HOPE CREEK GENERATING STATION

HC.OP-AR.ZZ-0011(Q) - Rev. 53

OVERHEAD ANNUNCIATOR WINDOW BOX C6

USE CATEGORY: II

- 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

REVISION SUMMARY

- Changes Attachment B5 for the CRIDS replacement computer. This was evaluated in 80095687 and is editorial. (60082603-1000)

IMPLEMENTATION REQUIREMENTS **Effective Date 5/3/10**

None

OVERHEAD ANNUNCIATOR WINDOW BOX C6

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ATTACHMENT A1

RSP/RSS

TAKEOVER

Window Location C6-A1

OPERATOR ACTION:

1. IF plant control has been transferred outside the Main Control Room, **ENSURE** a qualified operator has been dispatched to the Remote Shutdown Panel AND has implemented HC.OP-IO.ZZ-0008(Q); Shutdown from Outside the Control Room.
2. IF plant control has not been transferred outside the Main Control Room, **DISPATCH** an operator to the RSP/Local Panel/MCC to determine why one OR more of the Transfer/Remote Control Switches have been taken out of the "normal operations" position.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D4828	CH A REMOTE S/D PNL TAKE OVER	Control of Channel A Class 1E RHR, SACS and Fuel Pool Cooling Equipment is transferred to the Remote Shutdown Panel.
D4829	CH B REMOTE S/D PNL TAKE OVER	Control of Channel B Class 1E RHR, RCIC, SSWS, Safety Relief Valves, SACS, Chiller and Fuel Pool Cooling Equipment is transferred to the Remote Shutdown Panel.

REFERENCES:

E-6782-0, Sht. 1, 2
J-43-1, Sht. 8
J-11-1, Sht. 31
J-103-1, Sht. 5, 6, 7, 8
J-53-1, Sht. 2
J-41-1, Sht. 13
J-49-1, Sht. 2
J-101-1, Sht. 5, 6, 11, 13
J-51-1, Sht. 24, 27, 28
H-90-0, Sht. 2

ATTACHMENT A1

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D4830	CH C REMOTE S/D PNL TAKE OVER	Control of Channel C Class 1E RBVS Equipment is transferred to the RSP.
D4831	CH D REMOTE S/D PNL TAKE OVER	Control of Channel D Class 1E RCIC, RBVS, RHR, SACS, SSWS and Chiller Systems are transferred to the Remote Shutdown Panel.
D4832	NON-1E REMOTE S/D PNL TAKEOVER	Control of Reactor Recirc Pump BP201 Discharge Valve HV-F031B is transferred to the RSP and the valve closes IF open.
D4833	PSV-F013A&E CTRL TKOVR AT C631	ADS Valve(s) PSV-F013A and/or F013E open from Local Panel 10C631.
D4834	CH A MCC RSS TAKE OVER	Division 1 RHR, SACS and SSWS Valve(s) are being controlled from MCC(s) 10B212 (various cubicles) and/or 10B451 Cubicle 012.
D4835	CH C MCC RSS TAKE OVER	SACS Valve EG-HV-2496C is being controlled from MCC 10B232 Cubicle 142.
D4836	CH D MSS RSS TAKE OVER	RHR Valve BC-HV-F015A is being controlled from MCC 10B481 Cubicle 062.

ATTACHMENT A2

RAD MONITOR **COMPUTER** **TROUBLE**	**Window Location** **C6-A2** **Setpoint** Various **Origin** RMS COMPUTERS (RM-11)

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition AND possible system shutdown.
2. **GENERATE** a Notification [to Computer Group] to investigate AND take corrective alarm.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
LOCAL	RM-11 1 & 2 CPUs Control Bldg. El. 162' RMS Computer Room	None

REFERENCES: DCP No. 4-HM-0653
DCP 80067994

ATTACHMENT A3

MN STM LINE **RADIATION** **HI**

Window Location **C6-A3**

OPERATOR ACTION:

IMPLEMENT abnormal procedure HC.OP-AB.RPV-0008(Q), Reactor Coolant Activity.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
N/A	High steam tunnel gamma radiation as detected from RE-N006 (A, B, C, D) at a level of 1.5x normal full power background.	Alarm only

REFERENCES: M-26-1, Sht. 1
J-26-0, Sht. 2
GEK-90300, Vol. IV, Part

ATTACHMENT A4

REMOTE

MUX SYSTEM

TROUBLE

Window Location **C6-A4**

NOTE

All indications and non-control functions of the Circulating Water System may be affected by the terminal malfunction.

