-159

- ____ RCV-160
- ____ RCV-157
- ____ RCV-158
- ____ RCV-163
 - ____ RCV-164
- Close letdown cooler inlet valves:
 - ____ MUV-38
 - ____ MUV-39
 - ____ MUV-498
- Close PZR spray valves:
 - ____ RCV-53
- ____ RCV-13
- ____ RCV-14
- <u>IF</u> HPI PORV cooling is <u>NOT</u> in progress, <u>THEN</u> close PORV and block valve:
 - ____ PORV

____ RCV-11

 Restore isolated components as required after eliminated as leakage source.

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App1i	cable carry-over steps:	
3.10	IF ES systems have OR should have actuated,	THEN ensure
3.13	IF BWST level is < 20 ft, THEN transfer ECCS	pump suction

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ACTIONS

DETAILS

- 3.19 <u>IF</u> at any time, Tincore indicates > 20°F superheat, <u>THEN</u> GO TO EOP-07, Inadequate Core Cooling, beginning with Step 3.1
- 3.20 <u>IF HPI flow can NOT</u> be established. <u>THEN</u> GO TO Step 3.27 in this procedure.
- 3.21 ____ Verify Timcore is stable or lowering.
 - <u>IF</u> Tincore is <u>NOT</u> stable, <u>OR NOT</u> lowering, <u>THEN</u> reduce OTSG PRESS to stabilize Tincore.
- IF Tincore is NOT stable, Control OTSG PRESS using TBVs or ADVs.
- 3.22 <u>IF</u> inadequate primary to secondary heat transfer exists. <u>THEN</u> GO TO EOP-04. Inadequate Heat Transfer. beginning with Step 3.1
- 3.23 ______IF excessive primary to secondary heat transfer exists, <u>THEN</u> GO TO EOP-05, Excessive Heat Transfer, beginning with Step 3.1

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Applicable carry-over steps:		
3.10 IF ES systems have OR should have actuated, THEN ensure		
3.13 IF BWST level is < 20 ft. THEN transfer ECCS pump suction		
3.19 IF Tincore indicates > 20°F superheat. THEN GO TO EOP-07		

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ACTIONS

DETAILS

3.24 ____ Verify adequate SCM exists.

See Table 2

- <u>IF</u> adequate SCM does <u>NOT</u> exist, <u>THEN</u> GO TO EOP-08, LOCA Cooldown, beginning with Step 3.1
- 3.25 _____ IF any of the following indicate > 1 gpm OTSG tube leakage:
 - ____ Chemistry sampling

____ RM-A12 (Condenser Exh)

____ RM-G26-RI (B1 MS line)

____ RM-G27-RI (A2 MS line)

____ RM-G25-RI (A1 MSV-25)

____ RM-G28-RI (B2 MSV-26)

<u>THEN</u> GO TO EOP-06, Steam Generator Tube Rupture, beginning with Step 3.1

3.26 ____ GO TO EOP-02, Vital System Status Verification, beginning with Step 3.1

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Appli	cable carry-over steps:
3.10	IF ES systems have <u>OR</u> should have actuated. <u>THEN</u> ensure
3.13	IF BWST level is < 20 ft. THEN transfer ECCS pump suction
3.19	IF Tincore indicates > 20°F superheat. THEN GO TO EOP-07

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parameters interval and the second second second second second second second	And shows a service of the register sectors of the sector of the		

