

HOPE CREEK GENERATING STATION

HC.OP-AR.ZZ-0024(Q) - Rev. 7

**CRIDS COMPUTER POINTS BOOK 5
D3624 THRU D4288**

USE CATEGORY: II

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- Packages and Affected Document Numbers incorporated into this revision:
CP No. _____ CP Rev. _____ AD No. _____ Rev No. _____ None ✓
 - The following OPEX were incorporated into this revision: None
 - The following OTSCs were incorporated into this revision: None
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REVISION SUMMARY

- Adds Operator Action 5 to D3837 to “**DISPATCH** an operator to the Torus Room (RB 4102, 54 ft elev) to check the drywell shell, drywell pedestal, and drains at the bottom of the drywell air gap for leakage”. This enhances the monitoring of the drywell shell. This additional step is for an observation and does not impact any actions. This is an editorial change. (20473157)
- Adds an operator action to “**LOWER** fuel pool level back to normal level band IAW HC.OP-SO.EC-0001(Q), Section 5.17” to D3832 and D3833. This action refers to an approved procedure and is editorial. (70104815-0020)

IMPLEMENTATION REQUIREMENTS

Effective Date 8/24/10

None

DIGITAL ALARM POINT _____ **D3625**

NOMENCLATURE TURBINE GEAR MALF/INOP **SETPOINT** _____ N/A

DESCRIPTION INOP/MALF **ORIGIN** _____ N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **MAINTAIN** proper bearing oil header pressure.
2. **ENSURE** proper Turning Gear operation.

CAUSE CORRE	CTIVE ACTION
1. Low Speed Switch made up with Turning Gear failure to automatically operate. 2. Loss of control power to DC638 from MCC B323.	1A. Manually START Turning Gear (HS-7110) <u>WHEN</u> directed by SM/CRS. 1B. DETERMINE cause of failure of automatic operation. 2A. DETERMINE cause of power failure <u>AND RESTORE</u> the power, <u>IF</u> possible.

Associated Annunciator D3 B5

REFERENCES: J-0100-0, Sht. 2, Sht. 12, Sht. 13, Sht. 18

DIGITAL ALARM POINT

D3630

NOMENCLATURE SETPOINT STEAM SEAL HEADER
PRESSURE LOW

< 1.5 psig

DESCRIPTION Steam Seal Hdr Pressure low **ORIGIN**

PSL-1997

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CHECK** PI-1998 STEAM SEAL FEED PRESS indicates approximately 4 psig.
2. IF Steam Seal Header Pressure is < 4 psig,
PERFORM the following:
 - a. IF Main Steam is available, throttle OPEN HV-2001 SEALING STM SUPPLY S/U SHUT OFF VLV BYP until Steam Seal Header Pressure is normal.
 - b. **ENSURE** HV-2037 SEALING STM SUPPLY AUX STM SHUT OFF is open.
 - c. IF Steam Seal Header Pressure cannot be maintained,
REDUCE Reactor power
AND REFER to HC.OP-AB.BOP-0006(Q), Main Condenser Vacuum.

CAUSE CORRE	CTIVE ACTION
1. Improper valve lineup	1A. ENSURE that the following valves are open: 1.1A PSL-1997 Instrument Root Vlv 1.2A 1CA-V012 1.3A HV-1999 1.4A HV-1991 1.5A 1CA-V162
2. Loss of heating steam	2A. RESTORE Main or Auxiliary Steam supply <u>WHEN</u> possible.
3. PIC-2038 improperly set	3A. REQUEST SM/CRS to initiate corrective action.

Associated with Annunciator C8 F4

REFERENCES: M-29-1

DIGITAL ALARM POINT

D3631

NOMENCLATURE SETPOINT STEAM PACKING EXHAUST CONDENSER HIGH PRESSURE

< 5"WC VAC

DESCRIPTION ORIGIN Stm Packing Exhaust Condenser pressure high

PSH-1988

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** Steam Packing Exhaust Condenser pressure at 10-12 inches H₂O as indicated on A2499.
2. IF A2499 indicates pressure oscillations are occurring, **THEN PERFORM** the following:
 - a. Throttle **OPEN** V026 (V025) to increase vacuum until pressure oscillations stop. (Vacuum may be increased to a maximum of 20 inches H₂O.)

CAUSE CORRE	CTIVE ACTION
1. Stm Packing Exhaust Fan not running	1A. ENSURE that Stm Exhaust Fan A(B)K103 is running.
2. Exhaust fan inlet valve closed	2A. ENSURE that valves V026 (V025) are open.
3. Drain Trap DT144 clogged	3A. CLEAN AND REPLACE drain trap.
4. Condenser Water inlet/outlet valves closed	4A. ENSURE that (CONDENSATE - PRI CNDS FLOW PATH) HV-1660& HV-1661 OPEN is on. (Pnl 10C651C)
5. Loss of coolant water to Condenser	5A. ENSURE Condensate System is in service IAW HC.OP-SO.AP-0001(Q).

Associated with Annunciator C8 F4

REFERENCES:

J-29-0, Sht. 7
M-05-1, Sht. 1

M-29-1

DIGITAL ALARM POINT

D3632

NOMENCLATURE SSE LEVEL HI HI SETPOINT

12"
(80% indicated on LI-2010)

DESCRIPTION Stm Seal Evap lvl high high ORIGIN

LSHH-2010

AUTOMATIC ACTION:

HV-2013 STEAM SEAL EVAP FEED WTR VLV closes.

OPERATOR ACTION:

1. IF__ required,
MAINTAIN Steam Seal Evaporator level manually by throttling HV-2024 STEAM SEAL EVAP FEED WTR BYP VLV as necessary to maintain LI-2010 (MAIN STEAM INDICATION) STEAM SEAL EVAPORATOR LEVEL at 50%.
2. IF__ required,
TRANSFER Sealing Steam to Auxiliary Steam System as follows:
 - a. **ENSURE** Auxiliary Steam is available.
 - b. **ENSURE** HV-2037 SEALING STM SUPPLY AUX STM SHUT OFF is open.
 - c. **CLOSE** HV-1999 SEALING STM SUPPLY STM SEAL EVAP SHUT OFF.

CAUSE CORRE	CTIVE ACTION
1. Level Control Valve LV-2003 fail opened 2. Level instrument LT-2010 root valves not opened	1A. ENSURE instrument air is available for Control Valve. 1B. REQUEST SM/CRS to initiate corrective action. 2A. ENSURE V157 & V158 are open.

Associated with Annunciator C8 F4

REFERENCES: J-29-0, Sht. 2, Sht. 4, Sht. 7 Drawing J-L-5000 Sheet 247
M-29-1

DIGITAL ALARM POINT D3668

NOMENCLATURE DRYWELL CLR FAN "A" TROUBLE SETPOINT 1.2 inches water gauge

DESCRIPTION Drywell Cooler Fan(s) malfunction ORIGIN PDSL-9463A1 thru 9463H1

AUTOMATIC ACTION:

Standby fan auto starts.

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition.
2. IF necessary,
 ENTER HC.OP-AB.CONT-0001(Q), Drywell Pressure.
3. **DETERMINE** the Drywell Cooler that initiated the trouble alarm.
4. IF Drywell Cooler Fan(s) is stopped
 AND power is available,
 THEN ATTEMPT to restart.

CAUSE CORRE	CTIVE ACTION
1. Drywell Cooler stopped due to bus power failure, loss of control power, LOP <u>OR</u> LOCA	1A. ENSURE power <u>AND</u> control power are available to the Drywell Cooler Fan Motor(s).
2. Low flow condition	2A. DETERMINE <u>IF</u> a low flow condition exists by observing Control Room indication.
3. Fan trip	3A. RESET breaker IAW OP-HC-108-106-1001, Equipment Operational Control <u>AND RESTART.</u> 3B. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E6 A2

REFERENCES: H-86-0, Sht. 1, 3

DIGITAL ALARM POINT D3671

NOMENCLATURE INTAKE STRUCTURE HVAC TROUBLE SETPOINT Various

DESCRIPTION Intake Structure HVAC Panel 1EC581 Trouble ORIGIN 1EC581

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **DISPATCH** Equipment Operator to Intake Structure HVAC Panel 1EC581 to determine cause of alarm.
2. **ENSURE** compliance with the Service Water operability requirements of Technical Specifications 3.7.1.2.

CAUSE	CORRECTIVE ACTION
<ol style="list-style-type: none"> 1. Intake Structure Supply Fan Low Flow 2. Intake Structure Exhaust Fan Low Flow 3. Traveling Screen Motor Room Fan Low Flow 4. Traveling Screen Motor Room High/Low Temperature 	<ol style="list-style-type: none"> 1A. RESPOND IAW HC.OP-SO.GQ-0001(Q); Service Water Intake Structure Ventilation System Operation.

Associated Annunciator A1 F1

REFERENCES: E-6792
 H-95-0, Sht. 1

DIGITAL ALARM POINT

D3699

NOMENCLATURE SETPOINT HV F075 VAC BRKR ISLN
HV-F075

N/A

DESCRIPTION ORIGIN HV F075 VAC BRKR ISLN
HV-F075 not fully open

ZS-F075

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE limiting conditions for operation of Emergency Core Cooling Systems in accordance with Technical Specifications 3/4.5.1.

CAUSE CORRECTIVE ACTION	CORRECTIVE ACTION
1. Vacuum Breaker Valve HV-F075 closed	1A. OPEN HV-F075 VAC BRKR ISLN VLV, <u>WHEN</u> possible

Associated Annunciator B1 D5

REFERENCES: J-55-0, Sht. 11

DIGITAL ALARM POINT _____ **D3725**

NOMENCLATURE Room Damper Status (see below) **SETPOINT** Closed

DESCRIPTION TORUS ROOM 4102 ISLN
DAMPER 2 **ORIGIN** GUZS-9436A2

AUTOMATIC ACTION

Alarm Only

OPERATOR ACTION

1. **NOTIFY** SM/CRS of alarm condition.
2. **REFER** to HC.OP-AB.CONT-0003, Reactor Building, HC.OP-AB.BOP-0005 Main Steam Tunnel Temperature, OR EOP-103 as appropriate.
3. **DIRECT** Operator to monitor operation of exhaust dampers.

CAUSE CORRE	CTIVE ACTION
1. Room High Temperature.	1A REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E1 F5

REFERENCES: M-84-1 sht. 1

DIGITAL ALARM POINT D3737

NOMENCLATURE	CW PUMP A DISCHARGE HV-2152A	SETPOINT	N/A
DESCRIPTION	CW Pump discharge valve not in the proper position	ORIGIN	Logic Cabinet 1AC653

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR CW Pump amps
AND discharge valve position.

CAUSE CORRE	CTIVE ACTION
1. Malfunction of the CW Pump Discharge Valve Hydraulic Control Unit	1A. DISPATCH an operator to inspect the discharge valve, Hydraulic Control Unit, <u>AND</u> associated hydraulic piping for leaks.
2. Bound discharge valve	2A. REQUEST the CRS to initiate corrective action.
3. Malfunction of the valve position logic	3A. Same as 2A above.
4. Malfunctioning limit switch	4A. Same as 2A above.

Associated Annunciator A2 D4

REFERENCES: M-09-0, Sht. 1
J-09-0, Sht. 7, Sht. 16

DIGITAL ALARM POINT

D3738

NOMENCLATURE	<u>CS B 24VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray B 24VDC isolator power loss or input card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3756	CS B MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3757	CS CHAN B INVERTER POWER FAIL	CORE SPRAY LOOP B TROUBLE
D3159	CS LOOP B INJECTION LINE PRESS	CORE SPRAY LOOP B TROUBLE
D5492	RHR B/CS B/RCIC ALM TEST/INOP	ECCS B/RCIC TRIP UNIT TEST/INOP
D3768	CORE SPRAY CHAN B AUTO START	CORE SPRAY PUMP B START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3738

CAUSE	CORRECTIVE ACTION
1. Input isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker tripped	2A. CHECK <u>AND UNDER</u> the direction of SM/CRS RESET <u>IF</u> necessary, 120VAC Instrument Bus B 1BJ481, Breaker 1BJ481-18.
3. Blown fuse	3A. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 10 amps fuse F41B at Panel C618.
	3B. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 5 amps fuse F44B at Panel C618.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3739

NOMENCLATURE	<u>CS B 125VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray B 125VDC isolator power loss or output card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3756	CS B MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3757	CS CHAN B INVERTER POWER FAIL	CORE SPRAY LOOP B TROUBLE
D3159	CS LOOP B INJECTION LINE PRESS	CORE SPRAY LOOP B TROUBLE
D5492	RHR B/CS B/RCIC ALM TEST/INOP	ECCS B/RCIC TRIP UNIT TEST/INOP
D3768	CORE SPRAY CHAN B AUTO START	CORE SPRAY PUMP B START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3739

CAUSE	CORRECTIVE ACTION
1. Output isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker Tripped	2A. REFER TO HC.OP-AB.MISC-0002(Q) Crids / Overhead Annunciators. 2B. REQUEST SM/CRS to initiate corrective action.
3. Blown fuse	3A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3756

NOMENCLATURE	<u>CS B MANUAL INIT SWITCH ARMED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>CS B Manual Initiation Switch armed</u>	ORIGIN	<u>S22B MAN INIT SW</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

IF manual initiation is not required,
THEN **DISARM** B MAN INIT.

CAUSE CORRE	CTIVE ACTION
1. CS B Manual Initiation Switch armed	1A. <u>IF</u> manual initiation is not required, <u>THEN</u> DISARM the switch.

Associated Annunciator B3 C5

REFERENCES: J-52-0, Sht. 6

DIGITAL ALARM POINT

D3757

NOMENCLATURE CS CHAN B INVERTER PWR FAIL **SETPOINT** N/A

DESCRIPTION Loss of power from Inverter 1BD481 **ORIGIN** N/A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **OBSERVE** which instrument indication and alarms have been lost (Chan B).
2. **ENSURE** compliance with the operability requirements of T/S 3.5.1 and 3.6.3.