OPERATOR ACTION:

1. **DISPATCH** an operator to the affected Multiplex Unit to determine which terminal has the malfunction.
2. **REQUEST** the SM/CRS to initiate corrective action.
3. **STATION** an operator at the Circulating Water Structure IF determined necessary.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2426	MUX AC676 POWER SUPPLY WARNING	Alarm only
D2427	MUX AC676 POWER SUPPLY	Terminal station transfers to standby operation
D2428	MUX AC676 DIRECTROL SYS FAULT	Terminal station transfers to standby operation
D2429	MUX BC676 POWER SUPPLY WARNING	Alarm only
D2430	MUX BC676 POWER SUPPLY	Terminal station transfer to standby operation.
D2431	MUX 0C536 POWER SUPPLY WARNING	Alarm only
D2432	MUX 0C536 POWER SUPPLY	Terminal station transfers to standby operation

REFERENCES: J-108-0, Sht. 8
E-6797-0, Sht. 1
HC-118-02 Cutler-Hammer Directrol Multiplexer Technical Manual

ATTACHMENT B1

DLD	**Window Location** C6-B1
SYSTEM	**Setpoint** Multiple
ALARM/TRBL	**Origin** Various

OPERATOR ACTION:

1. **CHECK** DRYWELL NOBLE GAS module 1SK-RI-4991, DRYWELL COOLER CONDENSATE FLOW module 1SK-FI-4381 AND DRYWELL SUMP LEVEL module 1SK-LI-4930 on Panel 10C604 for ALERT/HIGH LED lit
   OR OPERATE LED extinguished on active channels.
2. IF alarm is high radiation (HIGH LED lit on 1SK-RI4991)
   NOTIFY Radiation Protection to obtain a grab sample.
3. IF alarm is downscale (OPERATE LED extinguished)
   CHECK power supply energized.
4. **NOTIFY** SM/CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
1SK-RI-4991	DRYWELL NOBLE GAS radiation HIGH LED lit OR downscale OPERATE LED extinguished	None
1SK-FI-4381	DRYWELL COOLER CONDENSATE FLOW high flow HIGH LED lit, downscale OPERATE LED extinguished OR total flow rate (Ch 3) HIGH LED lit	None

REFERENCES:

M-25-1, Sht. 1
M-26-1, Sht. 2
M-41-1, Sht. 1
M-43-1, Sht. 1
M-77-1
M-87-1, Sht. 2
J-25-0, Sht. 12
J-4025-0, Sht. 1, 2
E6795-0, Sht. 2
J-R 1000-0

ATTACHMENT B1

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
1SK-LI-4930	DRYWELL SUMP LEVEL Flow (high flow ALERT LED lit, Failure(OPERATE LED extinguished) OR total flow rate (Ch 3) (ALERT LED lit)	None

ATTACHMENT B1

ALARM POINT 1SK-RI4991

NOMENCLATURE	DRYWELL NOBLE GAS Radiation	**SETPOINT**	High $5.0x10^{-3}$ uC/cc Downscale N/A
DESCRIPTION	High radiation from Drywell Rad Monitoring Sample System (HIGH LED lit) or downscale (OPERATE LED extinguished)	**ORIGIN**	1SK-RE4991

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high radiation (HIGH LED lit)
   CHECK other parameters for indication of leakage in Drywell (e.g. sumps, pressure, temperatures, etc.).
   IF Drywell pressure is increasing
   REFER to HC.OP-AB.CONT-0001(Q); Drywell Pressure.
2. IF source of leakage can be determined
   TRY to isolate (e.g. backseat valve, etc.).
3. **CHECK** radiation level trend on RM-11 for rate of increase.
4. **NOTIFY** Radiation Protection to obtain a grab sample.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Valve packing, piping, OR flange leak from Main Steam, HPCI RCIC Steam, RWCU, Core Spray, RHR OR Recirc Valves - Alert	1A. **BACKSEAT** any valves that are permissible to backseat. **REFER** to Tech. Spec. 3.4.3.2. 1B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-RI4991

CAUSE	CORRECTIVE ACTION
2. Reactor Recirc Pump Seal leakage - Alert	2. **CHECK** seal stage pressures AND flows for indication of leak. **REQUEST** SM/CRS to initiate corrective action.
3. Reactor Coolant Pressure Boundary leak - Alert	3. **REFER** to Tech. Spec 3.4.3.2 for Action Statement AND **NOTIFY** SM/CRS.
4. Power failure - Downscale	4. **CHECK** power supply energized from 120VAC Distribution Panel 1DJ483 Bkr 21.
5. Detector failure - Downscale	5A. **REFER** to Tech. Spec. 3.4.3.1. 5B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-FI-4381

NOMENCLATURE	DRYWELL COOLER CONDENSATE FLOW	**SETPOINT**	High 5 gpm Downscale N/A
DESCRIPTION	High flow through drain collections from Drywell coolers (HIGH LED) lit, or downscale (OPERATE LED extinguished)	**ORIGIN**	1SK-FE-4381

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **CHECK** total flow from all Drywell Coolers on 1SK-FI-4381 Channel 3 (alarm point HIGH LED lit at 5 gpm).
   COMPARE with Drywell Floor Drain Sump flow (unidentified leakage).
2. **CHECK** other parameters for indication of leakage (e.g. sumps, Drywell pressure, temperatures, etc.).
   IF Drywell pressure is increasing
   REFER to HC.OP-AB.CONT-0001(Q); Drywell Pressure.
3. IF source of leakage can be determined
   TRY to isolate (e.g. backseat valve, etc.).
4. **CHECK** flow trend on RM-11.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Valve packing, piping, OR flange leak from Main Steam, HPCI & RCIC Steam, RWCU, Feedwater OR Recirc Valves - Alert or High	1A. **BACKSEAT** any valves that are permissible to backseat. **REFER** to Tech. Spec. 3.4.3.2.

