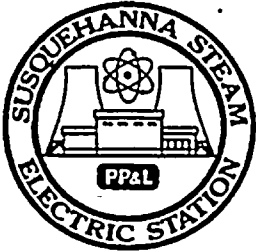


PROCEDURE COVER SHEET

	NUCLEAR DEPARTMENT PROCEDURE	ON-200-009 Revision 3 Page 1 of 28
	CONTROL ROOM EVACUATION	
EFFECTIVE DATE: <u>4-18-95</u> PERIODIC REVIEW FREQUENCY: <u>2 YEAR</u> PERIODIC REVIEW DUE DATE: <u>6/30/96</u> REVISED PERIODIC REVIEW DUE DATE: _____		
PROCEDURE TYPE: QA Program (<input checked="" type="checkbox"/>) YES (<input type="checkbox"/>) NO Plant Procedure (<input checked="" type="checkbox"/>) YES (<input type="checkbox"/>) NO		
REVIEW METHOD: (<input type="checkbox"/>) Alternate (<input checked="" type="checkbox"/>) Expedited (<input type="checkbox"/>) PORC (<input type="checkbox"/>) ERC		
Prepared by <u>Craig J. Miller</u> Reviewed by <u>[Signature]</u> Supervisor Recommended <u>[Signature]</u> Functional Unit Manager <u>N/A</u> PORC Committee Meeting No. <u>N/A</u> ERC Committee Meeting No.	Date <u>4/12/95</u> Date <u>4/13/95</u> Date <u>4/13/95</u> Date _____ Date _____	
Approved by <u>[Signature]</u>	Date <u>4/15/95</u>	

FORM NDAP-QA-0002-1, Rev. 1, Page 1 of 1

9505260328 950522
 PDR ADOCK 05000387
 F PDR

1 PROCEDURE NO. 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
 ON-200-009
 3

1.0 SYMPTOMS AND OBSERVATIONS

Conditions exist which require Control Room EVACUATION:

- 1.1 Dense SMOKE
- 1.2 Extreme HEAT
- 1.3 Hazardous GAS which induces difficulty in breathing
- 1.4 Direction from Shift Supervision

2.0 AUTOMATIC ACTIONS

None

3.0 IMMEDIATE OPERATOR ACTIONS

CONFIRM

NOTE: . If Control Room evacuation is anticipated, NOTIFY
. Security to provide access to BOTH Units' Remote
Shutdown Panels.

3.1 As time permits, PERFORM following prior to Control Room
evacuation:

- 3.1.1 PLACE REACTOR MODE SWITCH HS-C72A-2S01 to SHUTDOWN. _____
- 3.1.2 ENSURE all Control Rods INSERTED. _____
- 3.1.3 INSERT SRM's and IRM's. _____
- 3.1.4 CLOSE MSIV's and MSL drains. _____
- 3.1.5 CLOSE RFP A,B&C DSCH ISO HV-20603A,B&C. _____
- 3.1.6 PLACE FW LOW LOAD LIC-C32-2R602 in AUTO. _____
- 3.1.7 OPEN HPCI TEST LINE TO CST HV-255-F011. _____
- 3.1.8 TAKE two (2) sets of security keys from Shift Supervisor key cabinet to gain entrance into Reactor Building. (Unit Supervisor only) _____

3.2 EVACUATE Main Control Room. _____

NOTE: Attachment D contains lists of all functions performed by placing transfer switches to EMERG position.

CONFIRM

4.0 SUBSEQUENT OPERATOR ACTIONS

NOTE: All indications and controls are from 2C201 unless otherwise indicated.

4.1 REFER to Attachment C for sound powered phone locations, if required to establish communication between Remote Shutdown Panel and various locations in the plant. _____

NOTE: Unit One Remote Shutdown Panel Room phone extension is 3334.

4.2 If Control Room evacuated prior to completing immediate operator actions, PERFORM locally:

(1)

4.2.1 OPEN following breakers to Scram Reactor and isolate Inboard and Outboard MSIV's and Main Steam Line Drains:

NOTE: A screwdriver has been stored in Sound Powered Phone Headset Storage Box JP2204 (by A RPS Panel), if needed to open RPS Panel.

a. 2Y201A Bkr CB2A in RPS power distribution panel (32-749) _____

b. 2Y201B Bkr CB8B in RPS power distribution panel (32-749) _____

4.2.2 MANUALLY CLOSE following valves:

a. RFP A Dsch Iso HV-20603A _____

b. RFP B Dsch Iso HV-20603B _____

c. RFP C Dsch Iso HV-20603C _____

CONFIRM

4.3 Upon arrival at Remote Shutdown Panel, PERFORM following to determine plant status:

4.3.1 Transfer control and to Remote Shutdown Panel as follows, OBSERVING green light ILLUMINATES for each transfer switch when placed in EMERG position:

- a. PLACE INSTR TRANSFER SWITCH A INSTR SET 1, 2 HSS-24901A in EMERG position. _____
- b. Transfer CONTROL TRANSFER SWITCH A HSS-24902A as follows:
 - (1) ENSURE RCIC BARO CDSR COND PUMP 2P220 aligned to AUTO. _____
 - (2) PLACE CONTROL TRANSFER SWITCH A HSS-24902A in EMERG position. _____
- c. Transfer CONTROL TRANSFER SWITCH M HSS-24902B as follows:
 - (1) ENSURE TURB EXH TO SUPP POOL HV-249-F059 aligned to OPEN. _____
 - (2) ENSURE RCIC BARO CDSR VACUUM PP 2P219 aligned to STOP. _____
 - (3) PLACE CONTROL TRANSFER SWITCH M HSS-24902B in EMERG position. _____
- d. Transfer CONTROL TRANSFER SWITCH B HSS-24903A as follows:
 - (1) ENSURE VAC PP DSCH TO SUPP POOL HV-249-F060 aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH B HSS-24903A in EMERG position. _____
- e. PLACE CONTROL TRANSFER SWITCH N HSS-24903B in EMERG position. _____
- f. PLACE CONTROL TRANSFER SWITCH C HSS-24904A in EMERG position. _____