ACTIONS

DETAILS

	<u>ST/</u>	ITUS	
	Adequate SCM does not exist.		
	HPI flow is not available		
Notice Contract of States of States			
.27	_ <u>IF</u> at any time, either OTSG PRESS is < 725 psig, THEN bypass FFIC isolation	• Depress "< 725 PSI STM EFIC ACT BYPASS" push b	GEN PRESS uttons:
	actuations.	Channel A	
		Channel B	
		Channel C	
		Channel D	
	N	<u>)TE</u>	
Max	<u>N</u> ximizing RCS cooldown may result ceptable when maximum EFW or AFW	<u>TE</u> in OTSG levels lowering. flow exists.	This is
Max acc	<u>M</u> ximizing RCS cooldown may result ceptable when maximum EFW or AFW Establish and maintain maximum possible cooldown	 ITE in OTSG levels lowering. flow exists. Reduce OTSG PRESS as low possible: 	This is
Ma) acc	NK ximizing RCS cooldown may result ceptable when maximum EFW or AFW _ Establish and maintain maximum possible cooldown rate.	 ITE in OTSG levels lowering. flow exists. Reduce OTSG PRESS as low possible: Open TBVs 	This is
Ma) acc	M ximizing RCS cooldown may result ceptable when maximum EFW or AFW _ Establish and maintain maximum possible cooldown rate.	 In OTSG levels lowering. flow exists. Reduce OTSG PRESS as low possible: Open TBVs Open ADVs 	This is
Ma) acc	<pre>Ximizing RCS cooldown may result ceptable when maximum EFW or AFW - Establish and maintain maximum possible cooldown rate. IE at any time, EFP-2 is running, <u>THEN CONCURRENTLY PERFORM</u> EOP-14, Enclosure 7, EFP-2 Management.</pre>	<pre>ITE in OTSG levels lowering. flow exists. Reduce OTSG PRESS as low possible: Open TBVs Open ADVs</pre>	This is

Applicable carry-owsr steps:

3.10 IE ES systems have OR should have actuated. THEN ensure ...

3.13 IF BWST level is < 20 ft. THEN transfer ECCS pump suction...

3.19 IF Timcore indicates > 20°F superheat, THEN GO TO EOP-07...

3.27 IF either OTSG PRESS is < 725 psig, THEN bypass EFIC isolation...

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM. ...

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ACTIONS

DETAILS

- 3.30 ____ Ensure continuous efforts are in progress to establish HPI flow.
- 3.31 _____IF at any time, RCS PRESS is > 2400 psig, THEN reduce RCS PRESS based on OTSG PRESS.
- 1 ____ Open RCV-11
 - 2 ____ Cycle PORV to obtain 50°F (40 to 60°F) primary to secondary delta TEMP while maintaining RCS PRESS ≥ 1000 psig.

See Figure 3

- 3 ____ IF PORV fails to close. THEN close RCV-11
- 3.32 ____ Verify CFT isolation valves are open.

 CFV-5
 CFV-6

- <u>IE CFT isolation valves</u> are <u>NOT</u> open, <u>THEN</u> open CFT isolation valves (if accessible).
- 1 Notify PPO to unlock and close CFT isolation valve Bkrs (119 ft AB):
 - ___ ES MCC 3AB-6B "CFV-5, A CFT Iso"
 - ____ES MCC 3AB-6C "CFV-5, B CFT Iso"
- 2 <u>WHEN</u> CFT isolation valve Bkrs are closed. <u>THEN</u> open CFT isolation valves:
 - ____ CFV-5
 - ____ CFV-6



Applicable carry over steps:

3.10 IF ES systems have <u>OR</u> should have actuated. <u>THEN</u> ensure...

3.13 IF BWST level is < 20 ft. THEN transfer ECCS pump suction...

3.19 IF Tincore indicates > 20°F superheat, THEN GO TO EOP-07...

3.27 IF either OTSG PRESS is < 725 psig, THEN bypass EFIC isolation..

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM. ...

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ACTIONS

DETAILS

- 3.33 _____ IF at any time. HPI is _____ TBVs closed established, THEN close TBVs and ADVs • ____ ADVs closed and GO TO Step 3.1 in this procedure.
- 3.34 _____ WHEN RCS PRESS is _____ CFT levels lowering < 600 psig, THEN verify CFT discharge. • ____ CFT PRESS lowers with RCS PRESS
- 3.35 ____WHEN RCS PRESS < 500 psig. THEN ensure proper LPI actuation.

- 1 Ensure BWST to DHP valves are open:
 - DHV-34
 - DHV-35
- 2 Ensure LPI injection valves are open:
 - DHV-5
 - ___ DHV-6
- 3 Ensure LPI pumps and required cooling pumps are operating:

DHP-1A	DHP-1B
RWP-3A	RWP-3B
DCP-1A	DCP-1B

- 4 Ensure LPI control valves are in "AUTO" and set for 3000 gpm:
 - DHV-110

DHV-111



Applicable carry-over steps:

3.10 IF ES systems have OR should have actuated. THEN ensure...

3.13 IF BWST level is < 20 ft, THEN transfer ECCS pump suction...

3.19 IF Timcore indicates > 20°F superheat, THEN GO TO EOP-07...

3.27 IF either OTSG PRESS is < 725 psig. THEN bypass EFIC isolation...

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM. ...

