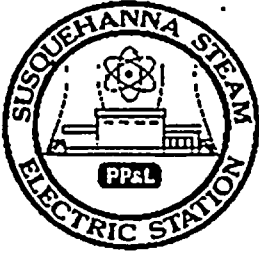


PROCEDURE COVER SHEET

	NUCLEAR DEPARTMENT PROCEDURE	ON-100-009 Revision 3 Page 1 of 28
	CONTROL ROOM EVACUATION	
EFFECTIVE DATE: <u>4-28-95</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>C. J. Miller</u>	Date <u>4-19-95</u>
Reviewed by	<u>[Signature]</u> Supervisor	Date <u>4-24-95</u>
Recommended	<u>[Signature]</u> Functional Unit Manager	Date <u>4/25/95</u>
	<u>N/A</u> PORC Committee Meeting No.	Date _____
	<u>N/A</u> ERC Committee Meeting No.	Date _____
Approved by	<u>[Signature]</u>	Date <u>4-26-95</u>

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

ON-100-009

3

9505260325 950522
 PDR ADCK 05000387
 F PDR

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 ANNOUNCE twice over Plant PA System "Control Room evacuation in progress". _____
- 3.1.2 PLACE REACTOR MODE SWITCH HS-C72A-1S01 to SHUTDOWN. _____
- 3.1.3 ENSURE all Control Rods INSERTED. _____
- 3.1.4 INSERT SRM's and IRM's. _____
- 3.1.5 CLOSE MSIV's and MSL drains. _____
- 3.1.6 CLOSE RFP A,B,&C DSCH ISO HV-10603A,B&C. _____
- 3.1.7 PLACE FW LOW LOAD LIC-C32-1R602 in AUTO. _____
- 3.1.8 OPEN HPCI TEST LINE ISO VLV HV-155-F011. _____
- 3.1.9 TAKE two (2) sets of security keys from Shift Supervisor key cabinet to gain entrance into Reactor Building. (Unit Supervisor only) _____

CONFIRM

3.2 EVACUATE Main Control Room. _____

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

4.0 SUBSEQUENT OPERATOR ACTIONS

NOTE: All indications and controls are from IC201 unless otherwise indicated.

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

NOTE: Unit Two Remote Shutdown Panel Room phone extension is 3823.

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 JP1203 by A RPS Panel, if needed to open RPS panels.

a. 1Y201A bkr CB2A in RPS power distribution _____
Panel (27-749')

b. 1Y201B bkr CB8B in RPS power distribution _____
Panel (27-749')

4.2.2 MANUALLY CLOSE following valves:

a. RFP A Dsch Iso HV-10603A. _____

b. RFP B Dsch Iso HV-10603B. _____

c. RFP C Dsch Iso HV-10603C. _____

CONFIRM

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

4.3.1 Transfer control and instrumentation 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-14901A in EMERG position. _____
- b. Transfer CONTROL TRANSFER SWITCH A HSS-14902A as follows:
 - (1) ENSURE BAROMETRIC CDSR COND PUMP 1P220 aligned to AUTO. _____
 - (2) PLACE CONTROL TRANSFER SWITCH A HSS-14902A in EMERG position. _____
- c. Transfer CONTROL TRANSFER SWITCH M HSS-14902B as follows:
 - (1) ENSURE TURB EXH TO SUPP POOL HV-149-F059 aligned to OPEN. _____
 - (2) ENSURE BAROMETRIC VACUUM PUMP 1P219 aligned to STOP. _____
 - (3) PLACE CONTROL TRANSFER SWITCH M HSS-14902B in EMERG position. _____
- d. Transfer CONTROL TRANSFER SWITCH B HSS-14903A as follows:
 - (1) ENSURE VAC PP DSCH TO SUPP POOL HV-149-F060 aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH B HSS-14903A in EMERG position. _____
- e. PLACE CONTROL TRANSFER SWITCH N HSS-14903B in EMERG position. _____
- f. PLACE CONTROL TRANSFER SWITCH C HSS-14904A in EMERG position. _____