CONFIRM

- g. PLACE CONTROL TRANSFER SWITCH D
HSS-24905A in EMERG position. _____
- h. PLACE INSTR TRANSFER SWITCH B
INSTR SET 3, 4 HSS-25110A in
EMERG position. _____
- i. PLACE CONTROL TRANSFER SWITCH E
HSS-25111A in EMERG position. _____
- j. Transfer CONTROL TRANSFER SWITCH R
HSS-25111B as follows:
 - (1) ENSURE INSTR GAS CMP OB SUCT ISO
SV-22605 aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH R
HSS-25111B in EMERG position. _____
- k. PLACE INSTR TRANSFER SW C INSTR SET 5
HSS-25118A in EMERG position. _____
- l. PLACE CONTROL TRANSFER SWITCH F
HSS-25112A in EMERG position. _____
- m. PLACE CONTROL TRANSFER SWITCH S
HSS-25112B in EMERG position. _____
- n. PLACE CONTROL TRANSFER SWITCH G
HSS-25113A in EMERG position. _____
- o. Transfer CONTROL TRANSFER SWITCH T
HSS-25113B as follows:
 - (1) ENSURE SHUTDOWN CLG SUCT
HV-251-F006A aligned to CLOSE. _____
 - (2) ENSURE HEAD SPRAY SHUTOFF
HV-25112A aligned to CLOSE. _____
 - (3) ENSURE RHR LOOP A CROSSTIE
HV-251-F010A aligned to CLOSE. _____
 - (4) PLACE CONTROL TRANSFER SWITCH T
HSS-25113B in EMERG position. _____



CONFIRM

NOTE: Indication for RHR LOOP A CROSSTIE HV-251-F010A will not illuminate due to supply breaker being open.

p. Transfer CONTROL TRANSFER SWITCH H HSS-25114A as follows:

(1) ENSURE RHR PUMP A SUCT HV-251-F004A aligned to OPEN. _____

(2) PLACE CONTROL TRANSFER SWITCH H HSS-25114A in EMERG position. _____

q. PLACE CONTROL TRANSFER SWITCH U HSS-25114B in EMERG position. _____

r. PLACE CONTROL TRANSFER SWITCH J HSS-25115A in EMERG position. _____

s. Transfer CONTROL TRANSFER SWITCH V HSS-25115B as follows:

(1) ENSURE HX A SHELL SIDE INLET HV-251-F047A aligned to OPEN. _____

(2) PLACE CONTROL TRANSFER SWITCH V HSS-25115B in EMERG position. _____

t. Transfer CONTROL TRANSFER SWITCH K HSS-25116A as follows:

(1) ENSURE HX A SHELL SIDE OUTLET HV-251-F003A aligned to OPEN. _____

(2) PLACE CONTROL TRANSFER SWITCH K HSS-25116A in EMERG position. _____

u. Transfer CONTROL TRANSFER SWITCH W HSS-25116B as follows:

(1) ENSURE INSTR GAS TO CONTN ISO SV-22651 aligned to OPEN. _____

(2) PLACE CONTROL TRANSFER SWITCH W HSS-25116B in EMERG position. _____

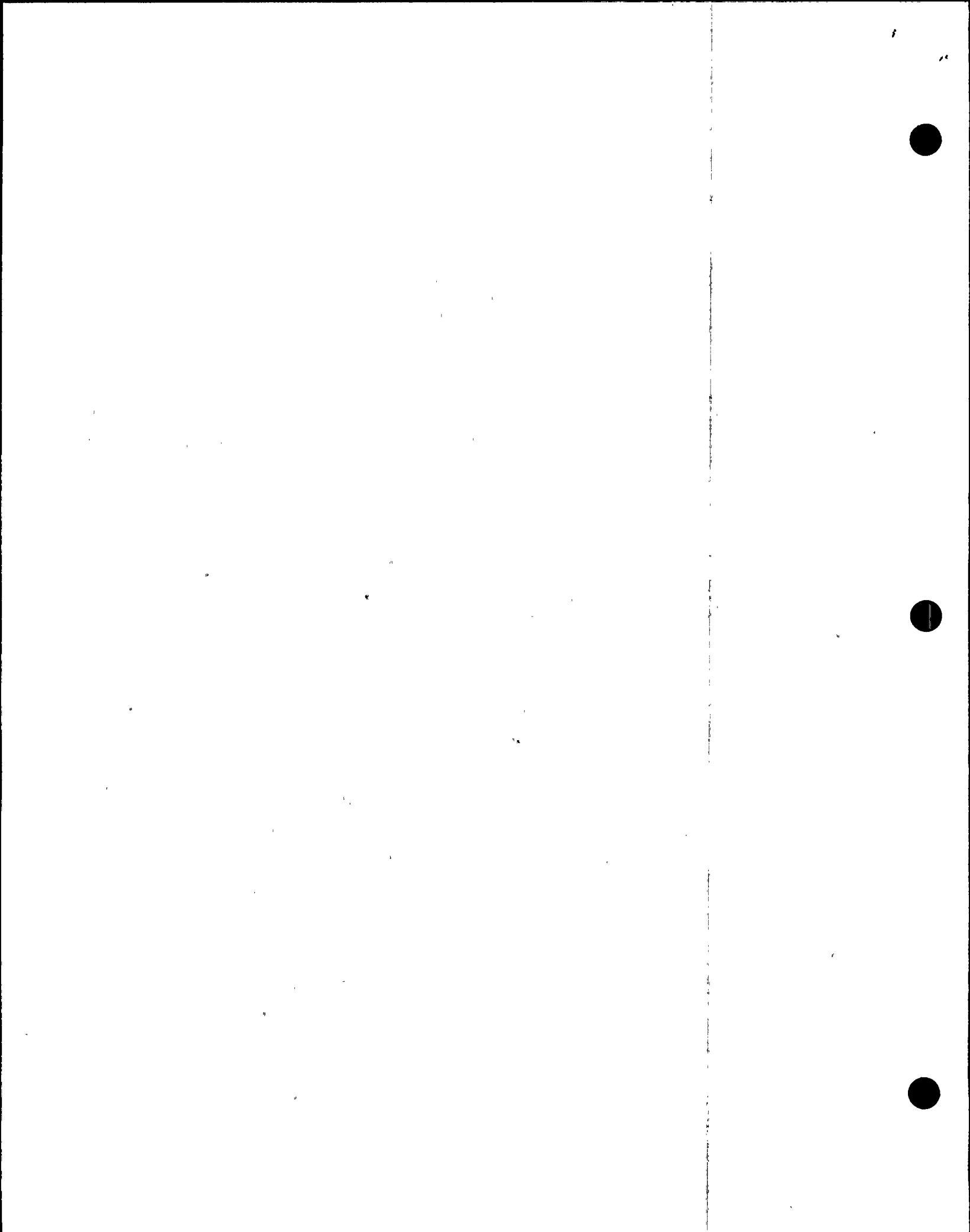
v. PLACE CONTROL TRANSFER SWITCH L HSS-25117A in EMERG position. _____