3.33 IF HPI is established, THEN close TBVs and ADVs and ...

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ACTIONS

3.36 <u>WHEN</u> RCS PRESS is < 200 psig, <u>THEN</u> open PORV and HPVs. DETAILS

1 ____ Open RCV-11

2 ____ Open PORV.

3 Open HPV::

PZR	RCV-159
	RCV-160
Loop A	RCV-157
	RCV-158
Loop B	RCV-163
	RCV-164

- 3.37 <u>IF</u> at any time. LPI flow is > 1400 gpm in both injection lines, <u>THEN</u> close CFT isolation valves (if accessible).
- 1 Notify PPO to unlock and close CFT isolation valve Bkrs (119 ft AB):
 - ____ ES MCC 3AB-68 "CFV-5, A CFT Iso"
 - ____ ES MCC 3AB-6C "CFV-6, B CFT Iso"
- 2 <u>WHEN</u> CFT isolation valve Bkrs are closed. <u>THEN</u> close CFT isolation valves:

____ CFV-5

____ CFV-6

3 Notify PPO to open CFT isolation valve Bkrs:

___ ES MCC 3AB-6B "CFV-5, A CFT Iso"

____ES MCC 3AB-6C "CFV-6, B CFT Iso"



Applicable carry-over steps:

3.10 IF ES systems have <u>OR</u> should have actuated, <u>THEN</u> ensure...

3.13 IF BWST level is < 20 ft, THEN transfer ECCS pump suction...

3.19 IF Tincore indicates > 20°F superheat, THEN GO TO EOP-07...

3.27 IF either OTSG PRESS is < 725 psig, THEN bypass EFIC isolation..

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM. ...

3.33 IF HPI is established. THEN close TBVs and ADVs and ...

3.37 IF LPI flow is > 1400 gpm in both injection lines. THEN close CFT...

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ACTIONS

DETAILS

3.38 <u>WHEN</u> adequate SCM. <u>AND</u> LPI flow exists, <u>THEN</u> continue in this procedure.

See Table 2

- 3.39 ____ Close CFT isolation valves (if accessible).
- 1 Notify PPO to unlock and close CFT isolation valve Bkrs (119 ft AB):
 - ___ ES MCC 3AB-6B "CFV-5, A CFT Iso"
 - ____ ES MCC 3AB-6C "CFV-6, B CFT Iso"
- 2 WHEN CFT isolation valve Bkrs are closed. THEN close CFT isolation valves:
 - ____ CFV-5
 - ____ CFV-6
- 3 Notify PPO to open CFT isolation valve Bkrs:
 - ____ ES MCC 3AB-6B "CFV-5, A CFT Iso"
 - ____ ES MCC 3AB-6C "CFV-6, B CFT Iso"
- 3.40 ____ Verify total LPI flow is < 2000 gpm.
 - IF total LPI flow is NOT < 2000 gpm, THEN GO TO Step 3.58 in this procedure.



Applicable carry-over steps:

3.10 IF ES systems have OR should have actuated, "HEN ensure ...

3.13 IF BWST level is < 20 ft. THEN transfer ECCS pump suction...

3.19 IF Tincers indicates > 20°F superheat. THEN GO TO EOP-07...

3.27 IF either OTSG PRESS is < 725 psig, THEN bypass EFIC isolation...

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM ...

3.33 IF HPI is established. THEN close TBVs and ADVs and ...

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ACTIONS

3.41 ____ Ensure only 1 LPI train is in operation.