CONFIRM

- g. PLACE CONTROL TRANSFER SWITCH D
HSS-14905A in EMERG position. _____
- h. PLACE INSTR TRANSFER SWITCH B INSTR SET
3,4 HSS-15110A in EMERG position. _____
- i. Transfer CONTROL TRANSFER SWITCH R HSS-15111B
as follows:
 - (1) ENSURE INSTR GAS TO CONTN ISO
SV-12651 aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH R
HSS-15111B in EMERG position. _____
- j. PLACE CONTROL TRANSFER SWITCH F
HSS-15112A in EMERG position. _____
- k. PLACE CONTROL TRANSFER SWITCH S
HSS-15112B in EMERG position. _____
- l. PLACE CONTROL TRANSFER SWITCH G
HSS-15113A in EMERG position. _____
- m. Transfer CONTROL TRANSFER SWITCH T HSS-15113B
as follows:
 - (1) ENSURE SHUTDOWN CLG SUCT
HV-151-F006B aligned to CLOSE. _____
 - (2) ENSURE RHR LOOP B CROSSTIE
HV-151-F010B aligned to CLOSE. _____
 - (3) PLACE CONTROL TRANSFER SWITCH T
HSS-15113B in EMERG position. _____
- NOTE: Indication for RHR LOOP
B CROSSTIE HV-151-F010B
will not illuminate due to
supply breaker being open.
- n. Transfer CONTROL TRANSFER SWITCH H HSS-15114A
as follows:
 - (1) ENSURE RHR PUMP B SUCT HV-151-F004B _____
aligned to OPEN.

CONFIRM

- (2) PLACE CONTROL TRANSFER SWITCH H
HSS-15114A in EMERG position. _____
- o. Transfer CONTROL TRANSFER SWITCH U HSS-15114B
as follows:
 - (1) ENSURE INSTR GAS CMP OB SUCT ISO
SV-12605 aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH U
HSS-15114B in EMERG position. _____
- p. PLACE CONTROL TRANSFER SWITCH J
HSS-15115A in EMERG position. _____
- q. Transfer CONTROL TRANSFER SWITCH V HSS-15115B
as follows:
 - (1) ENSURE HX B SHELL SIDE INLET
HV-151-F047B aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH V
HSS-15115B in EMERG position. _____
- r. Transfer CONTROL TRANSFER SWITCH K HSS-15116A
as follows:
 - (1) ENSURE HX B SHELL SIDE OUTLET
HV-151-F003B aligned to OPEN. _____
 - (2) PLACE CONTROL TRANSFER SWITCH K
HSS-15116A in EMERG position. _____
- s. PLACE CONTROL TRANSFER SWITCH W
HSS-15116B in EMERG position. _____
- t. PLACE CONTROL TRANSFER SWITCH L
HSS-15117A in EMERG position. _____
- u. PLACE CONTROL TRANSFER SWITCH X
HSS-15117B 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. _____

CONFIRM

- 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-180-004, Reactor Shutdown Range Level Measurement at Rack 1C005, LT-B21-1N027.
 - b. Temporary reactor coolant temperature indication in accordance with IC-149-005, Installation and Removal of Temporary RTD Readers for Local Monitoring of RHR Heat Exchanger B Inlet (TE-E11-1N004B) and Outlet (TE-E11-1N027B) Temperatures.

NOTE: Transferring control switch Y HSS-14454 to EMERG will cause RWCU OB ISO HV-144-F004 to close. Opening breaker 18 in 1Y219 will de-energize SV-14433 closing HV-144F033.

- (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-14454 to EMERG AND _____
 - 4.4.2 OBSERVE green light ILLUMINATED. _____
 - 4.4.3 OPEN breaker 1Y219-018 (29-719'). _____
- 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. _____
 - b. SECURE any battery equalizing charges in progress. _____
 - (¹) 4.5.2 PERFORM DC-OP-001, Post Fire Recovery Actions within 8 hours. _____

CONFIRM

CAUTION

RHR PUMP 1P202A MAY SPURIOUSLY START PREVENTING UNIT 2 FROM RUNNING RHR PUMP 2P202A WHEN REQUIRED.

- (¹) 4.5.3 If RHR Pump 1P202A must be tripped, PERFORM the following at 1A20102: .
- 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 for SRV's A, B, and C, will 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-12651. _____
 - b. INSTR GAS CMP OB SUCT ISO SV-12605. _____

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 U, HSS-15114B, 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 1C239:
- a. DEPRESS Logic Reset Push button. _____
 - b. ENSURE CIG Compressor STARTS. _____

CONFIRM

4.6.3 OPERATE SRV's as follows:

CAUTION (1)

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

CAUTION (2)

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

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

NOTE: Keys to operate SRVs are located in sealed Pink sound powered phone storage box, labeled "JP1207, JP1402, JP2201", inside the Remote Shutdown Panel Room.