CONFIRM

- w. PLACE CONTROL TRANSFER SWITCH X HSS-25117B in EMERG position. _____
- 4.3.2 ENSURE Main Steam Lines ISOLATED by either:
 - a. OBSERVING IB MSIV's indicate CLOSED. _____
 - b. LOCALLY OBSERVING OB MSIV's CLOSED. _____
- 4.3.3 MONITOR available parameters to determine plant status. _____
- 4.3.4 NOTIFY I&C to install:
 - a. Temporary level indication in accordance with IC-280-004, Reactor Range Level Measurement at Rack 2C005, LT-B21-2N027.
 - b. Temporary reactor coolant temperature indication in accordance with IC-249-005, Installation and Removal of Temporary RTD Readers for Local Monitoring of RHR Heat Exchanger A Inlet (TE-E11-1N004A) and Outlet (TE-E11-1N027A) Temperatures.

NOTE: Transferring control switch Y HSS-24454 to EMERG will cause RWCU IB ISO HV-244-F001 to close. Opening breaker 18 in 2Y219 will de-energize SV-24433 closing HV-244F033.

- (²) 4.4 If there is indication of RWCU piping leak or indication of flow being diverted to condenser or Radwaste through RWCU PERFORM following:
 - 4.4.1 PLACE control transfer switch Y HSS-24454 to EMERG AND _____
 - 4.4.2 OBSERVE green light ILLUMINATED. _____
 - 4.4.3 OPEN breaker 2Y219-018. _____
- 4.5 If Control Room evacuation was because of fire:
 - (¹) 4.5.1 Perform the following within 2 hours:
 - a. OPERATE Control Structure HVAC in accordance with ON-030-001, Local Operation of Control Structure HVAC. _____



CONFIRM

- b. SECURE any battery equalizing charges in progress. _____
- (¹) 4.5.2 PERFORM DC-OP-001, Post Fire Recovery Actions within 8 hours. _____

CAUTION

RHR PUMP 2P202B MAY SPURIOUSLY START PREVENTING UNIT 1 FROM RUNNING RHR PUMP 1P202B WHEN REQUIRED.

- (¹) 4.5.3 If RHR Pump 2P202B must be tripped, PERFORM the following at 2A20202:
 - a. PLACE Lateral Control Switch to HANDLE OUT position. _____
 - b. PLACE Lateral Control Switch to OPEN. _____

4.6 To control reactor pressure PERFORM following:

- (¹) NOTE: Relief mode of SRV's A, B, and C does not auto initiate when applicable Control Transfer Switches are in EMERG position, however, safety function is always operable. Also when SRV Transfer Switches are in EMERG spurious auto actuation is prevented due to a Control Room fire.

4.6.1 ENSURE following valves OPEN:

- a. INSTR GAS TO CONTN ISO SV-22651 _____
- b. INSTR GAS CMP OB SUCT ISO SV-22605 _____

CONFIRM

CAUTION

LEVEL 1 (-129") OR HIGH DRYWELL PRESSURE (1.72 PSIG) LOCA ISOLATION SIGNAL IS DEFEATED FOR CIG VALVES WHEN CONTROLLED FROM THE REMOTE SHUTDOWN PANEL.

NOTE: Placing transfer switch R, HSS-25111B, in EMERG causes Instr Gas CMP OB suction to cycle possibly tripping CIG compressors on low suction pressure.

4.6.2 If CIG Compressors tripped, RESET as follows at 2C239:

- a. DEPRESS Logic Reset push button. _____
- b. ENSURE CIG Compressor STARTS. _____

4.6.3 OPERATE SRV's as follows:

CAUTION

IF RPV PRESSURE DROPS BELOW 650 PSIG, CONDENSATE PUMPS WILL INJECT WHEN RPV LEVEL < +35 INCHES.

CAUTION

WIDE RANGE LEVEL INDICATION BECOMES LESS ACCURATE AS RPV PRESSURE DECREASES.

- (¹)
- a. OPEN SRV's A, B, and C as needed. _____

NOTE: Keys to operate SRV's are located in sealed Pink sound powered phone storage box, labeled "JP2205, JP2401, JP1215," inside the Remote Shutdown Panel Room.

- b. If pneumatic supply to SRV's A, B, and C not available, OPERATE SRV's G, J, K, L, M, or N (ADS valves) individually from upper (lower) relay room Panel 2C631 (2C628) using keylock switches. _____
- c. REFER to Attachment A for RPV Pressure/Temperature Correlation. _____

CONFIRM _____

- 4.6.4 PLOT cooldown in accordance with Attachment A and B. _____

CAUTION

RCIC WILL NOT TRIP ON HIGH VESSEL LEVEL +54".