CAUSE CORRE	CTIVE ACTION
<p>1. Breaker tripped.</p> <p>2. Fuse Blown</p> <p>3. Inverter Failure</p>	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p style="text-align: center;"><u>NOTE</u></p> <p>Re-energization of the ECCS Trip Units will result in an ESF actuation, NOTIFY I&C to disable the trip units prior to re-energization.</p> </div> <p>1A. <u>IF</u> tripped, DETERMINE cause AND RESET.</p> <p>1B. CHECK CB 1BJ481-18 Vert Bd, RHR & CS Rly 10C618.</p> <p>2A. CHECK fuse 9B in Panel 10C618</p> <p>3A. REFER TO Inverter 1BD481 operating procedure HC.OP-SO.PN-0001(Q)</p>

Associated Annunciator B3 C3

REFERENCES: N1-A41-46-(1)-2
 J-52-0, Sht. 7, Sht. 8
 M-52-1

DIGITAL ALARM POINT

D3758

NOMENCLATURE	<u>CS C 24VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray C 24VDC isolator power loss or input card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3760	CS C MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3761	CS CHAN C INVERTER POWER FAIL	CORE SPRAY LOOP A TROUBLE
D5493	RHR C TRIP UNIT IN TEST/INOP	RHR C TRIP UNIT TEST/ INOP
D3769	CORE SPRAY CHAN C AUTO START	CORE SPRAY PUMP C START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)-11
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3758

CAUSE CORRE	CTIVE ACTION
<p>1. Input isolator card out of file</p> <p>2. Breaker tripped</p> <p>3. Blown fuse</p>	<p>1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.</p> <p>2A. CHECK <u>AND UNDER</u> the direction of SM/CRS RESET <u>IF</u> necessary, 120VAC Instrument Bus C 1CJ481, Breaker 1CJ481-20.</p> <p>3A. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 10 amps fuse F41A at Panel C617.</p> <p>3B. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 5 amps fuse F44A at Panel C617.</p>

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3759

NOMENCLATURE	<u>CS C 125VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray C 125VDC isolator power loss or output card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3760	CS C MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3761	CS CHAN C INVERTER POWER FAIL	CORE SPRAY LOOP A TROUBLE
D5493	RHR C TRIP UNIT IN TEST/INOP	RHR C TRIP UNIT TEST / INOP
D3769	CORE SPRAY CHAN C AUTO START	CORE SPRAY PUMP C START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3759

CAUSE	CORRECTIVE ACTION
1. Output isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker Tripped	2A. REFER TO HC.OP-AB.MISC-0002(Q) Crids / Overhead Annunciators 2B. REQUEST SM/CRS to initiate corrective action.
3. Blown fuses	3A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3760

NOMENCLATURE	<u>CS C MANUAL INIT SWITCH ARMED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>CS C Manual Initiation Switch armed</u>	ORIGIN	<u>S22C MAN INIT SW</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

IF manual initiation is not required,
THEN **DISARM** C MAN INIT.

CAUSE CORRE	CTIVE ACTION
1. CS C Manual Initiation Switch armed	1A. <u>IF</u> manual initiation is not required, <u>THEN</u> DISARM the switch.

Associated Annunciator B3 C5

REFERENCES: J-52-0, Sht. 6

DIGITAL ALARM POINT

D3761

NOMENCLATURE CS CHAN C INVERTER PWR FAIL **SETPOINT** N/A

DESCRIPTION Loss of power from inverter1CD481 **ORIGIN** N/A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **OBSERVE** which instrument indication and alarms have been lost (Chan C).
2. **ENSURE** compliance with the operability requirements of T/S 3.5.1 and 3.6.3.

CAUSE CORRE	CTIVE ACTION
<p>1. Breaker tripped.</p> <p>2. Fuse Blown</p> <p>3. Inverter Failure 1CD481</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><u>NOTE</u></p> <p>Re-energization of the ECCS Trip Units will result in an ESF actuation, NOTIFY I&C to disable the trip units prior to re-energization.</p> </div> <p>1A. <u>IF</u> tripped, DETERMINE cause AND RESET.</p> <p>1B. CHECK CB 1CJ481-20 Vert Bd, RHR & CS Rly 10C641.</p> <p>2A. CHECK fuse 9C in Panel 10C641</p> <p>3A. REFER TO Inverter operating procedure HC.OP-SO.PN-0001(Q).</p>

Associated Annunciator B3 C1

- REFERENCES:**
- N1-A41-46-(1)-2
 - J-52-0, Sht. 7, Sht. 8
 - M-52-1

DIGITAL ALARM POINT

D3762

NOMENCLATURE	<u>CS D 24VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray D 24VDC isolator power loss or input card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3764	CS D MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3765	CS CHAN D INVERTER POWER FAIL	CORE SPRAY LOOP B TROUBLE
D5490	RHR D TRIP UNIT IN TEST/INOP	RHR D TRIP UNIT TEST/ INOP
D3766	CORE SPRAY CHAN D AUTO START	CORE SPRAY PUMP D START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3762

CAUSE	CORRECTIVE ACTION
1. Input isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker tripped	2A. CHECK <u>AND UNDER</u> the direction of SM/CRS RESET if necessary, 120VAC Instrument Bus D 1DJ481, Breaker 1DJ481-20.
3. Blown fuse	3A. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 10 amps fuse F41D at Panel C640.
	3B. CHECK <u>AND REPLACE</u> <u>IF</u> necessary, 5 amps fuse F44D at Panel 10C640.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3763

NOMENCLATURE	<u>CS D 125VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray D 125VDC isolator power loss or output card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored.

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3764	CS D MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3765	CS CHAN D INVERTER POWER FAIL	CORE SPRAY LOOP B TROUBLE
D5490	RHR D TRIP UNIT IN TEST/INOP	RHR D TRIP UNIT TEST/ INOP
D3766	CORE SPRAY CHAN D AUTO START	CORE SPRAY PUMP D START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3763

CAUSE	CORRECTIVE ACTION
1. Output isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker Tripped	2A. REFER TO HC.OP-AB.MISC-0002(Q) Crids / Overhead Annunciators. 2B. REQUEST SM/CRS to initiate corrective action.
3. Blown fuse	3A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3764

NOMENCLATURE	<u>CS D MANUAL INIT SWITCH ARMED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>CS D Manual Initiation Switch armed</u>	ORIGIN	<u>S22D MAN INIT SW</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

IF manual initiation is not required,
THEN **DISARM** D MAN INIT.

CAUSE	CORRECTIVE ACTION
1. CS D Manual Initiation Switch armed	1A. <u>IF</u> manual initiation is not required, <u>THEN</u> DISARM the switch.

Associated Annunciator B3 C5

REFERENCES: J-52-0, Sht. 6

DIGITAL ALARM POINT

D3765

NOMENCLATURE CS CHAN D INVERTER PWR FAIL **SETPOINT** N/A

DESCRIPTION Loss of power from Inverter 1DD-481 **ORIGIN** N/A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **OBSERVE** which instrument indication and alarms have been lost (Chan D).
2. **ENSURE** compliance with the operability requirements of T/S 3.5.1 and 3.6.3.

CAUSE	CORRECTIVE ACTION
1. Breaker tripped. 2. Fuse Blown 3. Inverter Failure	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px; text-align: center;"> <p><u>NOTE</u></p> <p>Re-energization of the ECCS Trip Units will result in an ESF actuation, NOTIFY I&C to disable the trip units prior to re-energization.</p> </div> 1A. <u>IF</u> tripped, DETERMINE cause AND RESET . 1B. CHECK CB 1DJ481-20 Vert Bd, RHR & CS Rly 10C640. 2A. CHECK fuse 9A in Panel 10C640. 3A. REFER TO Inverter 1DD481 operating procedure HC.OP-SO.PN-0001(Q)

Associated Annunciator B3 C3

- REFERENCES:**
- N1-A41-46-(1)-2
 - J-52-0, Sht. 7, Sht. 8
 - M-52-1

DIGITAL ALARM POINT

D3766

NOMENCLATURE	<u>CORE SPRAY CHAN D AUTO START</u>	SETPOINT	-129" RPV(or) Drywell Pressure 1.68 psig
DESCRIPTION	<u>Core Spray Pump D running</u>	ORIGIN	LIS-691D or H (or) PIS-N694D or H 1/2 Twice Logic

AUTOMATIC ACTION:

Core Spray Pump D starts
AND Emergency Diesel Generator "D" starts.

OPERATOR ACTION:

1. **ENSURE** valid initiation signal is present.
2. IF not,
THEN STOP DP206 CORE SPRAY PUMP D.
3. **ENSURE** compliance with operability requirements of T/S 3.5.1.
4. **VERIFY** actuations/isolations IAW HC.OP-SO.SM-0001(Q), Isolation Systems Operation.

CAUSE CORRE		CTIVE ACTION	
1.	Valid initiation signal	1A.	ENSURE that Core Spray Pump D has started.
		1B.	REFER TO HC.OP-EO.ZZ-0101(Q) and/or HC.OP-EO.ZZ-0102(Q) as applicable.
2.	Malfunction of originating device	2A.	STOP Core Spray Pump D <u>AND REQUEST</u> SM/CRS to initiate corrective action.

Associated Annunciator B3 A4

- REFERENCES:**
- GEK Vol. VII, Part 1
 - J-52-0, Sht. 7
 - M-42-1 Sht. 2

DIGITAL ALARM POINT

D3767

NOMENCLATURE	<u>CORE SPRAY CHAN A AUTO START</u>	SETPOINT	-129" RPV (or) Drywell Pressure 1.68 psig
DESCRIPTION	<u>Core Spray Pump A running</u>	ORIGIN	LIS-N691A or E (or) PIS-N694A or E 1/2 Twice Logic

AUTOMATIC ACTION:

Core Spray Pump A starts
AND Emergency Diesel Generator "A" starts.

OPERATOR ACTION:

1. **ENSURE** valid initiation signal is present.
2. IF not,
THEN STOP AP206 CORE SPRAY PUMP A.
3. **ENSURE** compliance with operability requirements of T/S 3.5.1.
4. **VERIFY** actuations/isolations IAW HC.OP-SO.SM-0001(Q), Isolation Systems Operation.

CAUSE CORRE	CTIVE ACTION
1. Valid initiation signal	1A. ENSURE that Core Spray Pump A has started. 1B. REFER TO HC.OP-EO.ZZ-0101(Q) and/or HC.OP-EO.ZZ-0102(Q) as applicable.
2. Malfunction of originating device	2A. STOP Core Spray Pump A <u>AND REQUEST</u> SM/CRS to initiate corrective action.

Associated Annunciator B3 A1

REFERENCES: GEK Vol. VII, Part 1
J-52-0, Sht. 7
M-42-1, Sht. 2

DIGITAL ALARM POINT

D3768

NOMENCLATURE	<u>CORE SPRAY CHAN B AUTO START</u>	SETPOINT	<u>-129" RPV(or) Drywell Pressure 1.68 psig</u>
DESCRIPTION	<u>Core Spray Pump B running</u>	ORIGIN	<u>LIS-N691B or F (or) PIS-N694B or F ½ Twice Logic</u>

AUTOMATIC ACTION:

Core Spray Pump B starts
AND Emergency Diesel Generator "B" starts.

OPERATOR ACTION:

1. **ENSURE** valid initiation signal is present.
2. IF not,
 THEN STOP BP206 CORE SPRAY PUMP B.
3. **ENSURE** compliance with operability requirements of T/S 3.5.1.
4. **VERIFY** actuations/isolations IAW HC.OP-SO.SM-0001(Q), Isolation Systems Operation.

CAUSE	CORRECTIVE ACTION
1. Valid initiation signal	1A. ENSURE that Core Spray Pump B has started. 1B. REFER TO HC.OP-EO.ZZ-0101(Q) and/or HC.OP-EO.ZZ-0102(Q) as applicable.
2. Malfunction of originating device	2A. STOP Core Spray Pump B <u>AND REQUEST</u> SM/CRS to initiate corrective action.

Associated Annunciator B3 A3

- REFERENCES:**
- GEK Vol. VII, Part 1
 - J-52-0, Sht. 7
 - M-42-1 Sht. 2

DIGITAL ALARM POINT

D3769

NOMENCLATURE	<u>CORE SPRAY CHAN C AUTO START</u>	SETPOINT	-129" RPV (or) Drywell Pressure 1.68 psig
DESCRIPTION	<u>Core Spray Pump C running</u>	ORIGIN	LIS-N691C or G (or) PIS-N694C or G 1/2 Twice Logic

AUTOMATIC ACTION:

Core Spray Pump C starts
AND Emergency Diesel Generator "C" starts.

OPERATOR ACTION:

1. **ENSURE** valid initiation signal is present.
2. IF not,
THEN STOP CP206 CORE SPRAY PUMP C.
3. **ENSURE** compliance with operability requirements of T/S 3.5.1.
4. **VERIFY** actuations/isolations IAW HC.OP-SO.SM-0001(Q), Isolation Systems Operation.

CAUSE	CORRECTIVE ACTION
1. Valid initiation signal	1A. ENSURE that Core Spray Pump C has started. 1B. REFER TO HC.OP-EO.ZZ-0101(Q) and/or HC.OP-EO.ZZ-0102(Q) as applicable.
2. Malfunction of originating device	2A. STOP Core Spray Pump C <u>AND REQUEST</u> SM/CRS to initiate corrective action.

Associated Annunciator B3 A2

REFERENCES: GEK Vol. VII, Part 1
J-52-0, Sht. 7
M-42-1 Sht. 2

DIGITAL ALARM POINT

D3770

NOMENCLATURE	<u>CS A 24VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray A 24VDC isolator power loss or input card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3772	CS A MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3158	CS LOOP A OR B LINE BREAK CORE	SPRAY LINE BREAK
D3773	CS CHAN A INVERTER POWER FAIL	CORE SPRAY LOOP A TROUBLE
D3157	CS LOOP A INJECTION LINE PRESS	CORE SPRAY LOOP A TROUBLE
D5491	RHR A/CS A/HPCI ALM TEST/INOP	ECCS A/HPCI TRIP UNIT TEST/INOP
D3767	CORE SPRAY CHAN A AUTO START	CORE SPRAY PUMP A START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)-11
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3770

CAUSE CORRE	CTIVE ACTION
1. Input isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action
2. Breaker tripped	2A. CHECK <u>AND UNDER</u> the direction of SM/CRS, RESET <u>IF</u> necessary, 120VAC Instrument Bus A 1AJ481, Breaker 1AJ481-19.
3. Blown fuse	3A. CHECK <u>AND</u> REPLACE <u>IF</u> necessary, 10 amps fuse F41A at Panel C617. 3B. CHECK <u>AND</u> REPLACE <u>IF</u> necessary, 5 amps fuse F44A at Panel C617.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)-11
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3771

NOMENCLATURE	<u>CS A 125VDC PWR LOSS/CARD OUT</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>Core Spray A 125VDC isolator power loss or output card out of file</u>	ORIGIN	<u>N/A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE Emergency Core Cooling Systems operability limits of T/S 3.5.1.