(1)

- 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 1C631 (1C628) using keylock switches. _____

- c. REFER to Attachment A for RPV Pressure/Temperature Correlation. _____

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 water level to 90 - 100 inches. _____
- b. WHEN reactor pressure < 98 psig, ALIGN RHR System Loop B for Shutdown Cooling in accordance with OP-149-002, RHR Operation in Shutdown Cooling Mode. _____

CONFIRM

4.7 Diesel Generator Local Start

- 4.7.1 If required, PERFORM ON-104-001 Unit 1 Response to Loss of All Offsite Power. _____
- 4.7.2 If B Loop of ESW not available or cannot be placed in service, place A Loop ESW in service from Unit 2 Remote Shutdown Panel 2C201 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

(¹)

- 4.8.1 If the Diesel Generator breaker to the 4.16KV ESS bus fails to close, PERFORM following at 1A20104(1A20204)(1A20304)(1A20404):
 - a. ENSURE breaker control power in breaker cubicle available by CLOSING DC Ctl Power knife switch in 1A20104(1A20204)(1A20304)(1A20404) _____
 - b. ENSURE effects of breaker operation and associated interlocks have been evaluated. _____
 - 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 to ENSURE following:

- 4.9.1 Main Turbine TRIPPED. _____
- 4.9.2 Generator TRIPPED by observing output breaker OPEN. _____
- 4.9.3 At 13.8 KV Switchgear, auxiliary buses transferred to Startup Bus 10 indicated by Breakers 1A10101 & 1A10201 OPEN and Breakers 1A10104 & 1A10204 CLOSED and voltage on bus. _____

CONFIRM

- 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 1P401A & 1P401B remain at minimum speed at Servo Controller 1S137A(B) as follows:

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

- a. REMOVE top cover. _____
- b. PLACE control power switch to OFF. _____

4.10 When Control Room becomes available, PROCEED to OP-100-001 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 4, 9-18, 20, 24, 36-41, 44
- 5.3 E-185 Sh 5, 10-13
- 5.4 J-451 Sh 1-3
- (¹) 5.5 Susquehanna Fire Protection Review Report
- (²) 5.6 PLI-74583 App R HOT SHORTS Procedure Change Request
- 5.7 E-690 Appendix "R" Safe Shutdown Manual Actions List

6.0 DISCUSSION

This procedure assumes EOPs 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 2 will be implementing ON-200-009 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. Prior to 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.