- a. When desired to place Shutdown Cooling in service, RAISE RPV level to 90 - 100 inches. _____
- b. When reactor pressure < 98 psig, ALIGN RHR System Loop A for Shutdown Cooling Mode in accordance with OP-249-002, RHR operation in Shutdown Cooling Mode. _____

4.7 Diesel Generator Local Start

- 4.7.1 If required, PERFORM ON-204-001 Unit 2 Response to Loss of All Offsite Power. _____
- 4.7.2 If A Loop of ESW not available or cannot be placed in service, place B Loop ESW in service from Unit 1 Remote Shutdown Panel 1C201 in accordance with OP-054-001, Emergency Service Water system (ESW). _____
- 4.7.3 If required, START Diesel Generators A(B)(C)(D)(E) locally at OC521A(B)(C)(D)(E) in accordance with OP-024-001, Diesel Generators. _____

4.8 Re-energizing a 4.16KV ESS bus

- 4.8.1 If the Diesel Generator breaker to the 4.16KV ESS bus fails to close, PERFORM following at 2A20104 (2A20204) (2A20304)(2A20404): _____
- a. ENSURE breaker control power in breaker cubicle available by CLOSING DC Ctl Power knife switch in 2A20104 (2A20204)(2A20304)(2A20404). _____
- b. ENSURE effects of breaker operation and associated interlocks have been evaluated. _____

CONFIRM

c. ENSURE Closing Spring Charging Motor operates. _____

d. When closing spring is charged, OPERATE breaker as desired, using lateral control switch. _____

4.9 DISPATCH Operators ENSURE following:

4.9.1 Main Turbine TRIPPED. _____

4.9.2 Generator TRIPPED by observing output breakers OPEN. _____

4.9.3 At 13.8 KV Switchgear, auxiliary buses transferred to Startup Bus 20 indicated by Breakers 2A10101 and 2A10201 OPEN and Breakers 2A10104 and 2A10204 CLOSED with voltage on bus. _____

4.9.4 Main Suction Pump and Turning Gear Oil Pump auto START. _____

4.9.5 Lift pumps auto START. _____

4.9.6 Turning Gear ENGAGES Main Turbine. _____

4.9.7 Reactor Feed Pump Turbines TRIP. _____

4.9.8 Reactor Recirculation Pumps 2P401A and 2P401B remain at minimum speed at Servo Controller 2S137A(B) as follows:

NOTE: Reactor Recirculation Pumps 2A and 2B should be at Limiter No. 1 (30%) due to low feedwater flow at this point.

a. REMOVE top cover. _____

b. PLACE control power switch OFF. _____

4.10 When Control Room becomes available, PROCEED to OP-200-001 to return control to Control Room from Remote Shutdown Panel. _____

5.0 REFERENCES

- 5.1 FSAR 7.4.1.4
- 5.2 E-153 Sh 47, 54-62, 81-86, 89, 91-101, 103
- 5.3 E-185 Sh 19, 24-27
- 5.4 J-451 Sh 4-6
- 5.5 DC-OP-001 Post Fire Recovery Actions
- (¹) 5.6 Susquehanna Fire Protection Review Report
- (²) 5.7 PLI-74583 App R Hot Shorts Procedure Change Request
- 5.8 E-690 Appendix "R" Safe Shutdown Manual Actions List

6.0 DISCUSSION

This procedure assumes EOP's are entered and providing directions for parameter control and is designed to shut down the plant from outside the Control Room by using the Remote Shutdown Panel and manual operations in the plant. Since the Control Room will be evacuated, Unit 1 will be implementing ON-100-009 at the same time. Transfer of control to the Remote Shutdown Panel bypasses Main Control Room devices and transfers component's control power to alternate supply.

The operation of systems and equipment needed for safe shutdown are those systems necessary to perform the following functions:

- a. REACTIVITY CONTROL: RPS manual SCRAM from Control Room.
- b. REACTOR COOLANT MAKEUP: RCIC and RHR injection.
- c. REACTOR DEPRESSURIZATION and HEAT REMOVAL: Operating one of three specific SRV's from Remote Shutdown Panel or ADS SRV's locally in Relay Rooms. Shutdown Cooling and Suppression Pool Cooling are used for heat removal.
- d. SUPPORT FUNCTIONS:
 - 1. RHR Service Water which removes heat from the Suppression Pool in the Suppression Pool Cooling Mode or the Reactor Loop through the Heat Exchanger in Shutdown Cooling.
 - 2. Emergency Service Water which provides cooling for equipment through the appropriate Room Coolers.

3. Control Structure HVAC which is utilized to cool the Control Structure.
4. Diesel Generators and batteries which supply power to the various components with the AC and DC distribution system.

Evacuation of the main Control Room should only occur after reasonable efforts have been utilized including use of respiratory equipment. Upon leaving the Control Room, attempts are made to Scram the reactor and close MSIV's and drains. If Control Room actions cannot be performed, all functions can be performed outside the Control Room.