DETAILS

is <u>IF</u> both LPI pumps are running, <u>THEN</u> stop one LPI pump:

___ DHP-1A

___ DHP-1B

- 3.42 ____ Verify idle LPi pump is available for DHR.
 - <u>IF</u> idle LPI pump is <u>NOT</u> available for DHR. <u>THEN</u> GO TO Step 3.58 in this procedure.
- 3.43 <u>IF DHP-1A is running.</u> <u>THEN GO TO Step 3.52 in this procedure.</u>



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Applicable carry over steps:

3.10 IF ES systems have OR should have actuated. THEN ensure...

3.13 IF BWST level is < 20 ft. THEN transfer ECCS pump suction...

3.27 IF either OTSG PRESS is < 725 psig, THEN bypass EFIC isolation.

3.29 IF EFP-2 is running, THEN CONCURRENTLY PERFORM. ...

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ACTIONS

DETAILS

STATUS

- B LPI pump is providing RCS makeup.
- A train is available for DHR.
- 3.44 <u>WHEN all</u> of the following exist:
 - ____ PZR level > 80 in
 - ____ RCS TEMP < 280°F
 - RCS PRESS < 215 psig on RCS low range
 - ____ Adequate SCM

See Table 2

THEN continue in this procedure.

- 3.45 ____ Isolate BSP-1A from DH drop line.
- 1 ____ Ensure BSP-1A is stopped.
- 2 _____ Notify PPO to open "BSP-1A DC Knife Switch" for 4160V ES Bus 3A-8 (A ES 4160V SWGR Room).
- 3 ____ Select BSV-3 to "MAN" and closed.



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App1	cable carry-over steps:	
3.10	IF ES systems have OR should have actuated,	THEN ensure
3.13	IE BWST level is < 20 ft. THEN transfer ECCS	pump suction

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ACTIONS

DETAILS

- 3.46 ____ Align DHP-1A for DHR. 1 Ensure the following valves are closed:
 - DHV-8
 - DHV-11
 - DHV-34
 - DHV-42
 - ____ DHV-40
 - 2 Open the following valves:
 - DHV-39
 - DHV-5
- 3.47 ____ Align DH drop line for DHR 1 ____ Open DHV-41 operation. 2 ___ Open DHV-3 3 ____ Open DHV-4
- cooling systems.
- 3.48 ____ Start DHP-1A and required 1 ____ Ensure DHV-110 is selected to "AUTO" and 3000 gpm.
 - 2 Start A DH train:
 - DCP-1A
 - RWP-3A
 - ___ DHP-1A
 - 3 ____ Ensure DHV-110 is controlling.

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Appli	Applicable carry-over steps:			
3.10	IE ES systems have OR should have actuated.	THEN ensure		
3.13	IF BWST level is < 20 ft. THEN transfer ECCS	pump suction		

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ACTIONS

DETAILS

- 3.49 _____IF high PRESS Aux spray is 1 _____Open DHV-91 <u>NOT</u> aligned, <u>AND</u> Aux spray is required, 2 _____Throttle RCV-53 to control RCS <u>THEN</u> establish Aux spray. PRESS.
- 3.50 <u>WHEN</u> DH system is providing core cooling. <u>THEN</u> stop OTSG cooling.
- 1 ____ Depress "MANUAL PERMISSIVE" push buttons on EFIC channels A and B.
- 2 Close EFW control valves:
 - ____ EFV-58
 - ____ EFV-57
 - ____ EFV-56
 - ____ EFV-55
- 3 ___ Stop EFP-1
- 4 Close EFP-2 steam supply valves:
 - ASV-204
 - ___ ASV-5
- 5 ____ Stop FWP-7
- 6 _____ Ensure TBVs and ADVs are closed.
- 3.51 ____ GO TO Step 3.58 in this procedure.



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Applicable carry-over steps:			
3.10	IF ES systems have OR should have actuated,	THEN ensure	
3.13	IF BWST level is < 20 ft, THEN transfer ECCS	pump suction	

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DETAILS

STATUS

- A LPI pump is providing RCS makeup.
- B train is available for DHR.
- 3.52 <u>WHEN all</u> of the following exist:
 - ____ PZR level > 80 in
 - ____ RCS TEMP < 280°F
 - RCS PRESS < 215 psig on RCS low range
 - ____ Adequate SCM
 - See Table 2

THEN continue in this procedure.

- 3.53 ____ Isolate BSP-1B from DH drop line.
- 1 ____ Ensure BSP-1B is stopped.
- 2 ____ Notify PPO to open "BSP-1B DC Knife Switch" for 4160V ES Bus 3B-7 (B ES 4160V SWGR Room).
- 3 _____ Select BSV-4 to "MAN" and closed.