NOTE

Due to optical isolation card trouble, the following alarms will not be annunciated on the panel. It is recommended that the associated parameters of digital points be monitored

Digital Point/ Indication	Nomenclature	Alarm Window Engraving
D3772	CS A MANUAL INIT SWITCH ARMED	CORE SPRAY MANUAL INIT SW ARMED
D3158	CS LOOP A OR B LINE BREAK CORE	SPRAY LINE BREAK
D3773	CS CHAN A INVERTER POWER FAIL	CORE SPRAY LOOP A TROUBLE
D3157	CS LOOP A INJECTION LINE PRESS	CORE SPRAY LOOP A TROUBLE
D5491	RHR A/CS A/HPCI ALM TEST/INOP	ECCS A/HPCI TRIP UNIT TEST/INOP
D3767	CORE SPRAY CHAN A AUTO START	CORE SPRAY PUMP A START

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3771

CAUSE CORRE	CTIVE ACTION
1. Output isolator card out of file	1A. CHECK the file for missing card <u>AND</u> <u>IF</u> missing, REQUEST SM/CRS to initiate corrective action.
2. Breaker Tripped	2A. REFER TO HC.OP-AB.MISC-0002(Q) Crids / Overhead Annunciators. 2B. REQUEST SM/CRS to initiate corrective action.
3. Blown fuses	3A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B3 C4

REFERENCES: N1-E21-1040-383(6A)
J-52-0, Sht. 7, Sht. 6

DIGITAL ALARM POINT

D3772

NOMENCLATURE	<u>CS A MANUAL INIT SWITCH ARMED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>CS A Manual Initiation Switch armed</u>	ORIGIN	<u>S22A MAN INIT SW</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

IF manual initiation is not required,
THEN DISARM A MAN INIT.

CAUSE CORRE	CTIVE ACTION
1. CS A Manual Initiation Switch armed	1A. <u>IF</u> manual initiation is not required, <u>THEN DISARM</u> the switch.

Associated Annunciator B3 C5

REFERENCES: J-52-0, Sht. 6

DIGITAL ALARM POINT

D3773

NOMENCLATURE CS CHAN A INVERTER PWR FAIL **SETPOINT** N/A

DESCRIPTION Loss of power from inverter1AD481 **ORIGIN** N/A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **OBSERVE** which instrument indication and alarms have been lost (Chan A).
2. **ENSURE** compliance with the operability requirements of T/S 3.5.1 and 3.6.3.

CAUSE	CORRECTIVE ACTION
1. Breaker tripped. 2. Fuse Blown 3. Inverter Failure 1AD481	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px; text-align: center;"> <p><u>NOTE</u></p> <p>Re-energization of the ECCS Trip Units will result in an ESF actuation, NOTIFY I&C to disable the trip units prior to re-energization.</p> </div> 1A. <u>IF</u> tripped, DETERMINE cause AND RESET . 1B. CHECK CB 1AJ481-19 Vert Bd, RHR & CS Rly 10C617. 2A. CHECK fuse 9A in Panel 10C617 3A. REFER TO Inverter operating procedure HC.OP-SO.PN-0001(Q).

Associated Annunciator B3 C1

- REFERENCES:**
- N1-A41-46-(1)-2
 - J-52-0, Sht. 7, Sht. 8
 - M-52-1

DIGITAL ALARM POINT D3827

NOMENCLATURE FUEL POOL CLG PMP DISCH TEMP SETPOINT 130°F

DESCRIPTION Fuel Pool Cooling Pump discharge temp. above normal ORIGIN TE-4683

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR the Refuel Pool Water temperature.

CAUSE CORRE	CTIVE ACTION
1. Improper SACS lineup to Fuel Pool Heat Exchanger AE202 and/or BE202.	1A. ENSURE SACS is properly aligned to supply cooling to Fuel Pool Heat Exchanger AE202 and/or BE202.
2. Fuel Pool Heat Exchanger Bypass Valve 1EC-V084 is open.	2A. CLOSE Fuel Pool Heat Exchanger Bypass Valve 1EC-V084.
3. Fuel Pool F/D system malfunction.	3A. DISPATCH an operator to Fuel Pool F/D Panel 10C305 to investigate F/D operation. 3B. IF the F/D System cannot be readily corrected BYPASS the F/D System as needed.
4. Loss of SACS cooling to the Fuel Pool Cooling Heat Exchangers.	4A. REFER TO HC.OP-AB.COOL-0002(Q), SAFETY/TURBINE AUXILIARIES COOLING SYSTEM.
5. Loss of service water cooling to SACS due to a SSWS malfunction.	5A. REFER TO HC.OP-AB.COOL-0001(Q), STATION SERVICE WATER.

Associated annunciator D1 D5

REFERENCES M-53-1, Sht. 1 M-11-1, Sht. 2
M-54-1, Sht. 1

DIGITAL ALARM POINT D3828

NOMENCLATURE SKIMMER SURGE TANK BT208 **SETPOINT** 22"
LEVEL - LSSL-4661B

DESCRIPTION Lo-lo level existing in Skimmer Surge Tank **ORIGIN** LSSL-4661B
BT208

AUTOMATIC ACTION:

1. Fuel Pool Cooling Pump BP211 trips.
2. HV-4676B and HV-4678 Fuel Pool Filter Demin Isolation Valves closes.

OPERATOR ACTION:

1. **CONFIRM** AUTOMATIC ACTION.
2. IF unable to re-start a FPCC Pump
THEN IMPLEMENT HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.

CAUSE CORRE	CTIVE ACTION
1. Loss of Instrument Air to Skimmer Surge Tank Level Control Valve LV-4660. 2. Fuel Pool Cooling System process piping leakage.	1A. RESTORE Instrument Air to Level Control Valve LV-4660 <u>OR</u> manually OPEN valve <u>IF</u> possible. 1B. ENSURE valve is in AUTO <u>AND</u> OPEN valve LV-4660. 2A. ENSURE proper Fuel Pool Cooling System valve lineup IAW applicable SAP/WCM lineup.

Associated annunciator D1 D5

REFERENCES M-53-1, Sht. 1 J-L 5000(A)-34
 J-53-0, Shts. 2, 6, & 10

DIGITAL ALARM POINT D3831

NOMENCLATURE SKIMMER SURGE TANK BT208 SETPOINT 22"
LEVEL - LSSL-4661A

DESCRIPTION Lo-lo level existing in Skimmer Surge Tank ORIGIN LSSL-4661A
BT208

AUTOMATIC ACTION:

1. Fuel Pool Cooling Pump AP211 trips.
2. HV-4676A Fuel Pool Filter Demin Isolation Valve closes.

OPERATOR ACTION:

1. **CONFIRM** AUTOMATIC ACTION.
2. IF unable to re-start a FPCC Pump
THEN IMPLEMENT HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.

CAUSE CORRE	CTIVE ACTION
1. Loss of Instrument Air to Skimmer Surge Tank Level Control Valve LV-4660.	1A. RESTORE Instrument Air to level Control Valve LV-4660 <u>OR</u> manually OPEN valve <u>IF</u> possible.
2. Fuel Pool Cooling System process piping leakage.	1B. ENSURE valve is in AUTO <u>AND</u> OPEN valve LV-4660.
	2A. ENSURE proper Fuel Pool Cooling System valve lineup IAW applicable SAP/WCM lineup.

Associated annunciator D1 D5

REFERENCES M-53-1, Sht. 1 J-L 5000(A)-34
 J-53-0, Shts. 2, 6, & 10

DIGITAL ALARM POINT D3832

NOMENCLATURE SKIMMER SURGE TANK BT208 SETPOINT 187"
 LEVEL - LSHH-4660

DESCRIPTION Hi-Hi level existing in Skimmer Surge Tank ORIGIN LSHH-4660
 BT208

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CONFIRM** level on Level Recorder LR-4661B Panel 10C650D.
2. IF__ required, **LOWER** fuel pool level back to normal level band IAW HC.OP-SO.EC-0001(Q), Section 5.17.

CAUSE CORRE	CTIVE ACTION
1. Failure of Skimmer Surge Tank BT208 level control valve LV-4660 to auto-close on a high Surge Tank level.	1A. CLOSE valve LV-4660 electrically <u>OR</u> manually <u>IF</u> possible.
2. Instrument line break down-stream of Excess Flow Check Valve XV-4660.	2A. CLOSE valve LV-4660 electrically <u>OR</u> manually <u>IF</u> possible.
3. Excessive makeup to the Fuel Storage Pool from the RHR System.	3A. REDUCE <u>OR STOP</u> RHR System makeup to the Fuel Storage Pool.
4. Excessive makeup to the Reactor Well from the CST.	4A. REDUCE <u>OR STOP</u> makeup to the Reactor Well from the CST by closing valves 1EC-V024, 1EC-V027, and/or 1EC-V049.
5. Excessive makeup to the Fuel Storage Pool from the SSWS Loop A and/or B.	5A. REDUCE <u>OR STOP</u> makeup to the Fuel Storage Pool via SSWS Loop A and/or B.

Associated annunciator D1 D5

REFERENCES M-53-1, Sht. 1 J-L 5000(A)-34

DIGITAL ALARM POINT D3833

NOMENCLATURE FUEL STORAGE POOL LEVEL HI SETPOINT 40' 6"

DESCRIPTION High water level in the Fuel Storage Pool ORIGIN LSH 4657

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CONFIRM** that the Fuel Pool HI/LO alarm setpoint has been reached.
2. **ACKNOWLEDGE** the FUEL POOL LEVEL HI/LO alarm.
3. IF__ required, **LOWER** fuel pool level back to normal level band IAW HC.OP-SO.EC-0001(Q), Section 5.17.

CAUSE CORRE	CTIVE ACTION
1. Excessive makeup to the Fuel Storage Pool.	1A. ENSURE HV-4660 SKIMMER SURGE TANK MAKEUP VALVE is closed. 1B. <u>IF</u> aligned, STOP makeup to the Fuel Pool Cooling Pumps from the CST. 1C. <u>IF</u> aligned, STOP makeup to the Fuel Storage Pool from the RHR System. 1D. <u>IF</u> ON in the Refueling mode, STOP the ECCS Pumps. 1E. ENSURE valves HV-4647 <u>AND</u> HV-4648 SSWS MAKEUP TO THE FUEL STORAGE POOL are closed. 1F. ALIGN the Fuel Pool System to reject the excessive water to the Condensate Storage Tank or CRW as necessary.
2. The Fuel Storage Pool Over-flow Weirs are blocked.	2A. REQUEST the SM/CRS to initiate corrective action.

Associated annunciator D1 A5

REFERENCES M-10-0, Sht. 2 M-51-1, Sht. 1; 2
 M-53-0, Sht. 1 J-53-0, Sht. 10

DIGITAL ALARM POINT D3834

NOMENCLATURE FUEL STORAGE POOL LEVEL LOW SETPOINT 39' 9"

DESCRIPTION Low water level in the Fuel Storage Pool ORIGIN LSH 4657

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CONFIRM** that the FUEL POOL HI/LO alarm setpoint has been reached.
2. **ENSURE** compliance with the operability requirements of T/S 3.9.9 WATER LEVEL-SPENT FUEL STORAGE POOL.
3. **ACKNOWLEDGE** the FUEL POOL LEVEL HI/LO alarm.
4. **REFER TO** HC.OP-AB.COOL-0004(Q) Fuel Pool Cooling.
5. **ACKNOWLEDGE** the low level alarm at Local Panel 10C214 (Rx. Bldg. El. 201').

NOTE

Annunciator on local Panel 10C214 is always valid for low Spent Fuel Pool level, however it is only enabled for the low Reactor cavity water level during refueling operations. The annunciator on local Panel 10C214 alarms on low Spent Fuel Pool level and/or low Reactor cavity water level when the annunciator is enabled.

CAUSE CORRE	CTIVE ACTION
1. Leakage past the Fuel Storage Pool Inner Gate(s) with drain valve(s) 1EC-V034, 1EC-V097, and/or 1EC-V182 open.	1A. ENSURE HV-4660 SKIMMER SURGE TANK MAKEUP VALVE is open. 1B. MONITOR Fuel Storage Pool gate(s) leakage rate <u>AND</u> <u>IF</u> high, ENSURE drain valves 1EC-V097, 1EC-V034 and 1EC-V182 are closed.

Associated annunciator D1 A5

- REFERENCES**
- | | |
|-----------------|-------------------|
| M-10-0, Sht. 2 | M-51-1, Sht. 1; 2 |
| DCP 4-HM-0660 | M-53-0, Sht. 1 |
| J-53-0, Sht. 10 | |

DIGITAL ALARM POINT D3834

CAUSE CORRECTIVE	ACTION
<p>1. (Continued)</p> <p>2. Evaporation of coolant from the Fuel Storage Pool.</p> <p>3. Leakage from RHR <u>IF</u> in Shutdown Cooling to support Refueling operations.</p>	<p>1C. MONITOR Reactor Building Sump leakage rates <u>AND</u> <u>IF</u> high, NOTIFY the SM/CRS to initiate corrective action.</p> <p>1D. <u>IF</u> water level is dropping <u>AND</u> time permits LINE UP makeup to the Fuel Storage Pool from the Condensate Storage Tank via the Fuel Pool Cooling Pump(s).</p> <p>1E. <u>IF</u> water level continues to drop MAINTAIN Fuel Storage Pool level using makeup from the RHR System.</p> <p>1F. <u>IF</u> Fuel Storage Pool level cannot be maintained ALIGN makeup from the Station Service Water System.</p> <p>1G. <u>IF</u> the appropriate entry criteria is satisfied IMPLEMENT the HCGS Emergency Plan.</p> <p>2A. ENSURE HV-4660 SKIMMER SURGE TANK MAKEUP VALVE is open.</p> <p>DETERMINE if leakage is from the RHR System.</p> <p>3B. <u>IF</u> leakage is from RHR, DETERMINE if RHR Pump trip <u>AND</u> isolation is necessary. (1BC-HV-F008, 1BC-HV-F009, 1BC-HV-F015A, 1BC-HV-F015B, require manual isolation <u>IF</u> HC.OP-GP.SM-0001(Q) has been implemented).</p>

DIGITAL ALARM POINT D3835

NOMENCLATURE Fuel/Cask Pool Gates Leakage SETPOINT 1' 3/4"

DESCRIPTION ORIGIN: Leakage past the Fuel Storage Pool and/or the Fuel Cask Storage Pit gates LSH-4668*

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** the Fuel Storage Pool and/or the Fuel Cask Storage Pit water level(s).
2. **ENSURE** compliance with the WATER LEVEL - SPENT FUEL STORAGE POOL requirements of Technical Specifications 3.9.9.
3. **VERIFY** proper valve alignment.
IF the gate area between the Fuel Pool and either the Reactor Well or Fuel Cask Pit is intentionally flooded, the affected leak detection drain (1-EC-V053 Fuel Storage Pool GT Seal Drn and/or 1-EC-V052 Fuel Cask Stor Pit GT Seal Drn must be isolated or D3835 will alarm.
4. Visually **IDENTIFY** the source of leakage at the refuel floor, if possible.
NOTE - This condition may be due to long term gate seal leakage.