ATTACHMENT B1

ALARM POINT 1SK-FI-4381

CAUSE	CORRECTIVE ACTION
2. Reactor Recirc Pump Seal leakage - Alert or High	2A. **CHECK** seal stage pressures AND flows for indication of leak. **REQUEST** SM/CRS to initiate corrective action.
3. Reactor Coolant Pressure Boundary leak - Alert or High	3A. **REFER** to Tech. Spec. 3.4.3.2 for Action Statement AND **NOTIFY** SM/CRS.
4. Chilled Water Cooling Coil OR piping leak (in Cooler) - Alert or High	4A. **CHANGE** over to opposite cooling coil on the following (lower) Drywell Coolers: (a) 1AVH212 (b) 1BVH212 (c) 1CVH212 (d) 1DVH212
5. Power failure - Downscale	5A. **CHECK** power supply energized from 120VAC Distribution Panel 1DJ483 Bkr. 21.
6. Instrument failure - Downscale	6A. **REFER** to Tech. Spec. 3.4.3.1. 6B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-FI-4381

NOMENCLATURE	DRYWELL COOLER CONDENSATE FLOW	**SETPOINT**	High 5 gpm Downscale N/A
DESCRIPTION	High flow through drain collections from Drywell coolers (HIGH LED lit), or downscale (OPERATE LED extinguished)	**ORIGIN**	1SK-FE4382

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **CHECK** total flow from all Drywell Coolers on 1SK-FI-4381 Channel 3 (alarm point HIGH LED lit at 5 gpm).
   COMPARE with Drywell Floor Drain Sump flow (unidentified leakage).
2. **CHECK** other parameters for indication of leakage (e.g. sumps, Drywell pressure, temperatures, etc.).
   IF Drywell pressure is increasing
   REFER to HC.OP-AB.CONT-0001(Q); Drywell Pressure.
3. IF source of leakage can be determined
   TRY to isolate (e.g. backseat valve, etc.).
4. **CHECK** flow trend on RM-11.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Valve packing, piping, OR flange leak from Main Steam, HPCI & RCIC Steam, RWCU, Feedwater OR Recirc Valves - Alert or High	1A. **BACKSEAT** any valves that are permissible to backseat. **REFER** to Tech. Spec. 3.4.3.2.

ATTACHMENT B1

ALARM POINT 1SK-FI-4381

CAUSE	CORRECTIVE ACTION
2. Reactor Recirc Pump Seal leakage - Alert or High leak.	2A. **CHECK** seal stage pressures AND flows for indication of **REQUEST** SM/CRS to initiate corrective action.
3. Reactor Coolant Pressure Boundary leak - Alert or High	3A. **REFER** to Tech. Spec. 3.4.3.2 for Action Statement AND **NOTIFY** SM/CRS.
4. Chilled Water Cooling Coil OR piping leak (in Cooler) - Alert or High	4A. **CHANGE** over to opposite cooling coil on the following (upper) Drywell Coolers: (a) 1EVH212 (b) 1FVH212 (c) 1GVH212 (d) 1HVH212
5. Power failure - Downscale	5A. **CHECK** power supply energized from 120VAC Distribution Panel 1DJ483 Bkr. 21.
6. Instrument failure - Downscale	6A. **REFER** to Tech. Spec. 3.4.3.1. 6B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-LI-4930 (Chnl 1)

NOMENCLATURE	DRYWELL SUMP LEVEL Flow	**SETPOINT**	Alert 21.2 gpm Ex. Pump Runtime (6 min.) Downscale N/A
DESCRIPTION	High flow to Equipment Drain Sump (ALERT LED lit) OR downscale (OPERATE LED extinguished) OR Excessive Pump Runtime.	**ORIGIN**	1SK-LT-4930

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **CHECK** other parameters for indication of leakage (e.g. Drywell pressure, temperatures, radiation level, etc.).
   IF Drywell pressure is increasing
   REFER to HC.OP-AB.CONT-0001(Q) Drywell Pressure.
2. **CHECK** flow trend on RM-11.
3. **CHECK** total Drywell Sumps flow on 1SK-LI-4930 Channel 3 (alarm point - ALERT LED lit at 20.5 gpm).
   REFER to Tech. Spec. 3.4.3.2 for Action Statement.
4. **REFER** to HC.OP-AB.CONT-0006(Q), Drywell Leakage.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. High inleakage to the Drywell Equipment Drain Sump - Alert or High. Inputs are as follows: (a) Reactor Recirc Seal staging flows (b) Valve stem leakage (e.g. Recirc, Main Steam) (c) Reactor Recirc vents and drains (d) Equipment vents and drains (e) Refuel Bellows drains (f) Containment Spray Header drains	1A. **CHECK** Recirc Pump Seal stage pressures AND flows. 1B. IF source of leakage can be determined, **ISOLATE** IF possible. 1C. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-LI-4930 (Chnl 1)