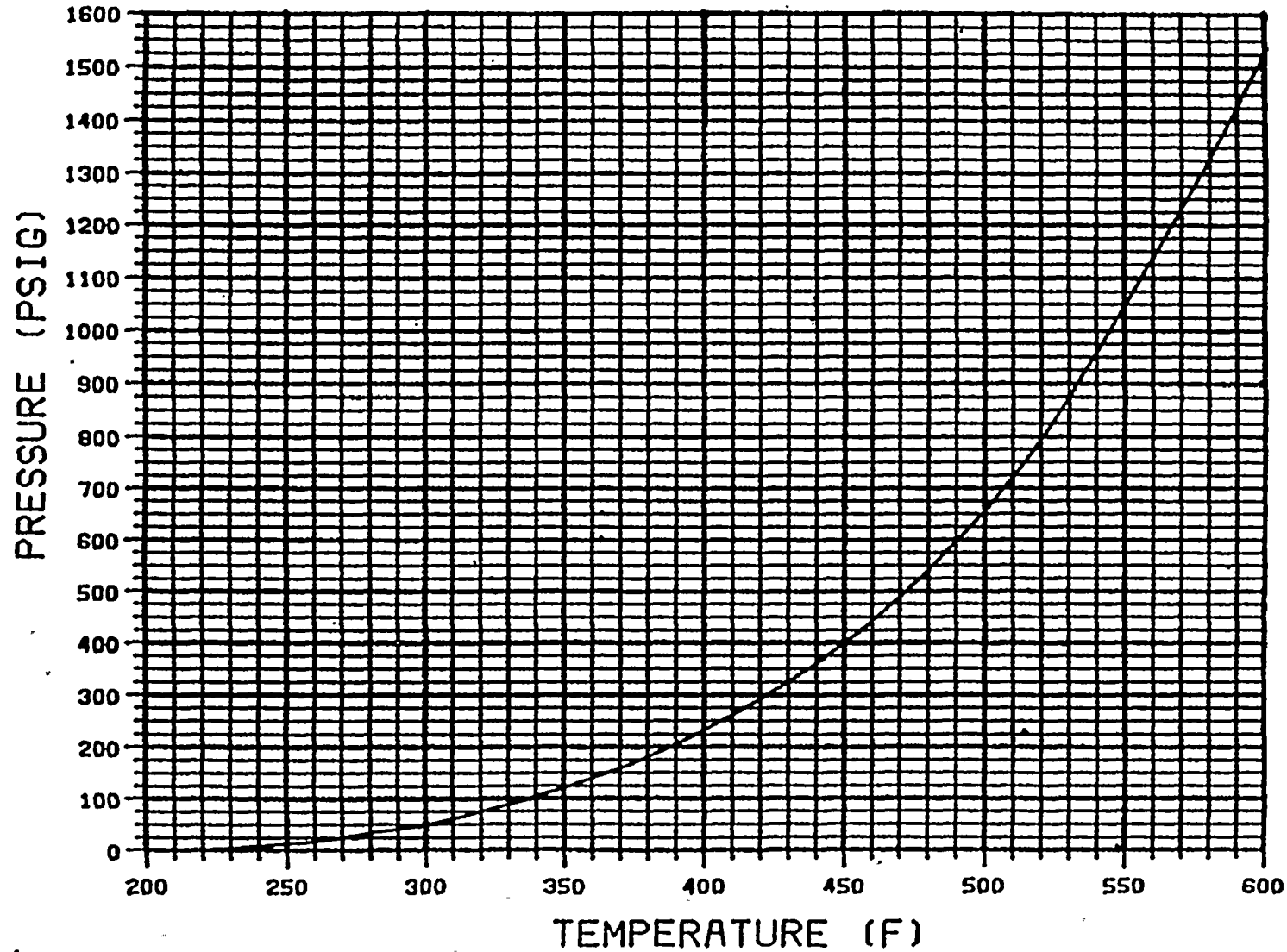
I&C is notified to install temporary remote level and temperature indication. Wide range level instrumentation is increasingly less accurate as pressure decreases. At approximately 200 psig, wide range level instrument indicates +60" when actual level is 0". Temperature indication is not available at the shutdown panel to monitor reactor coolant temperature. While the reactor is pressurized, coolant temperature is derived from RPV pressure using the saturation curve on Attachment A. Once the reactor is depressurized, coolant temperature is unavailable at the remote shutdown panel.

This procedure, and in conjunction with appropriate EOP's, ON's, OP's, etc., will:

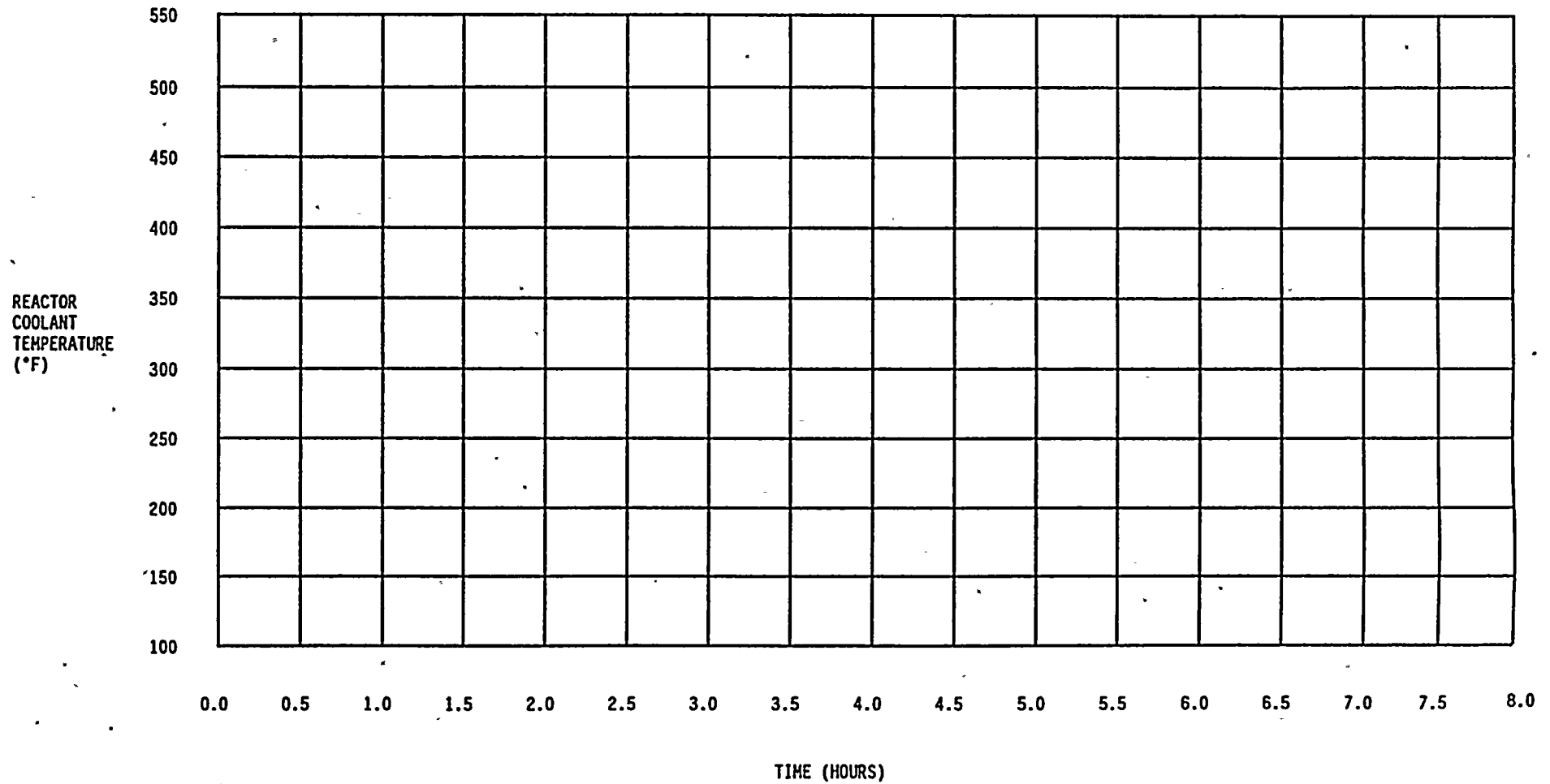
- (a) Achieve and maintain subcritical reactivity conditions.
- (b) Maintain Reactor coolant inventory.
- (c) Achieve Hot Shutdown.
- (d) Achieve and maintain Cold Shutdown.