To Clear The Alarm

OPEN 1-EC-V097 and 1-EC-V034 to drain LSH-4668
THEN, RE-CLOSE 1-EC-V097 and 1-EC-V034.

IF the alarm is received again in a short period of time
THEN IDENTIFY the Leakage Source and/or Qualitatively Estimate the Leak Rate as follows:

- a. **CLOSE** 1-EC-V052 and 1-EC-V053
- b. **DRAIN** LSH-4668 by opening 1-EC-V097 Fuel Pool/Fuel Cks GT Seal Drn Vlv
UNTIL the alarm clears
THEN, **RE-CLOSE** 1-EC-V097.
- c. **RE-OPEN** 1-EC-V052 and 1-EC-V053 alternately
UNTIL the alarm re-occurs.
5. **VERIFY** proper gate seal valve alignment and seal pressure.
6. IF the leak can be contained between the gates (visually verify),
ISOLATE the affected drain path (1-EC-V052 and/or 1-EC-V053) to minimize leakage through the switch to CRW. LSH-4668 may then be drained by opening 1-EC-V097 and reset to monitor the remaining drain path.
IF leakoff is desired, **OPEN** either 1-EC-V034 FP FC Gate Seal Hdr Drn to CRW
OR 1-EC-V033 FP F/C GT Seal Drn TO FPC to FPCC Pump suction.

* LSH-4668 is a float switch and flow will occur through the switch to CRW
WHEN in alarm unless the switch is isolated.

DIGITAL ALARM POINT D3835

CAUSE CORRECTIVE ACTION	CORRECTIVE ACTION
<p>1. Leakage past the Fuel Storage Pool inner gate(s) (i.e. from the Fuel Pool toward the Reactor Well or Fuel Cask Storage Pit).</p> <p>2. Leakage past the Fuel Cask Storage Pit removable blocks and outer gates.</p>	<p>1A. OPEN HV-4660 SKIMMER SURGE TANK MAKEUP VALVE to maintain Fuel Storage Pool water level as needed.</p> <p>1B. IF ACTION 1A is insufficient to maintain Fuel Storage Pool water level, ALIGN the RHR System to inject into the Fuel Storage Pool by opening valve 1EC-V060 and/or 1EC-V061.</p> <p>1C. MONITOR the Fuel Storage water level.</p> <p>1D. REQUEST the SM/CRS to initiate corrective action.</p> <p>2A. MAINTAIN the Fuel Cask Storage Pit water level within prescribed limits by opening valve(s) 1EC-V047, 1EC-V051 and/or 1EC-V032.</p> <p>2B. ALIGN makeup to the Fuel Cask Storage Pit via the Condensate Transfer System to maintain the water level within limits using valve 1EC-V049.</p> <p>2C. REQUEST the SM/CRS to initiate corrective action.</p>

Associated annunciator D1 B5

REFERENCES M-53-1, Sht. 1 JL-5000(A)-34
 J-53-0, Sht. 10, 11

DIGITAL ALARM POINT D3837

NOMENCLATURE Drywell/React Well Seal Lkg Leakage SETPOINT 0' 7 1/2"

DESCRIPTION Leakage past the Drywell to Reactor Well Seal ORIGIN LSH-4665*

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CONFIRM** that the DRYWELL/REACT WELL LKG alarm setpoint has been reached.
2. **MAINTAIN** the Reactor Well water level.
3. **ENSURE** compliance with the WATER LEVEL - REACTOR VESSEL requirements of Technical Specifications 3.9.8.
4. To prevent overflowing the Drywell to Reactor Well Seal Area, 1-EC-V095 and/or 1-EC-V085 should be opened to increase flow to CRW as necessary.
5. **DISPATCH** an operator to the Torus Room (RB 4102, 54 ft elev) to check the drywell shell, drywell pedestal and drains at the bottom of the drywell air gap for leakage.

CAUSE CORRE	CTIVE ACTION
1. Defective Drywell to Reactor Well Seal.	1A. DETERMINE Seal leakage by monitoring Reactor Well leakage rates and level. 1B. <u>IF</u> needed, ALIGN make up to the Reactor Well via the Fuel Pool Cooling Pump(s) by opening valves 1EC-V047, 1EC-V027 and/or 1EC-V024 to maintain the Reactor Well level within prescribed limits.

Associated annunciator D1 B5

REFERENCES M-53-1, Sht. 1 JL-5000(A)-34
J-53-0, Sht. 10, 11

* LSH-4665 is a float switch and flow will pass through the switch to CRW when in alarm.

DIGITAL ALARM POINT D3837

CAUSE CORRECTIVE	ACTION
<p>1. Defective Drywell to Reactor Well Seal. (Continued)</p>	<p>1C. ALIGN makeup to the Reactor Well via the Condensate Transfer System to maintain Reactor Well water level, <u>IF</u> needed, by using valve 1EC-V049.</p> <p>1D. REQUEST the SM/CRS to initiate corrective action.</p>

DIGITAL ALARM POINT D3838

NOMENCLATURE Vessel/Drywell Seal Leakage SETPOINT 2' 6 3/8"

DESCRIPTION Leakage past the Vessel to Drywell Seal ORIGIN LSH-4666*

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CONFIRM** that the VESSEL/DRYWELL SEAL LEAKAGE alarm setpoint has been reached.
2. **MAINTAIN** the Reactor Well water level within the prescribed limits.
3. **ENSURE** compliance with the WATER LEVEL - REACTOR LEVEL requirements of Technical Specifications 3.9.8.
4. **NOTIFY** HP Shift Tech of contaminated water leak into drywell from Reactor Well.
5. To prevent overflowing into the Drywell 1-EC-V028 and/or 1-EC-V094 should be opened to increase flow to CRW as necessary if drywell entry is possible.

CAUSE CORRE	CTIVE ACTION
1. Defective Vessel to Drywell Seal.	1A. DETERMINE Seal leakage by monitoring Reactor Well leakage rate and level. 1B. ALIGN make up to the Reactor Well via the Fuel Pool Cooling Pump(s) by opening valves 1EC-V047, 1EC-V027 and/or 1EC-V024 to maintain the Reactor Well level within prescribed limits, <u>IF</u> needed.

Associated annunciator D1 B5

REFERENCES M-53-1, Sht. 1 JL-5000(A)-34
J-53-0, Sht. 10, 11

* LSH-4666 is afloat switch and flow will pass through the switch to CRW when in alarm. LSH-4666 is located in the drywell.

DIGITAL ALARM POINT D3838

CAUSE CORRE	CTIVE ACTION
<p>1. Defective Vessel to Drywell Seal. (Continued)</p>	<p>1C. ALIGN makeup to the Reactor Well via the Condensate Transfer System to maintain Reactor Well water level, <u>IF</u> needed, by using valve 1EC-V047.</p> <p>1D. REQUEST the SM/CRS to initiate corrective action.</p>

DIGITAL ALARM POINT D3840

NOMENCLATURE TORUS WTR CLNUP PMP OP229 FLOW **SETPOINT** 300 gpm

DESCRIPTION Torus water cleanup system low flow **ORIGIN** FSL-4684

AUTOMATIC ACTION:

Torus Water Cleanup Pump OP229 trips after 15 second time delay.

OPERATOR ACTION:

1. **CONFIRM** AUTOMATIC ACTION.
2. **DISPATCH** an operator to Remote Panel 10C305 to investigate the cause of alarm.

CAUSE CORRE	CTIVE ACTION
1. Torus Water Cleanup Pump breaker 52-253014 <u>OR</u> thermal overloads have tripped, faulty control power fuse, <u>OR</u> faulty control power transformer.	1A. DISPATCH an operator to breaker to determine fault. <u>IF</u> the breaker <u>OR</u> thermal overloads have tripped <u>OR</u> the control power fuse has blown, INSPECT Pump/Motor OP229 for mechanical interference, low lube oil level, high motor temperature. 1B. NOTIFY the SM/CRS prior to resetting <u>OR</u> attempting to correct any breaker fault <u>OR IF</u> any pump/motor problems are detected.

Associated annunciator D1 C5

REFERENCES M-53-1, Sht. 2 E-0031-1, Sht. 1
 J-53-0, Sht. 3, 10; 11 J-102-0, Sht. 2, 3, 6, 8

DIGITAL ALARM POINT D3840

CAUSE CORRECTIVE	ACTION
<p>2. Improper valve lineup.</p> <p>3. Torus Water Cleanup Isolation Valves HV-4652, HV-4679, <u>AND</u> HV-4680, <u>AND</u> HV-4681 closed due to a containment isolation signal being present.</p> <p>4. Torus Water Cleanup System suction strainer plugged.</p> <p>5. Fuel Pool Filter Demin Hi D/P.</p>	<p>2A. ENSURE the proper Torus Water Cleanup System valve lineup.</p> <p>3A. CONFIRM that the containment isolation signal is valid.</p> <p>4A. BACK FLUSH the strainer.</p> <p>5A. PLACE another Filter Demin in service <u>AND REMOVE</u> the affected Filter Demin from service.</p>

DIGITAL ALARM POINT D3849

NOMENCLATURE FUEL POOL F/D BYP HV-4689A OPF SETPOINT N/A

DESCRIPTION Motor operated valve HV-4689A inoperative ORIGIN MCC 10B212

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE CORRE	CTIVE ACTION
<p>1. HV-4689A Fuel Pool F/D Bypass Valve inoperative due to:</p> <ul style="list-style-type: none"> a. breaker 52-212244 tripped b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty 	<p>1A. DISPATCH an operator to breaker 52-212244</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS <u>PRIOR</u> to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated annunciator D1 D5

REFERENCES E-0021-1, Sht. 1, 2 & 3

DIGITAL ALARM POINT D3850

NOMENCLATURE EMERG MKUP TO FUEL POOL LP A V SETPOINT N/A

DESCRIPTION Motor operated valve HV-4647 inoperative ORIGIN MCC 10B212

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE CORRE	CTIVE ACTION
<p>1. HV-4647 Spent Fuel Storage Pool Emergency Fill Valve inoperative due to:</p> <ul style="list-style-type: none"> a. breaker 52-212254 tripped b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty 	<p>1A. DISPATCH an operator to breaker 52-212254</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS <u>PRIOR</u> to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated annunciator D1 D5

REFERENCES E-0021-1, Sht. 1, 2 & 3

DIGITAL ALARM POINT D3853

NOMENCLATURE EMERG MKUP TO FUEL POOL LP B V SETPOINT N/A

DESCRIPTION Motor operated valve HV-4648 inoperative ORIGIN MCC 10B222

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE CORRE	CTIVE ACTION
<p>1. HV-4648 Spent Fuel Storage Pool Emergency Fill Valve inoperative due to:</p> <ul style="list-style-type: none"> a. breaker 52-222154 tripped b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty 	<p>1A. DISPATCH an operator to breaker 52-222154</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS <u>PRIOR</u> to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated annunciator D1 D5

REFERENCES E-0021-1, Sht. 1, 2 & 3

DIGITAL ALARM POINT D3854

NOMENCLATURE FUEL POOL F/D BYP HV-4689B OPF SETPOINT N/A

DESCRIPTION Motor operated valve HV-4689B inoperative ORIGIN MCC 10B222

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE CORRE	CTIVE ACTION
<p>1. HV-4689B Fuel Pool Filter Demin Bypass Valve inoperative due to:</p> <ul style="list-style-type: none"> a. breaker 52-222244 tripped b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty 	<p>1A. DISPATCH an operator to breaker 52-222244</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS <u>PRIOR</u> to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated annunciator D1 D5

REFERENCES E-0021-1, Sht. 1, 2 & 3

DIGITAL ALARM POINT D3855

NOMENCLATURE SSWS STRAINER B DIFF PRESSURE SETPOINT 138.55 inwc
(5 psid)

DESCRIPTION Hi Hi differential pressure ORIGIN PDSHH-2196B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **ENSURE** EA-HV-2197B SSW STRNR BKWSH VLV is open.
3. **DISPATCH** operator to Service Water Intake Structure to investigate problem .
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. Clogged filter 2. Hi system flow/Header break	1A. CHECK operation of strainer backwash system and strainer motor. 1B. CHECK strainer drive unit sheer pin. 1C. CHECK condition/operation of traveling screen. 2A. INVESTIGATE cause of excessive flow 2B. <u>WHEN</u> possible. RESTORE flow to normal.

Associated Annunciator A1 B3

REFERENCES: E-6754-0, Sht. A J-10-0, Sht. 19, Sht. 23

DIGITAL ALARM POINT D3857

NOMENCLATURE SSWS STRAINER A DIFF PRESSURE SETPOINT 138.55 in wc
(5 psid)

DESCRIPTION Hi Hi differential pressure ORIGIN PDSHH-2196A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **ENSURE** EA-HV-2197A SSW STRNR BKWSH VLV is open.
3. **DISPATCH** operator to Service Water Intake Structure to investigate problem.
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. Clogged filter	1A. CHECK operation of Strainer backwash system <u>AND</u> Strainer motor. 1B. CHECK Strainer drive unit sheer pin. 1C. CHECK condition/operation of traveling screen.
2. Hi system flow/Header break	2A. INVESTIGATE cause of excessive flow 2B. <u>WHEN</u> possible, RESTORE flow to normal.