CAUSE	CORRECTIVE ACTION
2. Drywell Equipment Drain Sump Cooler leak - Alert or High	2A. **CHECK** Chilled Water System for inventory loss. 2B. **ISOLATE** sump cooler. 2C. **REQUEST** SM/CRS to initiate corrective action.
3. Power failure - Downscale	3. **CHECK** power supply energized from 120VAC Distribution Panel 1DJ481 Bkr 19.
4. Instrument failure - Downscale	4A. **REFER** to Tech. Spec. 3.4.3.1. 4B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT **1SK-LI-4930 (Chnl 2)**

NOMENCLATURE DRYWELL SUMP LEVEL
Flow

SETPOINT Alert 4.2 gpm
Rate of Rise - .918 gpm
Ex. Pump Runtime (3 min.)
Downscale N/A

DESCRIPTION High flow to Floor Drain Sump (ALERT LED lit)
OR downscale (OPERATE LED ext.)
OR High Rate of Rise in one hours
OR Excessive Pump Runtime.

ORIGIN 1SK-LT4931

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **CHECK** other parameters for indication of leakage (e.g. Drywell radiation, pressure, temperatures, etc.).
   IF Drywell pressure is increasing
   REFER to HC.OP-AB.CONT-0001(Q)) Drywell Pressure.
2. **CHECK** flow trend on RM-11.
3. **REFER** to Tech. Spec. 3.4.3.2 for Action Statement.
4. **REFER** to HC.OP-AB.CONT-0006(Q), Drywell Leakage.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Valve packing, piping, flange, cooler leak from Main Steam, HPCI & RCIC Steam, RWCU, Feedwater Drywell Coolers, Control Rod Drives, RACS, Chilled Water, Reactor Head vent, miscellaneous vents and drains, RHR, Core Spray	1A. **BACKSEAT** any valves that are permissible to backseat. **REFER** to Tech. Spec. 3.4.3.2. 1B. IF source of leakage can be determined, **ISOLATE** IF possible. 1C. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B1

ALARM POINT 1SK-LI-4930 (Chnl 2)

CAUSE	CORRECTIVE ACTION
2. Containment Spray Header leaking - Alert or High	2. **ENSURE** RHR Containment Spray Valves are closed.
3. Reactor Recirc Pump Seal leakage - Alert or High	3. **CHECK** seal stage pressures AND flows for indication of leak. **REQUEST** SM/CRS to initiate corrective action.
4. Reactor Coolant Pressure Boundary leak - Alert or High	4. **REFER** to Tech. Spec. 3.4.3.2 for Action Statement and **NOTIFY** SM/CRS.
5. Chilled Water Cooling Coil leak on Drywell Cooler - Alert or High	5. **CHANGE** over to opposite coil.
6. Power failure - Downscale	6. **CHECK** power supply energized from 120VAC Distribution Panel 1DJ481 Bkr. 19.
7. Instrument failure - Downscale	7A. **REFER** to Tech. Spec. 3.4.3.1. 7B. **REQUEST** SM/CRS to initiate corrective action.

ATTACHMENT B2

MN STM LINE **RAD HI HI** **OR INOP**	**Window Location** C6-B2 **Setpoint** Variable **Origin** D11-N006A

OPERATOR ACTION:

1. IF valid HI HI Main Steam Line Radiation levels exist
   PERFORM the following:
   a. **SCRAM** the Reactor by placing the Mode Switch to SHUTDOWN Position.
   b. **CLOSE** the Main Steam Isolation Valves
      AND Steam Line Drain Isolation Valves.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2121	MN STM LINE RAD HI-HI/INOP-W	Reactor Coolant Sample Valve SV-4310 closes IF Channels W AND X are both in alarm Vacuum Pumps trip.
D2122	MN STM LINE RAD HI-HI/INOP-X	Reactor Coolant Sample Valve SV-4310 closes IF Channels W AND X are both in alarm Vacuum Pumps trip.
D2123	MN STM LINE RAD HI-HI/INOP-Y	Reactor Coolant Sample Valve SV-4311 closes IF Channels Y AND Z are tripped
D2124	MN STM LINE RAD HI-HI/INOP-Z	Reactor Coolant Sample Valve SV-4311 closes IF Channels Y AND Z are tripped.