Transfer switches are wired very differently in Unit 1 RSP as compared to Unit 2 RSP. This requires procedure steps to be implemented differently on each unit.

PRESSURE VS TEMPERATURE FOR SATURATED STEAM



RPV TEMPERATURE PLOT



SOUND POWERED PHONE LOCATIONS

JACK PLATE
IDENTIFICATION

LOCATION (AREA/ELEVATION)

Loop 2 Remote Shtdwn (JP2201)	Unit 1 Remote Shutdown Panel (25/670)
Loop 2 Remote Shtdwn (JP2202)	2A202 416 kv Switchgear Room (33//749)
Loop 2 Remote Shtdwn (JP2203)	2A201 416 kv Switchgear Room (34/749)
Loop 2 Remote Shtdwn (JP2204)	RPS M/G Set (30/762)
Loop 2 Remote Shtdwn (JP2205)	Unit 2 Remote Shutdown Panel (32/670)
Loop 2 Remote Shtdwn (JP2206)	Lower Relay Room (21/698)
Loop 2 Remote Shtdwn (JP2207)	2A204 416 kv Switchgear Room (33/719)
Loop 2 Remote Shtdwn (JP2208)	2A203 416 kv Switchgear Room (34/719)
Loop 2 Remote Shtdwn (JP1215)	Unit 2 Remote Shutdown Panel (32/670)
Loop 2 Remote Shtdwn (JP1207)	Unit 1 Remote Shutdown Panel (25/670)

General Notes:

- (1) A maximum of 6 jack plates can be used at one time.
- (2) Sound Powered Phone Headsets are located in a sealed box near the jack plate.
- (3) Can establish communications between any 2 to 6 locations listed above.
- (4) Jack Plates and Headsets storage boxes are color coded Pink.
- (5) Communications between Unit 2 and Unit 1 Remote Shutdown Panel use either:

JP2205 to JP2201

OR

JP1207 to JP1215

1. CONTROL TRANSFER SWITCH A HSS-24901A (INSTR SET 1,2)
 - a. RCIC FLOW INDICATION
 - b. RCIC FLOW CONTROLLER
 - c. RCIC SPEED INDICATION
 - d. VESSEL LEVEL
 - e. VESSEL PRESSURE
 - f. SUPP POOL WATER TEMP
 - g. RCIC BAROMETRIC CONDENSER CONDENSATE PUMP
(1) START LOGIC ON HIGH CONDENSER LEVEL E-154 SH 21
 - h. INBOARD MSIV INDICATION
2. CONTROL TRANSFER SWITCH B HSS-25110A (INSTR SET 3,4)
 - a. RHR LOOP A FLOW
 - b. RHRSW LOOP A FLOW
 - c. SUPP POOL LEVEL
 - d. CONTAINMENT PRESSURE
 - e. CONTAINMENT TEMPERATURE
 - f. SUPP POOL AIR TEMP
3. CONTROL TRANSFER SWITCH A HSS-24902A
 - a. 2P220 RCIC BARO CONDENSER CONDENSATE PUMP E-154 SH 21
 - (1) CONTROL AND INDICATION
 - (2) HSS-24910A HIGH LEVEL START LOGIC, PUMP WILL AUTO CYCLE WITH LEVEL

- b. HV-249-F031 RCIC PUMP SUCT FROM SUPP POOL E-154 SH 29
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOW CST LEVEL
- c. TRANSFERS POWER SOURCE TO RCIC EGM TURB SPEED CONTROL BOX E-154 SH 20
- d. HV-249-F046 RCIC BARO CONDENSER SPRAY E-154 SH 28
 - (1) OPEN SIGNAL TO VALVE
- e. HV-249-F022 RCIC TEST LINE ISO TO CST E-154 SH 34
 - (1) INDICATION
 - (2) SEE HSS-24903B FOR BALANCE OF LOGIC
- 4. CONTROL TRANSFER SWITCH B HSS-24903A
 - a. HV-25012 RCIC TURBINE TRIP AND THROTTLING VLV E-154 SH 27
 - (1) CONTROL AND INDICATION
 - (2) NO FUNCTIONS BYPASSED
 - b. FV-249-F019 RCIC MIN FLOW TO SUPP POOL E-154 SH 31
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON HIGH PRESS AND LOW FLOW
 - (3) DEFEAT AUTO CLOSE ON HIGH FLOW, STOP VLV CLOSURE, OR STEAM ADMISSION VLV CLOSURE
 - c. HV-249-F060 RCIC VAC PP DSCH TO SUPP POOL E-154 SH 32
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - d. HV-249-F062 RCIC TURB EXH OB VAC BKR E-154 SH 36
 - (1) INDICATION
 - (2) SEE HSS-24904A FOR BALANCE OF LOGIC