Associated Annunciator A1 B1

REFERENCES: E-6754-0, Sht. A
J-10-0, Sht. 18, Sht. 23

	DIGITAL ALARM POINT	D3859
NOMENCLATURE	<u>SSWS STRAINER C DIFF PRESSURE</u>	SETPOINT 138.55 inwc (5 psid)
DESCRIPTION	<u>Hi Hi differential pressure</u>	ORIGIN <u>PDSHH-2196C</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **ENSURE** EA-HV-2197A SSW STRNR BKWSH VLV is open.
3. **DISPATCH** operator to Service Water Intake Structure to investigate problem .
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. Clogged filter	1A. CHECK operation of Strainer backwash system_and strainer motor. 1B. CHECK Strainer drive unit sheer pin. 1C. CHECK condition/operation of traveling screen.
2. Hi system flow/header break	2A. INVESTIGATE cause of excessive flow. 2B. <u>WHEN</u> possible, RESTORE flow to normal.

Associated Annunciator A1 C1

REFERENCES: E-6754-0, Sht. A
J-10-0, Sht. 19, Sht. 23

DIGITAL ALARM POINT D3861

NOMENCLATURE SSW LOOP A DUMP VLV LOCKED CLS SETPOINT N/A

DESCRIPTION HV-2356A Locked Closed ORIGIN HS-2356A

AUTOMATIC ACTION:

HV-2356A STATION SERVICE WATER LOOP A YARD DUMP VALVE closes.

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
<p>1. HS-2356A STATION SERVICE WATER LOOP A YARD DUMP VALVE Switch in LOCKOUT.</p>	<p>1A. <u>WHEN</u> proper Service Water flow is established, PRESS HS-2356A STATION SERVICE WATER LOOP A YARD DUMP VALVE AUTO PB.</p>

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 11, Sht. 23

DIGITAL ALARM POINT D3943

NOMENCLATURE SSW LOOP B DUMP VLV LOCKED CLS SETPOINT N/A

DESCRIPTION HV-2356B Locked Closed ORIGIN HS-2356B

AUTOMATIC ACTION:

HV-2356B STATION SERVICE WATER LOOP B YARD DUMP VALVE closes.

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
<p>1. HS-2356B STATION SERVICE WATER LOOP B YARD DUMP VALVE switch in LOCKOUT.</p>	<p>1A. <u>WHEN</u> conditions permit, PRESS HS-2356B STATION SERVICE WATER LOOP B YARD DUMP VALVE AUTO PB.</p>

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 11, Sht. 23

DIGITAL ALARM POINT D3945 – D3946

NOMENCLATURE SACS HX B1(B2) FLOW **SETPOINT** 8.0 psig
DESCRIPTION SACS Hx B1 Low Flow **ORIGIN** PDSL-2354B
 SACS Hx B2 Low Flow PDSL-2373B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **ENSURE** proper cooling flow to SACS AND RACS Heat Exchangers.
2. **OBSERVE** the Service Water System operability requirements of T/S 3.7.1.2.
3. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. SACS Hx Inlet Hdr Leak/Break	1A. REQUEST SM/CRS to initiate investigative action. <u>IF</u> room is flooding HAVE operator isolate SACS loop.
2. Loss of Running Service Water Pump	2A. RESTORE service water flow IAW HC.OP-SO.EA-0001(Q).
3. Improper valve lineup	3A. RESTORE proper valve lineup IAW HC.OP-SO.EA-0001(Q).

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 7, Sht. 23
 CD-273Y NRC Q410.66

DIGITAL ALARM POINT D3947 – D3948

NOMENCLATURE SACS HX A1(A2 FLOW) **SETPOINT** 8.0 psid

DESCRIPTION SACS Hx A1 Low Flow and HV-2371A full open
SACS Hx A2 Low Flow and HV-2355A full open **ORIGIN** PDSL-2354A
PDSL-2373A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **ENSURE** proper cooling flow to SACS AND RACS Heat Exchangers.
2. IF low flow cannot be corrected, **TRANSFER** to standby Service Water loop.
3. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. SACS Hx <u>OR</u> RACS Hx Inlet Hdr Leak/Break	1A. REQUEST SM/CRS to initiate investigative action. <u>IF</u> room is flooding HAVE operator isolate SACS loop.
2. Loss of Running Service Water Pump	2A. RESTORE service water flow IAW HC.OP-SO.EA-0001(Q).
3. Improper valve lineup	3A. RESTORE proper valve lineup IAW HC.OP-SO.EA-0001(Q).

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 6, Sht. 23
CD-273Y Q410.66 TASK NO.: 0001

DIGITAL ALARM POINT D3949

NOMENCLATURE	SSWS PUMP B LUBE WATER FLOW	SETPOINT	5 psig
	SSWS PUMP B GLAND TEMPERATURE		100 °F
DESCRIPTION	Low SSWS Pump B Lube Water Pressure	ORIGIN	PSL-2224B
	High SSWS Pump B Gland Temperature		TSH-2251B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** an operator to the Service Water Intake Structure to investigate the problem.
3. **ENSURE** compliance with the Service Water operability requirements of T/S 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
<ol style="list-style-type: none"> 1. Low lube water pressure (5 psig with BP502 running) High Gland Temperature (100 °F) 	<ol style="list-style-type: none"> 1A. ENSURE proper valve alignment, and system integrity. 1B. DETERMINE whether alarm is either Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (and take action) as follows: <ul style="list-style-type: none"> • VERIFY whether lubrication water supply pressure is adequate using 1EAPI-2224B (local). (This pressure should be > 5 psig based on existing low lubrication supply pressure alarm set point.) <u>IF</u> pressure is 5 psig or less, <u>THEN, SECURE</u> SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers • Visually VERIFY adequate packing gland leak-off flow is present from packing gland follower leak off line. (REMOVE tygon tubing from gland follower leak off line and visually witness steady stream of water) <u>IF</u> there is NOT a steady stream of packing leak off water and steam is being emitted from this leak off line, <u>THEN SECURE</u> SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. • MEASURE gland temperature sensor mounting plate temperature using calibrated pyrometer and validate metal temperatures in the vicinity of temperature probe at or above 100 °F. <u>IF</u> metal temperatures are NOT above alarm temperature set point of 100 °F, <u>THEN INITIATE</u> notification for maintenance to troubleshoot temperature switch (1EATSH-2251B) • MEASURE gland follower temperature just below upper adjustment flange. (This temperature should not exceed 120 °F (based on internal OE, reference notification 20189430) in an attempt to maintain SSW Pump lubrication/cooling water flow below 100 °F) <u>IF</u> gland follower temperature just below upper adjustment flange exceeds 120 °F <u>THEN SECURE</u> SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. 1C. <u>IF</u> alarm condition persists periodically RE-VALIDATE whether alarm is due to Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (Temporary Log) IAW above criteria.

Associated Annunciator A1 B3

REFERENCES:E-6754-0, Sht. A; J-10-0, Shts. 5, 23

		DIGITAL ALARM POINT	D3951
NOMENCLATURE	SSWS PUMP A LUBE WATER FLOW SSWS PUMP A GLAND TEMPERATURE	SETPOINT	5 psig 100 °F
DESCRIPTION	Low SSWS Pump A Lube Water Pressure High SSWS Pump A Gland Temperature	ORIGIN	PSL-2224A TSH-2251A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers, (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** an operator to the Service Water Intake Structure to investigate the problem.
3. **ENSURE** compliance with the Service Water operability requirements of T/S 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. Low lube water pressure (5 psig with AP502 running) High Gland Temperature (100 °F)	1A. ENSURE proper valve alignment, and system integrity. 1B. DETERMINE whether alarm is either Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (and take action) as follows: <ul style="list-style-type: none"> • VERIFY whether lubrication water supply pressure is adequate using 1EAPI-2224A (local). (This pressure should be > 5 psig based on existing low lubrication supply pressure alarm set point.) <u>IF</u> pressure is 5 psig or less, <u>THEN</u>, SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers • Visually VERIFY adequate packing gland leak-off flow is present from packing gland follower leak off line. (REMOVE tygon tubing from gland follower leak off line and visually witness steady stream of water) <u>IF</u> there is NOT a steady stream of packing leak off water and steam is being emitted from this leak off line, <u>THEN</u> SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. • MEASURE gland temperature sensor mounting plate temperature using calibrated pyrometer and validate metal temperatures in the vicinity of temperature probe at or above 100 °F. <u>IF</u> metal temperatures are NOT above alarm temperature set point of 100 °F, <u>THEN</u> INITIATE notification for maintenance to troubleshoot temperature switch (1EATSH-2251A) • MEASURE gland follower temperature just below upper adjustment flange. (This temperature should not exceed 120 °F (based on internal OE, reference notification 20189430) in an attempt to maintain SSW Pump lubrication/cooling water flow below 100 °F) <u>IF</u> gland follower temperature just below upper adjustment flange exceeds 120 °F <u>THEN</u> SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. 1C. <u>IF</u> alarm condition persists periodically RE-VALIDATE whether alarm is due to Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (Temporary Log) IAW above criteria.

Associated Annunciator A1 B1

REFERENCES: E-6754-0, Sht. A; J-10-0, Shts. 3, 23

NOMENCLATURE	SSWS PUMP D LUBE WATER FLOW	DIGITAL ALARM POINT	D3953
	SSWS PUMP D GLAND TEMPERATURE	SETPOINT	5 psig 100 °F
DESCRIPTION	Low SSWS Pump D Lube Water Pressure	ORIGIN	PSL-2224D
	High SSWS Pump D Gland Temperature		TSH-2251D

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** an operator to the Service Water Intake Structure to investigate the problem.
3. **ENSURE** compliance with the Service Water operability requirements of T/S 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. Low lube water pressure (5 psig with DP502 running) High Gland Temperature (100 °F)	1A. ENSURE proper valve alignment, and system integrity. 1B. DETERMINE whether alarm is either Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (and take action) as follows: <ul style="list-style-type: none"> • VERIFY whether lubrication water supply pressure is adequate using 1EAPI-2224D (local). (This pressure should be > 5 psig based on existing low lubrication supply pressure alarm set point.) IF pressure is 5 psig or less, THEN, SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers • Visually VERIFY adequate packing gland leak-off flow is present from packing gland follower leak off line. (REMOVE tygon tubing from gland follower leak off line and visually witness steady stream of water) IF there is NOT a steady stream of packing leak off water and steam is being emitted from this leak off line, THEN SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. • MEASURE gland temperature sensor mounting plate temperature using calibrated pyrometer and validate metal temperatures in the vicinity of temperature probe at or above 100 °F. IF metal temperatures are NOT above alarm temperature set point of 100 °F, THEN INITIATE notification for maintenance to troubleshoot temperature switch (1EATSH-2251D) • MEASURE gland follower temperature just below upper adjustment flange. (This temperature should not exceed 120 °F (based on internal OE, reference notification 20189430) in an attempt to maintain SSW Pump lubrication/cooling water flow below 100 °F) IF gland follower temperature just below upper adjustment flange exceeds 120 °F THEN SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. 1C. IF alarm condition persists periodically RE-VALIDATE whether alarm is due to Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (Temporary Log) IAW above criteria.

Associated Annunciator A1 C3

REFERENCES: E-6754-0, Sht. A; J-10-0, Shts. 5, 23

DIGITAL ALARM POINT D3960

NOMENCLATURE RBVS EXH RTM PNL C382 SETPOINT Various

DESCRIPTION Reactor Building HVAC Exhaust System trouble ORIGIN Multiple

AUTOMATIC ACTION:

Low flow condition on operating fan results in fan trip
AND auto start of standby fan(s).

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition.
2. **OBSERVE** Control Room indication to determine IF fan tripped.
3. **REFER TO** HC.OP-AB.CONT-0003(Q), Reactor Building.
4. **DISPATCH** operator to the Remote Control Panel 10C382 to determine cause of alarm.

CAUSE CORRE	CTIVE ACTION
1. Low flow (FSL-9420A, B, C)	1A. ENSURE standby fan(s) auto starts to maintain a negative pressure in Secondary Containment. 1B. <u>IF</u> insufficient exhaust fans available to maintain a negative pressure in Secondary Containment ISOLATE the Reactor Building AND START FRVS (Filtration Recirculation and Ventilation System). 1C. DIRECT operator to monitor damper operation to determined if a malfunction exists. This action requires a restart of the fan which may be undesirable.
Continued next page	

Associated Annunciator E6 C5

REFERENCES: E-6787-0 H-84-0, Sht. 1

DIGITAL ALARM POINT D3960

CAUSE CORRE	CTIVE ACTION
2. A(B,C)VH3 01 Filter high D/P (alarm setpoint 3.5 inches water gauge) PDSH-9420A, B, C	2A. DIRECT operator to determine filter D/P for the fan(s) in operation.
3. Exhaust air temperature high (alarm setpoint 120°F; TSH-9415 located at common inlet to Exhaust Filters)	3A. DISPATCH operator to check for steam leaks <u>AND</u> other room temperature alarms. 3B. RESPOND IAW HC.OP-AR.GR-0001(Q). 3C. REQUEST SM/CRS to initiate corrective action.

REFERENCES: E-6787-0 H-84-0, Sht. 1

DIGITAL ALARM POINT D3961

NOMENCLATURE RBVS SUPPLY RTM PNL C382 SETPOINT Various

DESCRIPTION Reactor Building HVAC Supply System
 trouble ORIGIN Multiple

AUTOMATIC ACTION:

Low flow condition on operating fan(s) results in fan trip
AND auto start of standby fan(s).

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** operator to the Remote Control Panel 10C382 to determine cause of alarm.
3. **OBSERVE** Control Room indication to determine
IF fan tripped.