REFERENCES: SEE appropriate computer point

ATTACHMENT B3

MN STM LINE

RADIATION

DOWNSCALE

Window Location **C6-B3**

OPERATOR ACTION:

1. **DISPATCH** operator to Panel H11-P635
   AND H11-P636 to determine which of the main steam line radiation monitors is downscale.
2. **REFER** to Technical Specifications 3/4.3.1
   IF any monitor is suspected to be inoperable.
3. **NOTIFY** SM/CRS of alarm condition
   AND **REQUEST** permission to reset effected radiation monitor.
4. **REQUEST** SM/CRS initiate corrective action.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
RIS K610A	Radiation indication for Main Steam Line Radiation Monitor A	Alarm only
RIS K610B	Radiation indication for Main Steam Line Radiation Monitor B	Alarm only
RIS K610C	Radiation indication for Main Steam Line Radiation Monitor C	Alarm only
RIS K610D	Radiation indication for Main Steam Line Radiation Monitor D	Alarm only

REFERENCES: J-26-0, Sht. 2
M-26-1, Sht. 2
E-6796-0
N1-D11-5, Sht. 1, Sht. 2, Sht. 3

ATTACHMENT B4

VIB MONITOR

PNL B/C

C374

Window Location **C6-B4**

NOTE

Loss of power to Vibration Monitoring results in the inability to detect high vibration on the equipment associated with the effected panel(s).

OPERATOR ACTION:

REQUEST SM/CRS initiate action to investigate the Vibration Monitor Panel (BC or CC 374) generating the trouble alarm (power failure/fault).

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2358	VIB MON PNL CH B POWER SUPPLY	Alarm only
D2359	VIB MON PNL CH C POWER SUPPLY	Alarm only

REFERENCES:
J-108-0, Sht. 7
E-6797-0, Sht. A
J-700-42, Sht. 5, 8
J-700-43, Sht. 5, 8
CD-203Y, FSAR 7.5.1.3.7.3
BP 980408063
BP 980507140

ATTACHMENT B5

BOP/CRIDS

COMPUTER

TROUBLE

Window Location **C6-B5**

OPERATOR ACTION:

1. IF BOP problem, **NOTIFY** the SM/CRS of the malfunction AND **REQUEST** I&C Department to initiate corrective action.
2. IF CRIDS problem, **REFER** to OP-HC-103-102-1008, CRIDS System Failures Desktop Guide

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
N/A	Malfunction of the On-Line OR Back-up Central System Unit (CSU) portion of the On-Line Computer System	In the event of on-line CSU failure, the switch able busses are released AND the backup CSU will select the switch able busses AND initialize in the on-line mode. The AVAILABLE light on the System Configuration Panel (1AZ618) will extinguish AND the NOT AVAILABLE light will illuminate for the failed CSU.
C04	CRIDS failover	Point will alarm if system fails over for any reason.
	6 Line Stall	Display indicates that viewer must be closed on affected screen.

REFERENCES: J-108-0, Sht. 8
E-6797-0, Sht. 1
J-106-80, Sht. 1
J-106-82, Sht. 1

ATTACHMENT B5

CAUSE CORRECTIVE	ACTION
1. CRIDS failover	1A **CHECK** server health screen AND **MAKE** note of any stalls. 1B **CONTACT** Real Time Comp Group at x7008.
2. 6 Line Stall	2A **CLOSE** viewer. 2B **REOPEN** using desktop icon. 2C **INITIATE** notification.

ATTACHMENT C1

RADIATION	**Window Location** C6-C1
MONITORING	**Setpoint** Multiple
ALARM/TRBL	**Origin** Various

OPERATOR ACTION:

1. **REFERENCE** the appropriate RMS Module (Rm 23A) on Panel 10C604 to determine which radiation monitor(s) is in alarm and the condition downscale (OPERATE LED extinguished), high (ALERT LED lit) or high high (HIGH LED lit).
2. **ENSURE** automatic actions, if any, have occurred.
   IF not initiate appropriate action(s) manually.
3. **REFER** to appropriate Attachment listed.
4. **NOTIFY** SM/CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
1SP-RI-4873 Attachment C1-1	North Plant Vent Rad Monitors (NPV RMS) Service Building Elev. 137' Room 3582	None
1SP-RI-4875 Attachment C1-2	South Plant Vent Rad Monitors (SPV RMS) Service Building Elev. 155' Room 3602	None
1SP-RI-4811 Attachment C1-3	Filtration, Recirculation, Ventilation System Vent Rad Monitors (FRVSV RMS) Service Building Elev. 155' Room 3601	None
0SP-RI-8817 Attachment C1-4	Cooling Tower Blowdown Rad Monitor (CTB RMS) Building 9 Elev. 102'	None
1SP-RI-4861 Attachment C1-5	Liquid Radwaste Rad Monitor (LR RMS) Service and Radwaste Bldg. Elev. 102', Radwaste Cont. Rm. 3343	Isolates HV-5377A&B

REFERENCES: SEE appropriate Attachment.

ATTACHMENT C1

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
DISPLAY/ KEYBOARD/ PRINTER CRT READOUT Attachment C1-6A	Offgas System Rad Monitors (OG RMS)	None
None Attachment C1-6B	HIGH/LOW Offgas Sample Flow	None
1SP-RY-4825A 1SP-RY-4825B Attachment C1-7	Drywell Atmosphere Post Accident Radiation Monitor (DAPA) Drywell	Recorders RR4825A(B) records values
DISPLAY/ KEYBOARD/ PRINTER CRT READOUT	Reactor Auxiliaries Cooling System Rad Monitor (RACS RMS) Rx Bldg Elev. 77' Room 4209	None **SEE** Attachment C1-8
DISPLAY/ KEYBOARD/ PRINTER CRT READOUT	Safety Auxiliaries Cooling System Rad Monitors (SACS RMS) Rx Bldg Elev. 102' Room 4307 and 4309	None **SEE** Attachment C1-9

REFERENCES: SEE appropriate Attachment.