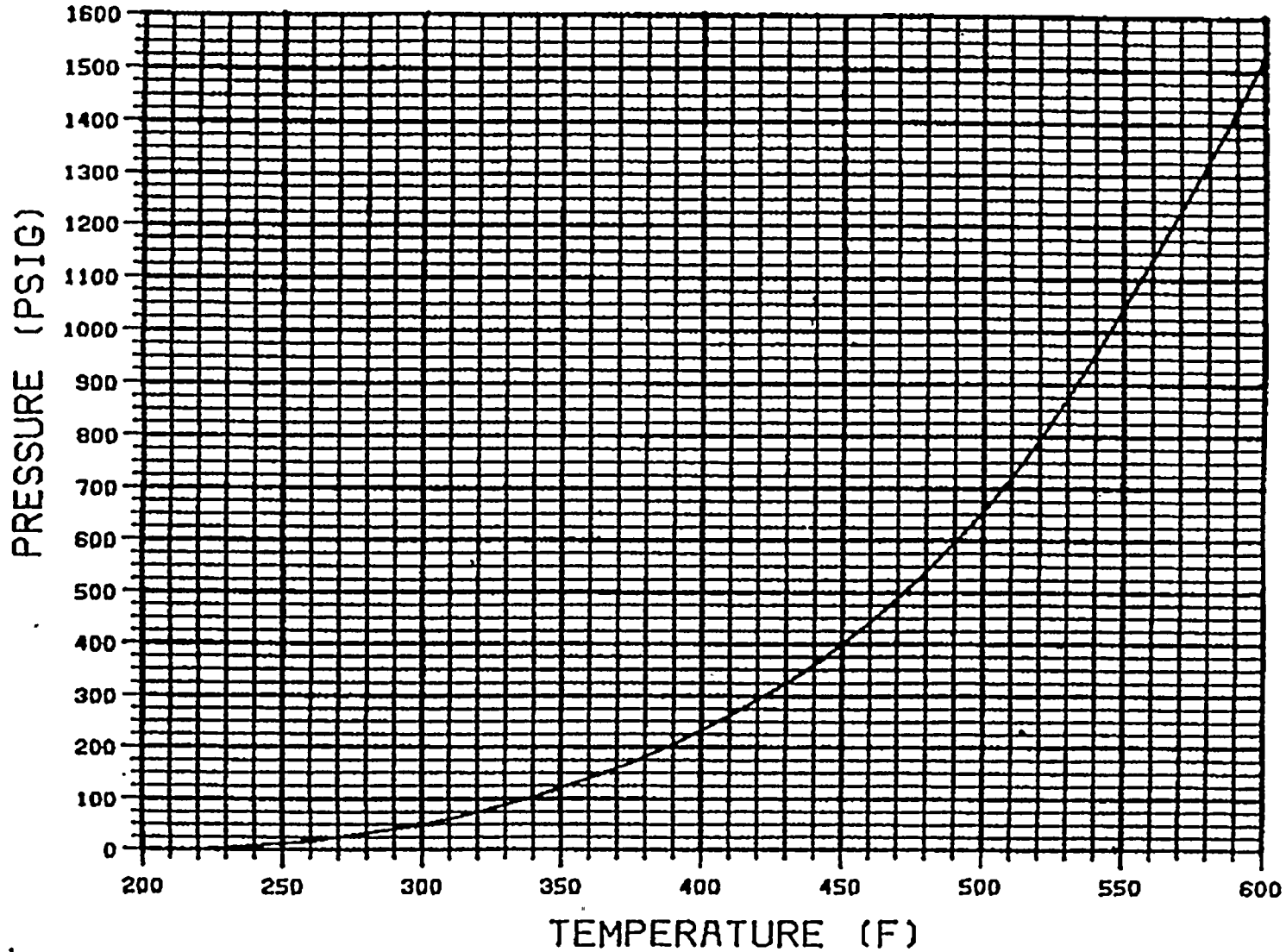
I&C is notified to install temporary remote level and temperature indication. Wide range level instrumentation is increasingly less accurate as pressure decreases. At approximately 200 psig, wide range level instrument indicates +60" when actual level is 0". Temperature indication is not available at 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:

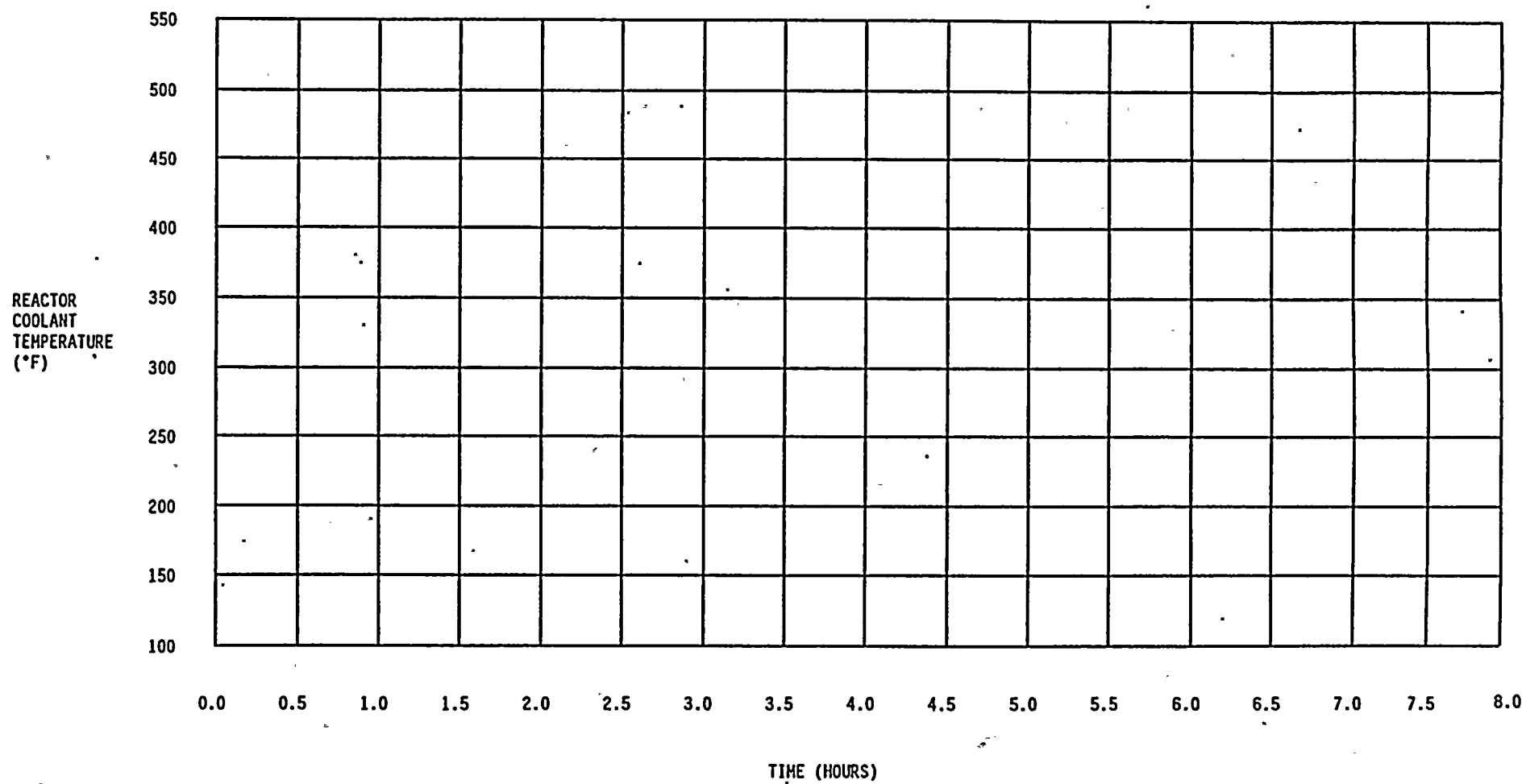
- a. Achieve and maintain subcritical reactivity conditions.
- b. Maintain Reactor coolant inventory.
- c. Achieve Hot Shutdown.
- d. Achieve and maintain Cold Shutdown.

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

Attachment C
ON-100-009
Revision 3
Page 16 of 28

<u>Jack Plate Identification</u>	<u>Location</u>	<u>(Area/Elevation)</u>
Loop 2 Remote Shtdwn (JP1201)	1A201 4.16 KV Switchgear Room	(29/749)
Loop 2 Remote Shtdwn (JP1202)	1A202 4.16 KV Switchgear Room	(28/749)
Loop 2 Remote Shtdwn (JP1203)	RPS M/G Set	(30/762)
Loop 2 Remote Shtdwn (JP1204)	1A203 4.16 KV Switchgear Room	(29/719)
Loop 2 Remote Shtdwn (JP1205)	1A204 4.16 KV Switchgear Room	(28/719)
Loop 2 Remote Shtdwn (JP1206)	CS HVAC Local Panel	(21/783)
Loop 2 Remote Shtdwn (JP1207)	Unit 1 Remote Shutdown Panel Room	(25/670)
Loop 2 Remote Shtdwn (JP1208)	13.8 KV Switchgear 1A101/1A102	(8/699)
Loop 2 Remote Shtdwn (JP1209)	Lower Relay Room	(12/698)
Loop 2 Remote Shtdwn (JP1210)	A D/G Room	(44/677)
Loop 2 Remote Shtdwn (JP1211)	B D/G Room	(44/677)
Loop 2 Remote Shtdwn (JP1212)	C D/G Room	(43/677)
Loop 2 Remote Shtdwn (JP1213)	D D/G Room	(43/677)
Loop 2 Remote Shtdwn (JP1214)	E D/G Room	(43/677)
Loop 2 Remote Shtdwn (JP1215)	Unit 2 Remote Shutdown Panel Room	(32/670)
Loop 2 Remote Shtdwn (JP2201)	Unit 1 Remote Shutdown Panel Room	(25/670)
Loop 2 Remote Shtdwn (JP2205)	Unit 2 Remote Shutdown Panel Room	(32/670)

SOUND POWERED PHONE LOCATIONS

Attachment C
ON-100-009
Revision 3
Page 17 of 28

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 Headset Storage Boxes are color coded pink.
- 5) Communications between Unit 1 & Unit 2 Remote Shutdown Panels use either:

JP1215 to JP1207

OR

JP2201 to JP2205

1. CONTROL TRANSFER SWITCH A HSS-14901A (INSTR SET 1, 2)
 - a. RCIC FLOW INDICATION
 - b. RCIC FLOW CONTROLLER
 - c. RCIC SPEED INDICATION
 - d. SUPP POOL WATER TEMP (PARTIAL)
 - e. INBOARD MSIV INDICATION
2. CONTROL TRANSFER SWITCH B HSS-15110A (INSTR SET 3, 4)
 - a. RHR LOOP B FLOW
 - b. RHRSW LOOP B FLOW
 - c. SUPP POOL LEVEL
 - d. CONTAINMENT PRESSURE
 - e. SUPP POOL WATER TEMP (PARTIAL)
 - f. CONTAINMENT TEMPERATURE
 - g. SUPP POOL AIR TEMP
3. CONTROL TRANSFER SWITCH A HSS-14902A
 - a. 1P220 RCIC BARO CONDENSER CONDENSATE PUMP E-154 SH 2
 - (1) CONTROL AND INDICATION
 - (2) PUMP WILL AUTO CYCLE WITH LEVEL
 - b. HV-149-F031 RCIC PUMP SUCT FROM SUPP POOL E-154 SH 10
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOW CST LEVEL
 - c. TRANSFERS POWER SOURCE TO RCIC FROM EMG TURB SPEED CONTROL BOX E-154 SH 39

- d. HV-149-F046 RCIC BARO CONDENSER SPRAY E-154 SH 9
 - (1) OPEN SIGNAL TO VALVE
- 4. CONTROL TRANSFER SWITCH B HSS-14903A
 - a. HV-15012 RCIC TURBINE TRIP AND THROTTLING VLV E-154 SH 8
 - (1) CONTROL AND INDICATION
 - (2) NO FUNCTIONS BYPASSED
 - b. FV-149-F019 RCIC MIN FLOW TO SUPP POOL E-154 SH 12
 - (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-149-F060 RCIC VAC PP DSCH TO SUPP POOL E-154 SH 13
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - d. HV-149-F062 RCIC TURB EXH OB VAC BKR E-154 SH 17
 - (1) INDICATION
 - (2) SEE HSS-14904A FOR BALANCE LOGIC
- 5. CONTROL TRANSFER SWITCH C HSS-14904A
 - a. HV-149-F008 RCIC STEAM SUPPLY OB ISO E-154 SH 3
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL

- b. HV-149-F013 RCIC INJECTION E-154 SH 7
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON INITIATION SIGNAL
 - (3) DEFEAT AUTO CLOSE ON +54 SHUTDOWN SIGNAL
- c. HV-149-F062 RCIC TURB EXH OB VAC BKR E-154 SH 17
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOW VESSEL PRESS WITH HIGH CONTAINMENT PRESS
 - (3) SEE HSS-14903A FOR BALANCE OF LOGIC
- 6. CONTROL TRANSFER SWITCH D HSS-14905A
 - a. HV-149-F007 RCIC STEAM SUPPLY IB ISO E-154 SH 4
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL
 - (3) CAN BE OPENED WITH ISOLATION SIGNAL PRESENT
 - b. HV-143-F023B RECIRC PUMP B SUCT E-151 SH 8
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - c. HV-149-F084 RCIC TURB EXH IB VAC BKR E-154 SH 16
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOW VESSEL PRESSURE WITH HIGH CONTAINMENT PRESS
- 7. CONTROL TRANSFER SWITCH M HSS-14902B
 - a. 1P219 RCIC BARO CDSR VACUUM PP E-154 SH 1
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO START ON INITIATION SIGNAL
 - b. HV-149-F010 RCIC PUMP SUCT FROM CST E-154 SH 11