CAUSE CORRE	CTIVE ACTION
1. Low flow (trip setpoint 30,000 cfm)	1A. ENSURE standby fan(s) auto start <u>AND</u> fan with low flow trips. 1B. DIRECT operator to monitor damper operation to determined <u>IF</u> a malfunction exists. This action requires a restart of the fan which may be undesirable. 1C. ALIGN ventilation to maintain a negative pressure in Secondary Containment (≤ -.50 inches water)
2. A(B,C)VH3 00 Filter high D/P (alarm setpoint 1.5 inches water gauge) PDSH-9368A, B, C	2A. DIRECT operator to determine filter D/P (PDI-9368)

Continued next page

Associated Annunciator E6 C5

REFERENCES: E-6787-0
 H-83-0, Sht. 1

DIGITAL ALARM POINT D3961

CAUSE CORRE	CTIVE ACTION
3. A(B,C)VH3 00 low temperature (alarm setpoint 35°F, TSL-9368A, B, C)	3A. ENSURE steam is available to Steam Heating Coils.
4. A(B,C)VH300 high temperature (alarm setpoint 65°F TSH-9368A,B,C)	4A. DIRECT operator to inspect Heating System to determine <u>IF</u> a malfunction exists.
5. Supply air temperature high (alarm setpoint 67°F, TSH-9369)	5A. DIRECT operator to inspect Heating System to determine malfunction.
6. Refueling Dampers in abnormal position	6A. Any one <u>OR</u> more dampers out of position for normal <u>OR</u> refueling operations. DIRECT operator to check dampers as indicated on H-83-0, Sht. 7 to determine which damper(s) have malfunctioned.
7. A(B,C)VH300 Roll Filter media runout ZAL-9368B	7A. RESPOND IAW HC.OP-AR.GR-0001(Q). 7B. REQUEST SM/CRS to initiate corrective action.

REFERENCES: E-6787-0
H-83-0, Sht. 1

DIGITAL ALARM POINT D3974

NOMENCLATURE SSWS STRAINER D DIFF PRESSURE SETPOINT 138.55 inwc
(5 psid)

DESCRIPTION Hi Hi differential pressure ORIGIN PDSHH-2196D

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **ENSURE** EA-HV-2197D SSW STRNR BKWSH VLV is open.
3. **DISPATCH** operator to Service Water Intake Structure to investigate problem.
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. Clogged filter	1A. CHECK operation of strainer backwash system <u>AND</u> strainer motor. 1B. CHECK strainer drive unit sheer pin. 1C. CHECK condition/operation of traveling screen.
2. Hi system flow/header break	2A. INVESTIGATE cause of excessive flow 2B. <u>WHEN</u> possible, RESTORE flow to normal.

Associated Annunciator A1 C3

REFERENCES: E-6754-0, Sht. A
J-10-0, Sht. 19, Sht. 23

NOMENCLATURE	SSWS PUMP C LUBE WATER FLOW	DIGITAL ALARM POINT	D3976
	SSWS PUMP C GLAND TEMPERATURE	SETPOINT	5 psig 100 °F
DESCRIPTION	Low SSWS Pump C Lube Water Pressure	ORIGIN	PSL-2224C
	High SSWS Pump C Gland Temperature		TSH-2251C

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** an operator to the Service Water Intake Structure to investigate the problem.
3. **ENSURE** compliance with the Service Water operability requirements of T/S 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. Low lube water pressure (5 psig with AP502 running) High Gland Temperature (100 °F)	<p>1A. ENSURE proper valve alignment, and system integrity.</p> <p>1B. DETERMINE whether alarm is either Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (and take action) as follows:</p> <ul style="list-style-type: none"> • VERIFY whether lubrication water supply pressure is adequate using 1EAPI-2224C (local). (This pressure should be > 5 psig based on existing low lubrication supply pressure alarm set point.) <u>IF</u> pressure is 5 psig or less, <u>THEN</u>, SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers • Visually VERIFY adequate packing gland leak-off flow is present from packing gland follower leak off line. (REMOVE tygon tubing from gland follower leak off line and visually witness steady stream of water) <u>IF</u> there is NOT a steady stream of packing leak off water and steam is being emitted from this leak off line, <u>THEN</u> SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. • MEASURE gland temperature sensor mounting plate temperature using calibrated pyrometer and validate metal temperatures in the vicinity of temperature probe at or above 100 °F. <u>IF</u> metal temperatures are NOT above alarm temperature set point of 100 °F, <u>THEN</u> INITIATE notification for maintenance to troubleshoot temperature switch (1EATSH-2251C) • MEASURE gland follower temperature just below upper adjustment flange. (This temperature should not exceed 120 °F (based on internal OE, reference notification 20189430) in an attempt to maintain SSW Pump lubrication/cooling water flow below 100 °F) <u>IF</u> gland follower temperature just below upper adjustment flange exceeds 120 °F <u>THEN</u> SECURE SSW Pump after ensuring required service water flow to SACS and RACS Heat Exchangers. <p>1C. <u>IF</u> alarm condition persists periodically RE-VALIDATE whether alarm is due to Low lube Water Pressure <u>AND/OR</u> a High Gland Temperature (Temporary Log) IAW above criteria.</p>

Associated Annunciator A1 C1

REFERENCES: E-6754-0, Sht. A; J-10-0, Shts. 5, 23

DIGITAL ALARM POINT D3977

NOMENCLATURE	<u>SEISMIC TROUBLE ALARM</u>	SETPOINT	<u>Multiple</u>
DESCRIPTION ORIGIN	<u>Seismic Occurrence at OBE alarm level</u>		<u>Various</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **DISPATCH** an operator to Local Panel 10C673 to validate alarm **AND RESET** IAW HC.OP-SO.SG-0001(Z) Seismic Instrumental System Operation.
2. **OBSERVE** Seismic Response Spectrum Annunciator (10C650C) **AND INDICATE** on Attachment C4-1 the lamps that are illuminated.
3. **RESET** in accordance with HC.OP-SO.SG-0001(Q).
4. **REQUEST** I&C to retrieve the earthquake record IAW I&C procedure.
5. **IMPLEMENT** procedure HC.OP-AB.MISC-0001(Q) Acts of Nature.
6. **REPORT** cause **AND** severity of alarm to SM/CRS.

CAUSE CORRE	CTIVE ACTION
1. Seismic event	1A. REQUEST SM/CRS to initiate corrective action. 1B. IMPLEMENT procedure HC.OP-AB.MISC-0001(Q) Acts of Nature.

Associated Annunciator C6 C4

DIGITAL ALARM POINT D3996 – D3997

NOMENCLATURE SACS HX A1 OUTLET HV-2371A OPF
 SACS LP A/CLG TWR HV-2357A OPF **SETPOINT** N/A

DESCRIPTION HV-2371A Overload/Power Failure
 HV-2357A Overload/Power Failure **ORIGIN** AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B212 HV-2371A Bkr 52-212133 SACS LP A HX A1E201 OUT. HV-2357A Bkr 52-212132 SACS LP A CLG OUT TO TWR 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D3998 – D3999

NOMENCLATURE	SACS HX B1 OUTLET HV-2371B OPF SACS LP B/CLG TWR HV-2357B OPF	SETPOINT	N/A
DESCRIPTION	HV-2371B Overload/Power Failure HV-2357B Overload/Power Failure	ORIGIN	BC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE the Service Water System operability requirements of T/S 3.7.1.2.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B222 HV-2371B Bkr 52-222133 SACS LP B HX B1E201 OUT. HV-2357B Bkr 52-222132 SACS LP B CLG OUT TO TWR. 1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u> , DIRECT Maintenance to inspect valve. [PR 970811169] 1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4000

NOMENCLATURE SACS HX A2 OUTLET HV-2355A OPF SETPOINT N/A

DESCRIPTION HV-2355A Overload/Power Failure ORIGIN CC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
<p>1. MOV inoperative</p> <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	<p>1A. DISPATCH an operator to MCC 10B232 Bkr 52-232032 SACS LP A HX A2E201 OUT.</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4002

NOMENCLATURE SACS HX B2 OUTLET HV-2355B OPF SETPOINT N/A

DESCRIPTION HV-2355B Overload/Power Failure ORIGIN DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE the Service Water System operability requirements of T/S 3.7.1.2.

CAUSE	CORRECTIVE ACTION
<p>1. MOV inoperative</p> <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	<p>1A. DISPATCH an operator to MCC 10B242 Bkr 52-242032 SACS LP B HX B2E201 OUT.</p> <p>1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting.</p> <p>1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u>, DIRECT Maintenance to inspect valve. [PR 970811169]</p> <p>1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4004 – D4005

NOMENCLATURE	SSW LP A DUMP HV-2356A OPF SSW LP A/RACS HX HV-2203 OPF	SETPOINT	N/A
DESCRIPTION	HV-2356A Overload/Power Failure HV-2203 Overload/Power Failure	ORIGIN	AC652 CC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B212 HV-2356A Bkr 52-212131 SERVICE WTR LOOP A DUMP HV-2203 Bkr 52-212232 RACS HX CLG LP A SPLY. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4006

NOMENCLATURE SSW LP B DUMP HV-2356B OPF SETPOINT N/A

DESCRIPTION HV-2356B Overload/Power Failure ORIGIN BC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE the Service Water System operability requirements of T/S 3.7.1.2

CAUSE	CORRECTIVE ACTION
<p>1. MOV inoperative</p> <p> a. breaker trip</p> <p> b. thermal overload</p> <p> c. control power fuse blown</p> <p> d. control power transformer failure</p> <p> e. breaker open</p>	<p>1A. DISPATCH an operator to MCC 10B222 Bkr 52-222131 SERVICE WTR LOOP B DUMP.</p> <p>1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting.</p> <p>1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4007

NOMENCLATURE SSW LP B/RACS HX HV-2204 OPF SETPOINT N/A

DESCRIPTION HV-2204 Overload/Power Failure ORIGIN BC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE the Service Water System operability requirements of T/S 3.7.1.2.

CAUSE	CORRECTIVE ACTION
<p>1. MOV inoperative</p> <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	<p>1A. DISPATCH an operator to MCC 10B222 Bkr 52-222191 SACS HX CLG LP B SPLY.</p> <p>1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting.</p> <p>1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u>, DIRECT Maintenance to inspect valve. [PR 970811169]</p> <p>1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4008 – D4009

NOMENCLATURE RACS HX INLET ISLN HV-2207 OPF
 RACS HX OUTLET ISLN HV-2346 OPF **SETPOINT** N/A

DESCRIPTION HV-2207 Overload/Power Failure
 HV-2346 Overload/Power Failure **ORIGIN** CC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B232 HV-2207 Bkr 52-232081 RACS HX CLG SUPPLY. HV-2346 Bkr 52-232082 RACS HX CLG OUTLET. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4010

NOMENCLATURE SSW PUMP A DISCH HV-2198A OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-553041

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** operator to SWIS MCC 10B553 to determine cause of alarm.
3. **ENSURE** compliance with the Service Water operability requirement of
 Technical Specification 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B553 BKR 52-553041 STN SERVICE WTR SYS DIS MOV. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 B1

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4011

NOMENCLATURE SSW STR A BCKWSH HV-2197A OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-553021

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MONITOR** Strainer differential pressure for signs of Strainer clogging.
2. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperature).
PLACE "C" SSW Pump I/S
IF necessary.
3. **DISPATCH** operator to SWIS MCC 10B553 to determine cause of alarm.
4. **ENSURE** compliance with the Service Water operability requirement of
 Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B553 BKR 52-553021 STN SERVICE WTR SYS BK WASH. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 B1

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4012

NOMENCLATURE SSW PUMP C DISCH HV-2198C OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-573041

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS AND SACS Heat Exchangers (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** operator to SWIS MCC 10B573 to determine cause of alarm.
3. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B573 BKR 52-573041 STN SERVICE WTR SYS DIS MOV. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 C1

REFERENCES: E-6754-0, Sht. A
J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4013

NOMENCLATURE SSW STR C BCKWSH HV-2197C OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-573021

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MONITOR** Strainer differential pressure for signs of strainer clogging.
2. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperature).
START "A" SSW Pump
IF necessary.
3. **DISPATCH** operator to SWIS MCC 10B573 to determine cause of alarm.
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B573 BKR 52-573021 STN SERVICE WTR SYS BK WASH. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 C1

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4034

NOMENCLATURE SSW PMP B DISCH V HV-2198B OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-563041

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** operator to SWIS MCC 10B563 to determine cause of alarm.
3. **ENSURE** compliance with the Service Water operability requirement
 of Technical Specification 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B563 BKR 52-563041 STN SERVICE WTR SYS DIS MOV. 1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u> , DIRECT Maintenance to inspect valve. [PR 970811169] 1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 B3

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4036

NOMENCLATURE SSW PUMP D DISCH HV-2198D OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-583041

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperatures).
2. **DISPATCH** operator to SWIS MCC 10B583 to determine cause of alarm.
3. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B583 BKR 52-583041 STN SERVICE WTR SYS DIS MOV. 1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u> , DIRECT Maintenance to inspect valve. [PR 970811169] 1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 C3

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4046

NOMENCLATURE SSW STR D BCKWSH HV-2197D OPF SETPOINT N/A

DESCRIPTION Thermal overload or loss of control power ORIGIN 52-583021

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

1. **MONITOR** Strainer differential pressure for signs of strainer clogging.
2. **MAINTAIN** required Service Water flow to RACS
AND SACS Heat Exchangers
 (**MONITOR** SACS & RACS temperature).
PLACE "B" SSW Pump I/S IF necessary.
3. **DISPATCH** operator to SWIS MCC 10B583 to determine cause of alarm.
4. **ENSURE** compliance with the Service Water operability requirement of Technical Specification 3/4.7.1.2.
5. **REFER** to HC.OP-AB.COOL-0001(Q); Station Service Water.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open 	1A. DISPATCH an operator to MCC 10B583 BKR 52-583021 STN SERVICE WTR SYS BK WASH. 1B. <u>IF</u> breaker is tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> the thermal overload relay is tripped, <u>THEN</u> , DIRECT Maintenance to inspect valve. [PR 970811169] 1D. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 C3

REFERENCES: E-6754-0, Sht. A
 J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4047 – D4048

NOMENCLATURE SSW LP A/EMER MKUP HV-2234 OPF
 SSW LP A/EMER MKUP HV-2236 OPF **SETPOINT** N/A

DESCRIPTION HV-2234 Overload/Power Failure
 HV-2236 Overload/Power Failure **ORIGIN** AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

None

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B212 HV-2234 Bkr 52-212221 FUEL POOL CLG MKUP WTR. HV-2236 Bkr 52-212222 FUEL POOL CLG MKUP WTR. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D1

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4049 – D4050

NOMENCLATURE	SSW LP B/EMER MKUP HV-2238B OPF SSW LP B/EMER MKUP HV-F073 OPF	SETPOINT	N/A
DESCRIPTION	HV-2238 Overload/Power Failure HV-F073 Overload/Power Failure	ORIGIN	BC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

OBSERVE the Service Water System operability requirements of T/S 3.7.1.2

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker open	1A. DISPATCH an operator to MCC 10B222 HV-2238 Bkr 52-222224 FUEL POOL CLG & M/U WATER. HV-F073 Bkr 52-222082 FUEL POOL & SACS LP B MAKEUP ISLN VLV 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator A1 D3

REFERENCES: J-10-0, Sht. 23, Sht. 28

DIGITAL ALARM POINT D4053

NOMENCLATURE	WTR CHILLER AK111 REMOTE PANEL	SETPOINT	Various
DESCRIPTION	AK111 Chiller Remote Control Panel Trouble Alarm	ORIGIN	Multiple

AUTOMATIC ACTION:

AK111 Chiller trips except on HI/LO CHILLER OUTLET TEMP.