5. CONTROL TRANSFER SWITCH C HSS-24904A
- a. HV-249-F008 RCIC STEAM SUPPLY OB ISO E-154 SH 22
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL
 - (3) CAN BE OPENED WITH ISOLATION SIGNAL PRESENT
 - b. HV-249-F013 RCIC INJECTION E-154 SH 36
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOW VESSEL PRESS WITH HIGH CONTAINMENT PRESS
 - (3) SEE HSS-24903A FOR BALANCE OF LOGIC
6. CONTROL TRANSFER SWITCH D HSS-24905A
- a. HV-249-F007 RCIC STEAM SUPPLY IB ISO E-154 SH 23
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL
 - (3) CAN BE OPENED WITH ISOLATION SIGNAL PRESENT
 - b. HV-243-F023B RECIRC PUMP B SUCT E-151 SH 23
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - c. HV-249-F084 RECIRC TURB EXH IB VAC BKR E-154 SH 35
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOW VESSEL PRESSURE WITH HIGH CONTAINMENT PRESS

7. CONTROL TRANSFER SWITCH M HSS-24902B
- a. 2P219 RCIC BARO CDSR VACUUM PP E-154 SH 20
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO START ON INITIATION SIGNAL
 - b. HV-249-F010 RCIC PUMP SUCT FROM CST E-154 SH 30
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON HV-249-F031 FULL OPEN
 - (3) DEFEAT AUTO OPEN ON INITIATION SIGNAL AND HV-249-F031 NOT FULL OPEN
 - c. HV-249-F059 RECIRC TURB EXH TO SUPP POOL E-154 SH 33
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - d. TRANSFERS POWER SOURCE TO RECIRC TURB TRIP SOLENOID, TRIP RELAY IS BYPASSED
8. CONTROL TRANSFER SWITCH N HSS-24903B
- a. HV-249-F045 STEAM TO RECIRC TURBINE E-154 SH 24
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON INITIATION SIGNAL
 - (3) DEFEAT AUTO CLOSE ON +54 INCH SHUTDOWN SIGNAL
 - b. HV-249-F012 RCIC PUMP DSCH E-154 SH 25
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON INITIATION SIGNAL
 - c. HV-249-F022 RECIRC PUMP DSCH E-154 SH 34
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON INITIATION SIGNAL

- (3) DEFEAT AUTO CLOSE ON HV-249-F031 OPEN
 - (4) HV-249-F013, RCIC INJECTION, MUST BE CLOSED TO OPEN VLV
 - (5) SEE HSS-24902A FOR BALANCE OF LOGIC
9. CONTROL TRANSFER SWITCH E HSS-25111A
- a. HV-251-F049 RADWASTE OB ISO E-153 SH 84
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON OB CONTAINMENT ISO
 - (3) CAN BE OPENED WITH ISO SIGNAL PRESENT
 - b. HV-251-F006B SHUTDOWN CLG SUCT E-153 SH 65
 - (1) CLOSE SIGNAL TO VALVE
 - c. HV-251-F006D SHUTDOWN CLG SUCT E-153 SH 65
 - (1) CLOSE SIGNAL TO VALVE
10. CONTROL TRANSFER SWITCH R HSS-25111B
- a. HV-251-F023 RHR HEAD SPRAY FLOW CTL E-153 SH 83
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON RHR NSSSS ISOLATION
 - b. HV-251-F010B RHR LOOP B CROSS TIE E-153 SH 103
 - (1) CLOSE SIGNAL TO VALVE
 - c. SV-22605 INSTR GAS CMP OB SUCT E-172 SH 7
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON CONTAINMENT ISOLATION
 - (3) VALVE WILL CYCLE CLOSED DURING TRANSFER TRIPPING CIG COMPRESSORS

11. CONTROL TRANSFER SWITCH F HSS-25112A
 - a. SPARE, ONLY CAUSES BIS ALARM
12. CONTROL TRANSFER SWITCH S HSS-25112B
 - a. HV-251-F008 SHUTDOWN COOLING SUCT OB ISO E-153 SH 60
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON RHR NSSSS ISOLATION
 - (3) 98 PSIG VESSEL HIGH PRESSURE WILL ISOLATE VLV, 125V DC POWER, DOES NOT REQUIRE RESET
13. CONTROL TRANSFER SWITCH G HSS-25113A
 - a. HV-251-F009 SHUTDOWN CLG SUCT IB ISO E-153 SH 62
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON RHR NSSSS ISOLATION
 - (3) 98 PSIG VESSEL HIGH PRESSURE WILL ISOLATE VLV, 125V DC POWER, DOES NOT REQUIRE RESET
 - b. HV-251-F022 HEAD SPRAY IB SHUTOFF E-153 SH 82
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON RHR NSSS ISOLATION
 - c. HV-212-F073A RHR SW CROSS TIE E-150 SH 30
 - (1) CLOSE SIGNAL TO VALVE
 - d. PSV-2F013A A SRV E-180 SH 4
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
14. CONTROL TRANSFER SWITCH T HSS-25113B
 - a. HV-251-F006A SHUTDOWN CLG SUCT E-153 SH 81
 - (1) CONTROL AND INDICATION