- (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON HV-149-F031 FULL OPEN
 - (3) DEFEAT AUTO OPEN ON INITIATION SIGNAL AND HV-149-F031 NOT FULL OPEN
- c. HV-149-F059 RCIC TURB EXH TO SUPP POOL E-154 SH 14
- (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
- d. TRANSFERS POWER SOURCE TO RCIC TURB TRIP SOLENOID, HOWEVER, TRIP SIGNAL RELAY K8 IS BYPASSED
8. CONTROL TRANSFER SWITCH N HSS-14903B
- a. HV-149-F045 STEAM TO RCIC TURBINE E-154 SH 5
- (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON INITIATION SIGNAL
 - (3) DEFEAT AUTO CLOSE ON +54 INCH SHUTDOWN SIGNAL
- b. HV-149-F012 RCIC PUMP DISCH E-154 SH 6
- (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON INITIATION SIGNAL
- c. HV-149-F022 RCIC TEST LINE ISO TO CST E-154 SH 15
- (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON INITIATION SIGNAL
 - (3) DEFEAT AUTO CLOSE ON HV-149-F031 OPEN
 - (4) HV-149-F013, RCIC INJECTION, MUST BE CLOSED TO OPEN VLV ALSO WILL CLOSE F022 IF F013 LEAVES FULL CLOSED POSITION

- 9. CONTROL TRANSFER SWITCH R HSS-15111B
 - a. PSV-1F013A A SRV E-180 SH 1
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
 - b. SV-12651 INSTR GAS TO CONTN ISO E-172 SH 5
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON CONTAINMENT ISOLATION
 - (3) VALVE WILL AUTO CLOSE DURING TRANSFER
- 10. CONTROL TRANSFER SWITCH F HSS-15112A
 - a. PSV-1F013C C SRV E-180 SH 1
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
 - b. HV-151-F009 SHUTDOWN CLG SUCT IB ISO E-153 SH 17
 - (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
 - c. HV-12603 INSTR GAS CMP IB SUCT ISO E-172 SH 2
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON ISOLATION SIGNAL
- 11. CONTROL TRANSFER SWITCH S HSS-15112B
 - a. HV-151-F040 RADWASTE IB ISO E-153 SH 40
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON NSSSS ISOLATION SIGNAL
 - b. HV-151-F006A SHUTDOWN CLG SUCT E-153 SH 20
 - (1) CLOSE SIGNAL TO VALVE

- c. HV-151-F006C SHUTDOWN CLG SUCT E-153 SH 20
 - (1) CLOSE SIGNAL TO VALVE
- d. PSV-1F013B B SRV E-180 SH 1
 - (1) CONTROL (NO INDICATION ON RSP)
 - (2) DEFEAT RELIEF FUNCTION
- 12. CONTROL TRANSFER SWITCH G HSS-15113A
 - a. HV-151-F008 SHUTDOWN COOLING SUCT OB ISO E-153 SH 15
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON RHR NSSSS ISOLATION
 - (3) 98 PSIG VESSEL HIGH PRESSURE WILL ISOLATE VLV, 125 V DC POWER, DOES NOT REQUIRE RESET
 - b. HV-112-F073B RHR SW CROSS TIE E-150 SH 29
 - (1) CLOSE SIGNAL TO VALVE
- 13. CONTROL TRANSFER SWITCH T HSS-15113B
 - a. HV-151-F006B SHUTDOWN CLG SUCT E-153 SH 36
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT INTERLOCK THAT REQUIRES HV-151-F028A CLOSED TO OPEN VALVE
 - (3) STILL HAVE INTERLOCK THAT REQUIRES HV-141-F004A CLOSED TO OPEN VALVE
 - b. HV-151-F010B RHR LOOP B CROSS TIE E-153 SH 112
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - c. HV-151-F006D SHUTDOWN CLG SUCT E-153 SH 20
 - (1) CLOSED SIGNAL TO VALVE
 - d. HV-151-F016B RHR DRYWELL SPRAY OB ISO E-153 SH 114
 - (1) CLOSE SIGNAL TO VALVE

14. CONTROL TRANSFER SWITCH H HSS-15114A
- a. HV-151-F004B RHR PUMP B SUCT E-153 SH 10
 - (1) CONTROL AND INDICATION
 - (2) HV-151-F006B MUST BE CLOSED TO OPEN VALVE
 - b. HV-151-F017B RHR INJ FLOW CTL E-153 SH 14
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT INTERLOCK WITH HV-151-F015B
 - (3) DEFEAT AUTO OPEN ON LOCA SIGNAL
 - c. HV-151-F049 RADWASTE OB ISO E-153 SH 39
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON OB CONTAINMENT ISO
 - (3) CAN BE OPENED WITH ISO SIGNAL PRESENT
15. CONTROL TRANSFER SWITCH U HSS-15114B
- a. 1P202B RHR PUMP 1B E-153 SH 4
 - (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) 2B RHR PUMP MUST BE SHUTDOWN TO START