OPERATOR ACTION:

DISPATCH EO to Chilled Water Panel 10C152 to determine cause of alarm.

CAUSE CORRE	CTIVE ACTION
1. Chiller AK111 Panel Alarm 2. Low Chiller Outlet Temp 3. High Chiller Outlet Temp	1A. RESPOND IAW HC.OP-AR.GB-0005(Q). 2A. OBSERVE AK111 restarts <u>WHEN</u> Chilled Wtr Outlet Temp 50°F. 3A. CHECK A2259 TURB BLDG COND CLR A OTLT TEMP < 100°F. 3B. CHECK TI-9489A CHW TEMP SPLY < 55°F on 10C651E. 3C. CHECK TI-9489B AK111 CHILLED WTR DISCH < 65°F.

Continued next page

Associated Annunciator E5 E1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT

D4053

CAUSE CORRE	CTIVE ACTION
<p>3. High Chiller Outlet Temp (continued)</p>	<p>3D. <u>IF</u> differential temperature between 3B <u>AND</u> 3C, listed above, is > 10°F PERFORM the following:</p> <ol style="list-style-type: none"> 1. START standby Chiller IAW HC.OP-SO.GB-0001(Q). 2. STOP effected Chiller IAW HC.OP-SO.GB-0001(Q). <p>3E. REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator E5 E1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT D4054

NOMENCLATURE WTR CHILLER BK111
REMOTE PANEL **SETPOINT** Various

DESCRIPTION BK111 Chiller Remote Control
Panel Trouble Alarm **ORIGIN** Multiple

AUTOMATIC ACTION:

BK111 Chiller trips except on HI/LO CHILLER OUTLET TEMP.

OPERATOR ACTION:

DISPATCH EO to Chilled Water Panel 10C152 to determine cause of alarm.

CAUSE CORRE	CTIVE ACTION
1. Chiller BK111 Panel Alarm 2. Low Chiller Outlet Temp 3. High Chiller Outlet Temp	1A. RESPOND IAW HC.OP-AR.GB-0005(Q). 2A. OBSERVE BK111 restarts <u>WHEN</u> Chilled Wtr Outlet Temp ≥ 50°F 3A. CHECK A2260 TURB BLDG COND CLR B OTLT TEMP < 100°F. 3B. CHECK TI-9489A CHW TEMP SPLY < 55°F on 10C651E. 3C. CHECK TI-9489B BK111 CHILLED WTR DISCH < 65°F.

Continued next page

Associated Annunciator E5 E1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT

D4054

CAUSE CORRE	CTIVE ACTION
<p>3. High Chiller Outlet Temp (continued)</p>	<p>3D. <u>IF</u> differential temperature between 3B <u>AND</u> 3C, listed above, is > 10°F PERFORM the following:</p> <ol style="list-style-type: none"> 1. START standby Chiller IAW HC.OP-SO.GB-0001(Q). 2. STOP effected Chiller IAW HC.OP-SO.GB-0001(Q). <p>3E. REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator E5 E1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT D4134

NOMENCLATURE ADS CH B DW PR BYP TIMER INIT SETPOINT Various

DESCRIPTION ADS Logic B High Drywell Pressure ORIGIN Multiple
 Bypass Timer running

AUTOMATIC ACTION:

ADS Logic B High Drywell Pressure Bypass Timer (5 minute) started.

OPERATOR ACTION:

VERIFY that the ADS High Drywell Pressure Bypass Timer initiation setpoint (RPV Level 1 ($\leq -129''$)) has been reached.

CAUSE CORRE	CTIVE ACTION
<p>1. The following ADS Logic B condition exist:</p> <p>RPV Level 1 ($\leq -129''$)</p>	<p>1A. REFER to HC.OP-EO.ZZ-0101(Q).</p>

Associated Annunciator C1 F3

REFERENCES: J-41-0, Sht. 13
 PN1-B21-1060-0063

DIGITAL ALARM POINT D4135

NOMENCLATURE ADS CH D DW PR BYP TIMER INIT SETPOINT Various

DESCRIPTION ADS Logic D High Drywell Pressure ORIGIN Multiple
 Bypass Timer running

AUTOMATIC ACTION:

ADS Logic D High Drywell Pressure Bypass Timer (5 minute) started.

OPERATOR ACTION:

VERIFY that the ADS High Drywell Pressure Bypass Timer initiation setpoint (RPV Level 1 ($\leq -129''$)) has been reached.

CAUSE CORRE	CTIVE ACTION
<p>1. The following ADS Logic D condition exist:</p> <p>RPV Level 1 ($\leq -129''$)</p>	<p>1A. REFER to HC.OP-EO.ZZ-0101(Q).</p>

Associated Annunciator C1 F3

REFERENCES: J-41-0, Sht. 13
 PN1-B21-1060-0063

DIGITAL ALARM POINT D4140

NOMENCLATURE SRV LO-LO SET DIV 4 ARMED SETPOINT 1047 psig

DESCRIPTION SRV LO LO SET Function Initiated ORIGIN Multiple

AUTOMATIC ACTION:

SRV PSV-F013P open

OPERATOR ACTION:

1. **VERIFY** AUTOMATIC ACTION
 AND MONITOR Reactor pressure.
2. **ENSURE** compliance with Technical Specification 3.6.2.1, Suppression Chamber temperature requirements.
3. IF it is necessary to prevent SRV Low-Low Set Function Initiation
 OR continued operation
 PLACE SRV PSV-F013P Control Switch to CLOSE.

CAUSE CORRE	CTIVE ACTION
<p>1. High Reactor pressure</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><u>NOTE</u></p> <p>PSV-F013P Open at 1047 psig, Close at 935 psig.</p> </div>	<p>1A. Same as above.</p>

Associated Annunciator C1 E5

REFERENCES: J-41-0, Sht. 13
 PN1-B21-1060-0063

DIGITAL ALARM POINT D4150

NOMENCLATURE CHW RB ISLN RTN HV-9532-1 OPF **SETPOINT** N/A

DESCRIPTION ORIGIN CHW Rx Bldg Isln Ret HV-9532-1 Overload/Power Failure 1CC652

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

ENSURE compliance with operability requirements of Technical Specifications 3.6.3 Primary Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker racked out 	1A. DISPATCH an EO to check MCC 10B232 CHILLED WTR SYS INBD ISLN 1GB-HV-9532-1 Brkr 52-232161 is ON. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E5 F1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT D4151

NOMENCLATURE SRV LO-LO SET DIV 2 ARMED SETPOINT 1047 psig

DESCRIPTION SRV LO LO SET Function Initiated ORIGIN Multiple

AUTOMATIC ACTION:

SRV PSV-F013H open

OPERATOR ACTION:

1. **VERIFY** AUTOMATIC ACTION
 AND MONITOR Reactor pressure.
2. **ENSURE** compliance with Technical Specification 3.6.2.1, Suppression Chamber temperature requirements.
3. IF it is necessary to prevent SRV Low-Low Set Function Initiation
 OR continued operation
 PLACE SRV PSV-F013H Control Switch to CLOSE.

CAUSE CORRE	CTIVE ACTION
<p>1. High Reactor pressure</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>PSV-F013H Open at 1047 psig, Close at 905 psig. Subsequent opening 1017 psig.</p> </div>	<p>1A. Same as above.</p>

Associated Annunciator C1 E5

REFERENCES: J-41-0, Sht. 13
 PN1-B21-1060-0063

DIGITAL ALARM POINT D4152

NOMENCLATURE CHW RB ISLN RTN HV-9532-2 OPF **SETPOINT** N/A

DESCRIPTION ORIGIN CHW Supply Rx Bldg Isln HV-9532-2 Overload/Power Failure 1CC652

AUTOMATIC ACTION:

Valve fails in present position.

OPERATOR ACTION:

ENSURE compliance with operability requirements of Technical Specifications 3.6.3 Primary Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker racked out	1A. DISPATCH an EO to check MCC 10B232 CHILLED WATER SYS ISLN 1GB-HV-9532-2 Brkr 52-232162 is ON. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E5 F1

REFERENCES: H-87-0, Sht. 1

DIGITAL ALARM POINT D4169

NOMENCLATURE BLR SUBSTA WTR PRETREAT HVAC SETPOINT Multiple

DESCRIPTION Alarm on Panel 00C591 ORIGIN Various

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **DISPATCH** operator to Panel 00C591 to determine the system effected and the cause of alarm.
2. **NOTIFY** SM/CRS of alarm condition.

CAUSE CORRE	CTIVE ACTION
1. Multiple Alarm inputs include: a) 0A(B)VH536 low flow/high DP FSL-9792A(B) b) 0A(B)VH537 low flow/high DP FSL-9794A(B) c) 00VH538 low flow/high DP FSL-9796 d) Boiler area temperature hi/low TSHL-9792 e) Substation temperature hi/low TSHL-9794 f) Wtr treatment temperature hi/low TSHL-9796	1A. RESPOND IAW HC.OP-AR.GF-0003(Z). 1B. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E6 F3

REFERENCES: H-95-0, Sht. 1
 E-6792-0

DIGITAL ALARM POINT D4204

NOMENCLATURE	<u>CONT ATM ANALYZER A O2 SETPOINT</u>	<u>4.25%</u>
DESCRIPTION	<u>Containment Hydrogen/Oxygen Analyzer 'A' High O2 Concentration</u>	ORIGIN <u>ASH-5041A</u>

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

- CHECK** Containment H2/O2 Analyzer 'A' HIGH O2 light is ON AND % O2 indication is > 4.25% on Containment Atmosphere Section of 10C650E.
- ENSURE** compliance with operability requirements of T/S 3.3.7.5 Accident Monitoring Instrumentation and 3.6.6.2 Drywell and Suppression Chamber Oxygen Concentration.

CAUSE CORRE	CTIVE ACTION
<ol style="list-style-type: none"> Containment de-inerted Air inleakage to Drywell 	<ol style="list-style-type: none"> 1A. CHECK Rx Operational Condition <u>AND ENSURE</u> compliance with operability requirements of T/S 3.6.6.2. 2A. IF Cntmt H2/O2 Analyzers 'A' <u>AND</u> 'B' indicates > 4.0% O2, REDUCE O2 conc < 4% IAW HC.OP-SO.GS-0001(Q) Containment Atmosphere Control System Operation. 2B. IF trend of Nitrogen makeup indicates excessive usage, REFER TO HC.OP-AB.CONT-0002(Q), Primary Containment.

Associated Annunciator E3 F5

REFERENCES: J-57-0; Sht. 10

DIGITAL ALARM POINT

D4213

NOMENCLATURE CONT ATM ANALYZER B O2 SETPOINT

4.25%

DESCRIPTION **ORIGIN** Containment Hydrogen/Oxygen Analyzer 'B' High O2 Concentration

ASH-5041B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CHECK** Containment H2/O2 Analyzer 'B' HIGH O2 light is ON AND % O2 indication is > 4.25% on Containment Atmosphere Section of 10650E.
2. **ENSURE** compliance with operability requirements of T/S 3.3.7.5 Accident Monitoring Instrumentation and 3.6.6.2 Drywell and Suppression Chamber Oxygen Concentration.

CAUSE CORRE	CTIVE ACTION
<ol style="list-style-type: none"> 1. Containment de-inerted 2. Air inleakage to Drywell 	<ol style="list-style-type: none"> 1A. CHECK Rx Operational Condition and ENSURE compliance with operability requirements of T/S 3.6.6.2. 2A. <u>IF</u> Cntmt H2/O2 Analyzers 'B' and 'A' indicates > 4.0% O2, REDUCE O2 conc. < 4% IAW HC.OP-SO.GS-0001(Q) Containment Atmosphere Control System Operation. 2B. <u>IF</u> trend of Nitrogen makeup indicates excessive usage, REFER TO HC.OP-AB.CONT-0002(Q),

Associated Annunciator E3 F5

REFERENCES: J-57-0; Sht. 10

DIGITAL ALARM POINT D4235

NOMENCLATURE H2/O2 ANALYZER A HV-5019A OPF SETPOINT **SETPOINT** N/A

DESCRIPTION Containment Hydrogen/ Oxygen Analyzer A HV-5019A Overload/Power Failure **ORIGIN** AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. Breaker open 	1A. DISPATCH an NEO to check 10B212 H2/O2 ANALY 'A' ISLN 1GS-HV-5019A Brkr 52-212162 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0; Sht. 10 J-57-0; Sht. 18

DIGITAL ALARM POINT D4237

NOMENCLATURE	H2/O2 ANALYZER A HV-4966A OPF	SETPOINT	N/A
DESCRIPTION	Containment Hydrogen/Oxygen Analyzer A HV-4966A Overload/Power Failure	ORIGIN	AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. Breaker open 	1A. DISPATCH an NEO to CHECK 10B212 H2/O2 ANALY 'A' ISLN 1GS-HV-4966A Brkr 52-212161 is ON. 1B. IF_ breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. IF_ OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT D4238

NOMENCLATURE	H2/O2 ANALYZER A H2 SPLY OPF	SETPOINT	N/A
DESCRIPTION	Containment Hydrogen/Oxygen Analyzer A HV-5741A Overload/Power Failure	ORIGIN	AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. breaker open 	1A. DISPATCH an NEO to check 10B212 H2/O2 ANALY 'A' H2 SPLY 1GS-HV-5741A Brkr 52-212151 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT D4243