- (2) DEFEAT INTERLOCK THAT REQUIRES HV-251-F028A
CLOSED TO OPEN VALVE
- (3) STILL HAVE INTERLOCK THAT REQUIRES HV-241-F004A
CLOSED TO OPEN VALVE
- b. HV-25112 HEAD SPRAY SHUTOFF E-153 SH 101
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
- c. HV-251-F006C SHUTDOWN CLG SUCT E-153 SH 65
 - (1) CLOSED SIGNAL TO VALVE
- d. HV-251-F010A RHR LOOP A CROSS TIE E-153 SH 86
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
- e. PSV-2F013B B SRV E-180 SH 4
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
- 15. CONTROL TRANSFER SWITCH H HSS-25114A
 - a. HV-251-F004A RHR PUMP A SUCT E-153 SH 55
 - (1) CONTROL AND INDICATION
 - (2) HV-251-F006A MUST BE CLOSED TO OPEN VALVE
 - b. HV-251-F017A RHR INJ FLOW CTL E-153 SH 59
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT INTERLOCK WITH HV-251-F015A
 - (3) DEFEAT AUTO OPEN ON LOCA SIGNAL
 - c. HV-251-F016A RHR DRYWELL SPRAY OB ISO E-153 SH 100
 - (1) CLOSE SIGNAL TO VALVE

- d. HV-251-F027A SUPP CHMBR SPRAY CTL E-153 SH 100
 - (1) CLOSE SIGNAL TO VALVE
- e. PSV-2F013C C SRV E-180 SH 4
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
- 16. CONTROL TRANSFER SWITCH U HSS-25114B
 - a. 2P202A RHR PUMP 2A E-153 SH 47
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO START ON LOCA SIGNAL
 - (3) DEFEAT AUTO TRIP WITH NO SUCTION PATH ALIGNED
 - (4) DEFEAT LOCA/FALSE LOCA TRIP
 - (5) START DELAYED 3 SECONDS IF DG SUPPLYING BUS
 - (6) 1A RHR PUMP MUST BE SHUTDOWN TO START
 - b. HV-251-F024A TEST LINE CTL E-153 SH 58
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOCA SIGNAL
 - c. HV-22603 INSTR GAS CMP. IB SUCT ISO E-172 SH 4
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL
- 17. CONTROL TRANSFER SWITCH J HSS-25115A
 - a. HV-251-F007A RHR PP A/C MIN FLOW E-153 SH 98
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOW FLOW
 - (3) DEFEAT AUTO CLOSE ON HIGH FLOW

- b. HV-251-F028A SUPP CHMBR SPR TEST SHUTOFF E-153 SH 57
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOCA SIGNAL
- c. HV-251-F040 RADWASTE IB ISO E-153 SH 85
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON NSSSS ISOLATION SIGNAL
- 18. CONTROL TRANSFER SWITCH V HSS-25115B
 - a. HV-251-F103A RHR HX A VENT E-153 SH 99
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. HV-251-F047A RHR HX A SHELL SIDE INLET E-153 SH 108
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - c. HV-251-F048A RHR HX A SHELL SIDE BYPS E-153 SH 54
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOCA SIGNAL
- 19. CONTROL TRANSFER SWITCH K HSS-25116A
 - a. HV-251-F003A RHR HX A SHELL SIDE OUTLET E-153 SH 56
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. HV-251-F104A RHR HX A VENT E-153 SH 99
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

- c. HV-251-F015A RHR INJ OB ISO E-153 SH 61
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOCA SIGNAL
 - (3) DEFEAT INTERLOCK WITH HV-251-F017A
 - (4) DEFEAT INTERLOCK WITH VESSEL HIGH PRESS
 - (5) DEFEAT AUTO CLOSE ON +13 INCH SDC ISOLATION

- 20. CONTROL TRANSFER SWITCH W HSS-25116B
 - a. HV-21215A RHRSW HX A OUTLET E-150 SH 22
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

 - b. HV 01222A SPRAY POND LOOP A BYPS E-150 SH 32
 - (1) CONTROL AND INDICATION
 - (2) VALVE WILL AUTO OPEN ON PUMP START OR ON LAST PUMP SHUTDOWN

 - c. SV-22651 INSTR GAS TO CONTN ISO E-172 SH 7
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON CONTAINMENT ISOLATION

 - d. 2P506A 2A RHRSW PUMP E-150 SH 15
 - (1) CONTROL AND INDICATION (PARTIAL)
 - (2) SEE HSS-25117A DEFEATS LOCA TRIP
 - (3) SEE HSS-25117B TRANSFERS REMAINING CONTROL AND INDICATION

21. CONTROL TRANSFER SWITCH L HSS-25117A
- a. HV-01224A1 SPRAY POND NETWORK A1 E-150 SH 33
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. OP504A A ESW PUMP E-146 SH 1 & 2
 - (1) CONTROL AND INDICATION
 - (2) ENABLES INDICATION AT U1 RSP
 - (3) PUMP WILL START WITH D/G
 - (4) DEFEATS LOCA/LOOP RESET LOGIC
 - c. HV-21210A RHR SW HX A INLET E-150 SH 23
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - d. 2P506A A RHRSW PUMP E-150 SH 26
 - (1) SEE HSS-25116B CONTROL AND INDICATION (PARTIAL)
 - (2) DEFEATS LOCA TRIP
 - (3) SEE HSS-25117B TRANSFERS REMAINING CONTROL AND INDICATION
22. CONTROL TRANSFER SWITCH X HSS-25117B
- a. HV-01224A2 SPRAY POND NETWORK A2 E-150 SH 33
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. OP504C ESW PUMP E-146 SH 5 & 6
 - (1) CONTROL AND INDICATION
 - (2) ENABLES INDICATION AT U1 RSP

- (3) PUMP WILL START WITH D/G
- (4) DEFEATS LOCA/LOOP RESET LOGIC

c. 2P506A 2A RHRSW PUMP

E-150 SH 15

- (1) CONTROL AND INDICATION (PARTIAL)
- (2) SEE HSS-25117A DEFEATS LOCA TRIP
- (3) SEE HSS-25116B TRANSFERS REMAINING CONTROL AND INDICATION

23. CONTROL TRANSFER SWITCH Y HSS-24454

E-154 SH 15

a. HV-244-F001 RWCU IB ISO

- (1) CLOSE SIGNAL TO VALVE
- (2) THERMAL OVERLOADS BYPASSED