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Applicable carry-over steps:				
3.10 IF ES systems have OR should have actuated.	THEN ensure			
3.13 IF BWST level is < 20 ft, THEN transfer ECCS	pump suction			

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ACTIONS

DETAILS

3.54 ____ Align DHP-1B for DHR.

1 Ensure the following valves are closed:

____ DHV-7

- ____ DHV-12
- ____ DHV-35
- ____ DHV-43
- ____ DHV-39

2 Open the following valves:

- ____ DHV-40
- ____ DHV-6

3.55 _____ Align DH drop line for DHR operation.

1	 Open	DHV-41
2	 Open	DHV-3

3 ___ Open DHV-4



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Applicable carry-over steps:				
3.10	IF ES systems have OR should have actuated,	THEN ensure		
3.13	IF BWST level is < 20 ft, THEN transfer ECCS	pump suction		

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ACTIONS

DETAILS

- 3.56 ____ Start DHP-1B and required cooling systems.
- 1 ____ Ensure DHV-111 is selected to "AUTO" and 3000 gpm.
- 2 Start B DH train:
 - ___ DCP-1B
 - ____ RWP-3B
 - ____ DHP-1B
- 3 ____ Ensure DHV-111 is controlling.
- 3.57 <u>WHEN</u> DH system is providing core cooling. <u>THEN</u> stop OTSG cooling.
- 1 ____ Depress "MANUAL PERMISSIVE" push buttons on EFIC channels A and B.
- 2 Close EFW control valves:
 - ____ EFV-58
 - ____ EFV-57
 - ____ EFV-56
 - ___ EFV-55
- 3 ____ Stop EFP-1
- 4 Close EFP-2 steam supply valves:
 - ____ ASV-204
 - ____ ASV-5
- 5 ____ Stop FWP-7
- 6 ____ Ensure TBVs and ADVs are closed.

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	<i>.</i>	

Appli	cable carry-over steps:	
3.10	IF ES systems have OR should have actuated.	THEN ensure
3.13	IF BWST level is < 20 ft. THEN transfer ECCS	pump suction

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ACTIONS

DETAILS

- 3.58 ______ IF at any time, all of the 1 Ensure BSPs are stopped: following criteria are met:
 - BSPs running \geq 5 hrs
 - ___ RB PRESS < 10 psig
 - RB PRESS stable or lowering
 - _ RB atmosphere < 13 µCi/cc I¹³¹
 - TSC has approved BS _____BSV-3 icrmination.
 - THEN stop BSPs.

- BSP-1A BSP-1B
- 2 Select BSVs to "MAN" and closed:
 - BSV-3
 - ____BSV-4
- 3 Select BSVs to "AUTO":

 - BSV-4

3.59 ____ Throttle LPI to maintain minimum adequate SCM.

See Table 2

[Rule 4, PTS]

3.60 ___ Contact TSC for assistance.

- DHV-110 DHV-111
- Request assistance for the following:
 - ___ Raising LPI flow
 - ____ Restoring HPI flow
 - ____ RB H₂ control
- 3.61 ____ WHEN ECCS suction transfer is complete. THEN EXIT this procedure.

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4.0 FIGURE 1 RCS PRESS AND TEMP (WIDE RANGE)



Note 1: Use Tc for NDT limit when no Tc anomaly exists. Use Tincore for all other RCS TEMP.

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4.0 FIGURE 2 RCS PRESS AND TEMP (LOW RANGE)



Note 1: Use Tc for NDT limit when no Tc anomaly exists. Use Tincore for all other RCS TEMP.

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4.0 FIGURE 3 RCS PRESS TO ESTABLISH 50°F PRIMARY TO SECONDARY DELTA TEMP



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Table 1: Required OTSG levels

"LLL"	> 20 in	≥ 1 RCP running with adequate SCM
"NAT CIRC"	> 70%	No RCPs running with adequate SCM
"ISCM"	> 90%	Inadequate SCM

Note: See Figures 1 and 2 when Tsat margin monitors and SPDS are unavailable.

RCS	SCM
> 1500 psig	≥ 30°F
≤ 1500 to > 350 psig	≥ 50°F
≤ 350 psig	SPDS
≤ 160°F	N/A

Table 2: Adequate SCM





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