ATTACHMENT C1-1

ALARM POINT 1SP-RI-4873

NOMENCLATURE	North Plant Vent Rad Monitors (NPV RMS)	**SETPOINT**	3.08E + 03 uc/sec
DESCRIPTION	Continuously samples the effluent flow of the North Plant Vent via a Wide Range Gas Monitoring System	**ORIGIN**	LOW –RE-4873B MID –RE-4873C2 HI -RE-4873C1

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high effluent radiation (CH 4 HIGH LED lit on 1SP-RI4873 Panel 10C604), **ATTEMPT** to locate source.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **REFER** to HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release.
4. IF alarm is a monitor operate failure (OPER LED extinguished / CH 1 [Low Range] and/or CH 4 [Eff. Level] green),
   CHECK power supply energized and RM-11 status.
5. **REFER** to ODCM 3.3.7.11 for normal range or Tech Spec 3.3.7.5 for accident range.
6. **NOTIFY** SM/CRS of alarm condition.

(continued on next page)

REFERENCES:

M-70-0, Sht. 2	E-0023-1, Sht. 3
M-79-0, Sht. 1	E-6796-0
M-92-0, Sht. 2	J-R 1000-0
M-26-1, Sht. 2,	J-26-0, Sht. 3

ATTACHMENT C1-1

ALARM POINT 1SP-RI-4873

CAUSE	CORRECTIVE ACTION
1. High effluent radiation -	1. **CHECK** rad levels on the following to determine source AND **PERFORM** corrective action from the appropriate attachment: Offgas System - **REFER** to Attachment C1-6
	1a. IF there are no increases in rad level on the above **CHECK** the following:
1a(1). Solid Radwaste Exhaust gaseous high radiation Solid Radwaste Exhaust HEPA Filter (0AVH318 or 0BVH318) break through or malfunction	(1) Solid Radwaste Exhaust: **NOTIFY** SM/CRS AND **CHANGE** over to stand by filter. **REFER** to ODCM 3.11.2.5. **REQUEST** Radiation Protection to investigate source of high radiation AND isolate.
(2) Chemistry Laboratory Exhaust gaseous high radiation Chemistry Laboratory Exhaust HEPA Filter (0AVH307 or 0BVH307) break through or malfunction.	(2) Chemistry Laboratory Exhaust: **NOTIFY** SM/CRS AND **CHANGE** over to standby filter. **REFER** to ODCM 3.11.2.5. **REQUEST** Radiation Protection to investigate source of high radiation AND isolate.
2. Power failure	2. **CHECK** power supply energized from 480 VAC MCC 10B323, Bkr 32.

ATTACHMENT C1-1

ALARM POINT 1SP-RI-4873

CAUSE	CORRECTIVE ACTION
3. Monitor/Detector failure	3A. **REFER** to ODCM 3.3.7.11 for low range Action Statement. 3B. **REFER** to Tech Spec 3.3.7.5 for mid or high range Action Statement. 3C. **NOTIFY** SM/CRS of failure AND Tech Spec Action Statement.
4. Process flow out of range during severe weather conditions (i.e., large and sudden changes in atmospheric pressures, wind velocities and rain)	4A. **NOTIFY** Radiation Protection. 4B. **VERIFY** alignment AND operation of ventilation and fans. 4C. WHEN storm has passed, **VERIFY** process flow has returned to normal.

ATTACHMENT C1-2

ALARM POINT 1SP-RI-4875

NOMENCLATURE	South Plant Vent Rad Monitors (SPV RMS)	**SETPOINT**	3.08E + 02 uc/sec
DESCRIPTION	Continuously samples the effluent flow of the South Plant Vent via a Wide Range Gas Monitoring System	**ORIGIN**	LOW - RE-4875B MID - RE-4875C2 HI - RE-4875C1

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high effluent radiation (CH 4 HIGH LED lit on 1SP-RI4875 Panel 10C604), **ATTEMPT** to locate source.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **REFER** to HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release.
4. IF alarm is a monitor operate failure (OPER LED extinguished / CH 1 [Low Range] and/or CH 4 [Eff. Level] green), **CHECK** power supply energized and RM-11 status.
5. **REFER** to ODCM 3.3.7.11 for normal range or Tech Spec 3.3.7.5 for accident range.
6. **NOTIFY** SM/CRS of alarm condition.