NOMENCLATURE	H2/O2 ANALYZER B HV-4955B OPF	SETPOINT	N/A
DESCRIPTION	Containment Hydrogen/Oxygen Analyzer B HV-4955B Overload/ Power Failure	ORIGIN	BC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. Breaker open 	1A. DISPATCH an NEO to check 10B222 H2/O2 ANALY 'B' ISLN 1GS-HV-4955B Brkr 52-222152 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT D4250

NOMENCLATURE	H2/O2 ANALYZER A HV-4965A OPF	SETPOINT	N/A
DESCRIPTION	Containment Hydrogen/Oxygen Analyzer A HV-4965A Overload/Power Failure	ORIGIN	CC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. Breaker open 	1A. DISPATCH an NEO to check 10B232 H2/O2 ANALY 'A' ISLN 1GS-HV-4965A Brkr 52-232073 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT D4251

NOMENCLATURE	H2/O2 ANALYZER A HV-5022A OPF	SETPOINT	N/A
DESCRIPTION	Containment Hydrogen/Oxygen Analyzer A HV-5022A Overload/Power Failure	ORIGIN	CC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. Breaker open 	1A. DISPATCH an NEO to check 10B232 H2/O2 ANALY 'A' ISLN 1GS-HV-5022A Brkr 52-232093 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT D4255

NOMENCLATURE H2/O2 ANALYZER B HV-5022B OPF **SETPOINT** N/A

DESCRIPTION Containment Hydrogen/Oxygen Analyzer B HV-5022B Overload/Power Failure **ORIGIN** DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with operability requirements of T/S 3.6.3 Primary Containment Isolation Valves AND 3.3.7.5 Accident Monitoring Instrumentation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ul style="list-style-type: none"> a. Breaker trip b. Thermal overload c. Control power fuse blown d. Control power transformer failure e. breaker open 	1A. DISPATCH an NEO to check 10B242 H2/O2 ANALY 'B' ISLN 1GS-HV-5022B Brkr 52-242093 is ON. 1B. <u>IF</u> breaker or thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL can not be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E3 F5

REFERENCES: J-57-0, Sht. 10 J-57-0, Sht. 18

DIGITAL ALARM POINT

D4256

NOMENCLATURE SETPOINT DRYWELL PURGE EXH
HV-4951 OPF

N/A

DESCRIPTION ORIGIN Drywell Purge Exhaust
1GS-HV-4951 Overload/Power
Failure

DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with Technical Specifications 3.6.3 Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
<p>1. Loss of Control Power/Overload</p>	<p>1A. DISPATCH an EO to check 1DJ481 Class 1E Brk 1DJ481-11 is ON.</p> <p>1B. CHECK Fuse Panel 1YF404 for blown fuse (102' Cont Bldg).</p> <p>1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action</p>

Associated Annunciator E5 A4

REFERENCES: J-57-0, Sht. 11
J-57-0, Sht. 18

DIGITAL ALARM POINT

D4257

NOMENCLATURE SETPOINTS PURGE EXH
HV-4963 OPF

N/A

DESCRIPTION ORIGIN Suppression Chamber Purge
Exhaust 1GS HV-4963
Overload/Power Failure

DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with Technical Specifications 3.6.3 Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
<p>1. Loss of Control Power/Overload</p>	<p>1A. DISPATCH an EO to check 1DJ481 Class 1E Brkr 1DJ481-11 is ON.</p> <p>1B. CHECK Fuse Panel 1YF404 for blown fuse (102' Cont Bldg)</p> <p>1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.</p>

Associated Annunciator E5 A4

REFERENCES: J-57-0, Sht. 11
J-57-0, Sht. 18

DIGITAL ALARM POINT D4258

NOMENCLATURE	CONT RB N ₂ MKUP HV-4974 OPF	SETPOINT	N/A
DESCRIPTION	Nitrogen Makeup Isolation 1GS-HV-4974 Overload/Power Failure	ORIGIN	DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with Technical Specifications 3.6.3 Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power transformer failure d. breaker racked out	1A. DISPATCH EO to check NITROGEN MAKEUP ISOLATION 1GS-HV-4974 Brkr 52-242202 is ON. 1B. <u>IF</u> breaker <u>OR</u> thermal overloads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E5 C4

REFERENCES: J-57-0, Sht. 11
J-57-0, Sht. 18

DIGITAL ALARM POINT D4259

NOMENCLATURE	CONT RB N ₂ MKUP HV-4978 OPF	SETPOINT	N/A
DESCRIPTION	Nitrogen Makeup Isolation 1GS-SV-4978 Overload/Power Failure	ORIGIN	DC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with Technical Specifications 3.6.3 Containment Isolation Valves.

CAUSE CORRE	CTIVE ACTION
1. Loss of Control Power/Overload	1A. DISPATCH EO to check 1DJ481 CLASS 1E, CH A, 120V Inst Dist Pnl Brkr 1DJ481-11 is ON (137' Cont Bldg) 1B. CHECK Fuse Panel 1YF404 for blown fuse 1YF404-FU07 (102' Cont Bldg) 1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E5 C4

REFERENCES: J-57-0, Sht. 11
J-57-0, Sht. 18

DIGITAL ALARM POINT D4272

NOMENCLATURE	RECOMB A RHR WTR HV-5055A OPF	SETPOINT	N/A
DESCRIPTION	H ₂ Recombiner A RHR Water Supply HV-5055A Overload/Power Failure	ORIGIN	AC652

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **ENSURE** compliance with operability requirements of Technical Specifications 3.6.1.1 Primary Containment Integrity.
2. IF necessary,
USE alternate H₂ Recombiner IAW HC.OP-SO.GS-0003(Q); Containment Hydrogen Recombiner System Operation.

CAUSE CORRE	CTIVE ACTION
1. MOV inoperative <ol style="list-style-type: none"> a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure e. breaker racked out 	1A. DISPATCH an EO to check MCC 10B212 RECOMB 'A' SCBBR WTR ISLN 1GS-HV-5055A Bkr 52-212273 is ON. 1B. <u>IF</u> breaker <u>OR</u> thermal over loads are tripped, NOTIFY SM/CRS prior to resetting. 1C. <u>IF</u> OVLD/PWR FAIL cannot be cleared, REQUEST SM/CRS to initiate corrective action.

Associated Annunciator E5 C5

REFERENCES: J-58-0, Sht. 3; Sht. 4

DIGITAL ALARM POINT

D4276

CAUSE CORRE	CTIVE ACTION
1. Input/Output Isolator Card out of file	1A. REQUEST SM/CRS to initiate corrective action.
2. Input/Output Isolator Card failure	2A. REQUEST SM/CRS to initiate corrective action.
3. Input power breaker tripped	3A. CHECK 120 VAC Instrument Bus B 1BJ481 Brkr #18 (P618 Panel) for trip 3B. <u>WHEN</u> directed by SM/CRS RESET the breaker
4. Input power fuse blown	4A. CHECK AND REPLACE if necessary, 5 amp F48 fuse at Panel P618. 4B. CHECK AND REPLACE if necessary, 10 amp fuse F41B at Panel P618.
5. Output card power failure	5A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B1 F2

- REFERENCES:** N1-E51-1040-59(16)-15
 N1-E51-1040-59(5)-11
 N1-E51-1040-59(15)-18
 N1-E21-1040-383(6B) -10
 N1-E21-1040-383(6A) -11
 E-6769-0, Sht. 1; Sht. 2

DIGITAL ALARM POINT D4277

NOMENCLATURE RCIC CH D ISLN RESET **SETPOINT** N/A
REQUIRED

DESCRIPTION RCIC Channel D Isolation **ORIGIN** S25
Reset Switch in Reset

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

IF the logic is reset,
PLACE ISOLATION LOGIC D in NORMAL.

CAUSE CORRE	CTIVE ACTION
1. ISOLATION LOGIC D Switch placed in RESET	1A. IF_ logic resetting is complete, PLACE ISOLATION LOGIC D in NORMAL.

Associated Annunciator B1 D2

REFERENCES: J-50-0, Sht. 10
 N1-E51-1040-59(17)-8
 N1-E51-1040-59(8)-17

DIGITAL ALARM POINT

D4280

CAUSE CORRE	CTIVE ACTION
1. Input/Output Isolator Card out of file	1A. REQUEST SM/CRS to initiate corrective action.
2. Input/Output Isolator Card failure	2A. REQUEST SM/CRS to initiate corrective action.
3. Input power breaker tripped	3A. CHECK 120 VAC Instrument Bus D 1DJ481 Brkr #20 (P640 Pnl) for trip. 3B. <u>WHEN</u> directed by SM/CRS RESET the breaker.
4. Input power fuse blown	4A. CHECK AND REPLACE if necessary, 5 amp F46 fuse at Panel P640. 4B. CHECK AND REPLACE if necessary, 10 amp fuse F41D at Panel P640.
5. Output Card power failure	5A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B1 F2

- REFERENCES:** N1-E51-1040-59(16)-15
 N1-E51-1040-59(5)-11
 N1-E51-1040-59(15)-18
 N1-E21-1040-383(6B) -10
 N1-E21-1040-383(6A) -11
 E-6769-0, Sht. 1; Sht. 2

DIGITAL ALARM POINT

D4282

NOMENCLATURE SETPOINT PI-R603 TURB EXH DIAPH
B/F RUPTD

> 10 psig

DESCRIPTION ORIGIN PI-R603 Turbine exhaust
diaphragm ruptured

PISH-N655B
PISH-N655F

AUTOMATIC ACTION:

IF the signal is from BOTH the sensors, Turbine trips under Auto-Isolation, otherwise alarm only

OPERATOR ACTION:

1. **VALIDATE** alarm by checking PI-R603 TURBINE EXH PRESS (Blue)
2. **ENSURE** compliance with operability requirements of Technical Specifications 3.7.4, 3.3.2.

CAUSE CORRE	CTIVE ACTION
1. HV-F059 TURBINE EXHAUST VLV is closed. 2. Check Valve V003 is stuck closed. 3. Mechanical failure of diaphragm	1A. ENSURE HV-F059 TURBINE EXHAUST VLV is open. 2A. REQUEST SM/CRS to initiate corrective action. 3A REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B1 B1

- REFERENCES:** J-50-0, Sht. 10
- N1-E51-1040-59(9)-16
 - N1-E51-1040-59(6)-18
 - N1-E51-1040-59(10)-15

DIGITAL ALARM POINT D4283

NOMENCLATURE RCIC STEAM SUPPLY PRESS B/F **SETPOINT** < 64.5 psig w/4sec TD

DESCRIPTION RCIC Steam Supply Pressure low **ORIGIN** PISL-N658B or PISL-N658F

AUTOMATIC ACTION:

RCIC Div 2 isolation
AND Turbine trip

OPERATOR ACTION:

1. **RESET** System Logic B
WHEN directed by SM/CRS in accordance with HC.OP-SO.BD-0001(Q).
2. **OBSERVE** limiting conditions for operation of RCIC System in accordance with Technical Specifications 3.7.4, 3.3.2.

CAUSE CORRE	CTIVE ACTION
1. Improper valve lineup	1A. ENSURE proper valve lineup IAW HC.OP-SO.BD-0001(Q).
2. Low Reactor pressure	2A. ----
3. Steam supply line break	3A. CHECK the following for abnormalities: <ol style="list-style-type: none"> 1. PI-602 TURBINE INL PRESS 2. PI-R603 TURBINE EXH PRESS 3. SI-4280-1 TURBINE SPEED

Associated Annunciator B1 C1

REFERENCES: J-49-0, Sht. 15 N1-E51-1040-59(10)-15
N1-E51-1040-59(8)-17

DIGITAL ALARM POINT

D4287

NOMENCLATURE SETPOINT PI-R603 TURB EXH DIAPH
D/H RUPTD

> 10 psig

DESCRIPTION ORIGIN PIC turbine exhaust
diaphragm ruptured

PISH-N655D
PISH-N655H

AUTOMATIC ACTION:

IF the signal is from BOTH the sensors, turbine trips under auto-isolation, otherwise alarm only

OPERATOR ACTION:

1. **VALIDATE** alarm by checking PI-R603 TURBINE EXH PRESS (Blue)
2. **ENSURE** compliance with operability requirements of Technical Specifications 3.7.4, 3.3.2.

CAUSE CORRECTIVE ACTION	CORRECTIVE ACTION
<ol style="list-style-type: none"> 1. HV-F059 TURBINE EXHAUST VLV is closed. 2. Check Valve V003 is stuck closed. 3. Mechanical failure of diaphragm 	<ol style="list-style-type: none"> 1A. ENSURE HV-F059 TURBINE EXHAUST VLV is open. 2A. REQUEST SM/CRS to initiate corrective action. 3A. REQUEST SM/CRS to initiate corrective action.

Associated Annunciator B1 B1

- REFERENCES:**
- J-50-0, Sht. 10
 - N1-E51-1040-59(9)-16
 - N1-E51-1040-59(6)-18
 - N1-E51-1040-59(10)-15

DIGITAL ALARM POINT D4288

NOMENCLATURE SETPOINT RCIC STEAM SUPPLY PRESS D/H < 64.5 psig w/4sec TD

DESCRIPTION RCIC Steam Supply Pressure low **ORIGIN** PISL-N658D or PISL-N658H

AUTOMATIC ACTION:

RCIC Div 4 isolation
AND Turbine trip

OPERATOR ACTION:

1. **RESET** System Logic D
WHEN directed by SM/CRS in accordance with HC.OP-SO.BD-0001(Q).
2. **OBSERVE** limiting conditions for operation of RCIC System in accordance with Technical Specifications 3.7.4, 3.3.2.

CAUSE CORRE	CTIVE ACTION
1. Improper valve lineup	1A. ENSURE proper valve lineup IAW HC.OP-SO.BD-0001(Q).
2. Low Reactor pressure	2A. ----
3. Steam supply line break	3A. CHECK the following for abnormalities: <ol style="list-style-type: none"> 1. PI-602 TURBINE INL PRESS 2. PI-R603 TURBINE EXH PRESS 3. SI-4280-1 TURBINE SPEED

Associated Annunciator B1 C1

REFERENCES: J-49-0, Sht. 15 N1-E51-1040-59(8)-17 N1-E51-1040-59(10)-15