- b. HV-151-F024B TEST LINE CTL E-153 SH 13
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOCA SIGNAL
 - c. SV-12605 INSTR GAS CMP OB SUCT E-172 SH 5
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON CONTAINMENT ISOLATION
 - (3) VALVE WILL CYCLE CLOSED DURING TRANSFER TRIPPING CIG COMPRESSORS
16. CONTROL TRANSFER SWITCH J HSS-15115A
- a. HV-151-F007B RHR PP B/D MIN FLOW E-153 SH 93
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOW FLOW
 - (3) DEFEAT AUTO CLOSE ON HIGH FLOW
 - b. HV-151-F028B SUPP CHMBR SPR TEST SHUTOFF E-153 SH 12
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO CLOSE ON LOCA SIGNAL
17. CONTROL TRANSFER SWITCH V HSS-15115B
- a. HV-151-F047B RHR HX B SHELL SIDE INLET E-153 SH 107
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. HV-151-F103B RHR HX B VENT E-153 SH 94
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

- c. HV-151-F048B RHR HX B SHELL SIDE BYPS E-153 SH 9
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOCA SIGNAL
- d. HV-151-F027B SUPP CHMBR SPRAY CTL E-153 SH 115
 - (1) CLOSE SIGNAL TO VALVE
- 18. CONTROL TRANSFER SWITCH K HSS-15116A
 - a. HV-151-F003B RHR HX B SHELL SIDE OUTLET E-153 SH 11
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - b. HV-151-F104B RHR HX B VENT E-153 SH 94
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST
 - c. HV-151-F015B RHR INJ OB ISO E-153 SH 16
 - (1) CONTROL AND INDICATION
 - (2) DEFEAT AUTO OPEN ON LOCA SIGNAL
 - (3) DEFEAT INTERLOCK WITH HV-151-F017A
 - (4) DEFEAT INTERLOCK WITH VESSEL HIGH PRESS
 - (5) DEFEAT AUTO CLOSE ON +13 INCH SDC ISOLATION
- 19. CONTROL TRANSFER SWITCH W HSS-15116B
 - a. HV-11215B RHRSW HX B OUTLET E-150 SH 12
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

- b. HV 01222B SPRAY POND LOOP B BYPS E-150 SH 4
 - (1) CONTROL AND INDICATION
 - (2) VALVE WILL AUTO OPEN ON PUMP START OR ON LAST PUMP SHUTDOWN

- c. 1P506B 1B RHRSW PUMP E-150 SH 13
 - (1) CONTROL AND INDICATION (PARTIAL)
 - (2) DEFEATS LOCA TRIP
 - (3) SEE HSS-15117B TRANSFERS REMAINING CONTROL AND INDICATION

- 20. CONTROL TRANSFER SWITCH L HSS-15117A
 - a. HV-01224B1 SPRAY POND NETWORK B1 E-150 SH 8
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

 - b. OP504B B ESW PUMP E-146 SH 3 & 4
 - (1) CONTROL AND INDICATION
 - (2) ENABLES INDICATION AT U2 RSP
 - (3) PUMP WILL START WITH D/G
 - (4) DEFEATS LOCA/LOOP RESET LOGIC

 - c. HV-11210B RHRSW HX B INLET E-150 SH 11
 - (1) CONTROL AND INDICATION
 - (2) NO AUTO FUNCTIONS EXIST

21. CONTROL TRANSFER SWITCH X HSS-15117B

a. HV-01224B2 SPRAY POND NETWORK B2

E-150 SH 8

- (1) CONTROL AND INDICATION
- (2) NO AUTO FUNCTIONS EXIST

b. OP504D D ESW PUMP

E-146 SH 7 & 8

- (1) CONTROL AND INDICATION
- (2) ENABLES INDICATION AT U2 RSP
- (3) PUMP WILL START WITH D/G
- (4) DEFEATS LOCA/LOOP RESET LOGIC

c. IP506B 1B RHRSW PUMP

E-150 SH 2

- (1) CONTROL AND INDICATION (PARTIAL)
- (2) SEE HSS-15116B TRANSFERS REMAINING CONTROL AND INDICATION

22. CONTROL TRANSFER SWITCH Y HSS-14454

a. HV-144-F004 RWCU OB ISO

E-165 SH 7

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