Continued on next page

REFERENCES:

M-84-1, Sht. 16	M-26-1, Sht. 2
J-R 1000-0	J-26-0, Sht. 3
E-6796-0	E-0023-1, Sht. 3

ATTACHMENT C1-2

ALARM POINT 1SP-RI-4875

CAUSE	CORRECTIVE ACTION
1. High effluent radiation -	1A. **CHECK** rad levels on the following to determine source AND **PERFORM** Corrective Action from the appropriate attachment: (1) Reactor Building Exhaust (2) Turbine Building Exhaust (3) Turbine Building Compartment Exhaust (4) Radwaste Area Exhaust 1B. IF there are no increases in rad levels on the above **CHECK** the following: (1) Mechanical Vacuum Pump discharge: **NOTIFY** SM/CRS AND **REMOVE** Mechanical Vacuum Pump from service. (2) Gland Seal Exhauster: **NOTIFY** SM/CRS AND **CONSIDER** changing Main Turbine Sealing Steam to Auxiliary Steam OR removing Turbine from service. (3) Decontamination Solution Evaporator (00E301) Vent: **REMOVE** system from service IAW HC.OP-RW.HB-0003(Q); Chemical Waste System Operations AND **CLOSE** Vent Valve HV-F512.

ATTACHMENT C1-2

ALARM POINT 1SP-RI-4875

CAUSE	CORRECTIVE ACTION
1. High effluent radiation - (continued)	(4) Service Area Exhaust: **REQUEST** Radiation Protection investigate to locate source of high radiation AND isolate.
2. Power failure	2. **CHECK** power supply energized from 480 VAC MCC 10B313, Bkr 32.
3. Monitor/Detector failure	3A. **REFER** to ODCM 3.3.7.11 for low range Action Statement. 3B. **REFER** to Tech Spec 3.3.7.5 for mid or high range Action Statement. 3C. **NOTIFY** SM/CRS of failure AND Tech Spec Action Statement.

ATTACHMENT C1-3

ALARM POINT 1SP-RI-4811

NOMENCLATURE	Filtration, Recirculation Ventilation System Vent Rad Monitors (FRVSV RMS)	**SETPOINT**	1.45E + 03 uc/sec
DESCRIPTION	Continuous samples of the effluent flow from the FRVS via a Wide Range Gas Monitoring System	**ORIGIN**	LOW – RE-4811A MID – RE-4811B2 HI - RE-4811B1

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high effluent radiation (CH 4 HIGH LED lit on 1SP-RI4811 Panel 10C604), **ATTEMPT** to locate source.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **REFER** to HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release.
4. IF alarm is a monitor operate failure (OPER LED extinguished / CH 1 [Low Range] and/or CH 4 [Eff. Level] green), **CHECK** power supply energized and RM-11 status.
5. **REFER** to ODCM 3.3.7.11 for normal range or Tech Spec 3.3.7.5 for accident range.
6. **NOTIFY** SM/CRS of alarm condition.

(continued on next page)

REFERENCES:

M-84-1, Sht. 16	M-26-1, Sht. 1
E-6796-0	E-0012-1, Sht. 3
J-R 1000-0	J-26-0, Sht. 3

ATTACHMENT C1-3

ALARM POINT 1SP-RI-4811

CAUSE	CORRECTIVE ACTION
1. High effluent radiation	1A. **PERFORM** action required IAW HCGS Emergency Plan. 1B. **NOTIFY** SM/CRS AND Radiation Protection.
2. Power failure	2. **CHECK** power supply energized from 120 VAC Distribution Panel 1DJ483, Bkr 23.
3. Monitor/Detector failure	3A. **REFER** to ODCM 3.3.7.11 for low range Action Statement. 3B. **REFER** to Tech Spec 3.3.7.5 for mid or high range Action Statement. 3C. **NOTIFY** SM/CRS of failure AND Tech Spec Action Statement.

ATTACHMENT C1-4

ALARM POINT 0SP-RI-8817

NOMENCLATURE	Cooling Tower Blowdown Rad Monitor (CTB RMS)	**SETPOINT**	*adjustable per ODCM
DESCRIPTION	Monitors a sample of the Cooling Tower Blowdown before it is discharged to the river	**ORIGIN**	0SP-RE-8817

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high radiation (CH 1 HIGH LED lit on 0SP-RI-8817 Panel 10C604) AND there is a Liquid Radwaste release in progress, **CONSIDER** terminating the release.
2. **NOTIFY** Chemistry Department to obtain grab samples.
3. **NOTIFY** Radiation Protection of alarm condition.
4. IF alarm is downscale (CH 1 OPERATE LED extinguished) **CHECK** power supply energized and RM-11 status.
5. **REFER** to ODCM 3.3.7.10 and 3.11.1.1.
6. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Liquid Radwaste release in progress - High alarm	1. **CHECK** 0SP-RI-4861, LIQUID RADWASTE AND 1SK-RI-4991, COOL TOWER BLOWDOWN (RM-11). IF both rad levels increased together, **TERMINATE** the Radwaste release.

REFERENCES:

M-09-1, Sht. 1	M-11-1, Sht. 1	M-13-1
M-26-1, Sht. 2	M-33-0, Sht. 1	E-6796-0
E-0012-1, Sht. 3	J-R 1000-0	J-26-0, Sht. 3

*Offsite Dose Calculation Manual (ODCM)

ATTACHMENT C1-4

ALARM POINT 0SP-RI-8817

CAUSE	CORRECTIVE ACTION
2. Contamination in Oil Separator 00S545 gravity draining to river	2. **REQUEST** Radiation Protection to sample gravity drain (SX-8775). **CLOSE** V042 IF drain is source of radiation.
3. Contamination in SACS AND SACS Heat Exchanger leaked to Service Water System.	3. **CHECK** rad level on SACS RMS 1SP-RE4859A1 and B1. IF high, **NOTIFY** SM/CRS AND **INVESTIGATE** further.
4. Contamination in RACS AND Heat Exchanger leaked to Service Water System.	4. **CHECK** rad level on RACS RMS 1SP-RE2534. IF high, **NOTIFY** SM/CRS AND **INVESTIGATE** further.
5. Power failure	5. **CHECK** power supply energized from 208/120VAC Distribution Panel 00Y517, Bkr 1.
6. Detector failure	6A. **REFER** to ODCM Table 3.3.7.10-1, Item 2a for Action Statement. 6B. **NOTIFY** SM/CRS of failure.

ATTACHMENT C1-5

ALARM POINT 0SP-RI-4861

NOMENCLATURE	Liquid Radwaste Rad Monitor (LR RMS)	**SETPOINT**	*Adjustable per ODCM
DESCRIPTION	Monitors a sample of the Liquid Radwaste discharged to the Cooling Tower blowdown line to river	**ORIGIN**	0SP-RE-4861

AUTOMATIC ACTION:

Isolates HV-5377A&B on high high radiation (HIGH LED lit on 0SP-RI-4861, Panel 10C604 Bay 2).

OPERATOR ACTION:

1. IF alarm is high-high radiation (HIGH LED lit on 0SP-RI-4861),
   ENSURE isolation.
   IF isolation has not occurred,
   ISOLATE manually.
2. **NOTIFY** Radiation Protection to obtain grab samples.
3. **REFER** to HC.OP-AR.SP-0001(Q), Radiation Monitoring System Alarm Response-RM-11.
4. IF alarm is Monitor loss of operate (OPERATE LED extinguished)
   CHECK power supply energized.
5. **REFER** to ODCM 3.3.7.10 and 3.11.1.3.
6. NJPDES Thermal Monitoring is affected
   IF Cause 5 or 6 exists.
7. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. High effluent radiation (HIGH LED lit)	1. **ENSURE** isolation, IF not, **CLOSE** HV-5377A&B.
2. Power failure	2. **CHECK** power supply energized from 120 VAC Distribution Bus 1DJ483, Bkr 12.

REFERENCES:

M-63-0, Sht. 1	M-26-1, Sht. 2	E-6796-0
E-0012-1, Sht. 3	J-R 1000-0	J-26-0, Sht. 3

*Offsite Dose Calculation Manual (ODCM)

ATTACHMENT C1-5

ALARM POINT 0SP-RI-4861

CAUSE	CORRECTIVE ACTION
4. Detector failure	4A. **REFER** to ODCM Table 3.3.7.10-1 Item 1a for Action Statement. 4B. **NOTIFY** SM/CRS of failure.
5. RM-80 Monitor (1SPRY-4861) failure	5A. **REFER** to ODCM Table 3.3.7.10-1 Item 1a, 3a or 3b for Action Statements. 5B. **NOTIFY** Chemistry for alternate flow monitoring IAW HC.CH-TI.ZZ-0003(Q). 5C. **NOTIFY** SM/CRS of failure AND effect on NJPDES Thermal Monitoring System (1RFXY-11494). 5D. **NOTIFY** I&C to repair instrument.
6. Loss of Process Flow on 0SPRY-4861 and/or loss of OPERATE on Channel 4 of 0SPRI/RY-4861	6A. **REFER** to ODCM Table 3.3.7.10-1 Item 3b for Action Statement. 6B. Same as 5B. 6C. Same as 5C. 6D. Same as 5D.

ATTACHMENT C1-6A

ALARM POINT 0SP-RI-6633

NOMENCLATURE	Offgas System Rad Monitors (OG RMS)	**SETPOINT**	2.20E + 4 MR/hr
DESCRIPTION	Monitors the offgas from a sample tap between the fourth and fifth holdup pipes of the Offgas System	**ORIGIN**	RE-N004A RE-N004B

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high radiation,
   REFER to HC.OP-AB.RPV-0008(Q) Reactor Coolant Activity.
2. **NOTIFY** Radiation Protection of alarm condition.
3. IF alarm is Downscale,
   CHECK power supply energized.
4. **REFER** to Tech Spec 3.11.2.7.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Fuel failure - high alarm	1A. **REFER** to HC.OP-AB.RPV-0008(Q); Reactor Coolant Activity. 1B. **NOTIFY** SM/CRS of possible fuel damage.
2. Resin break through OR air bubble from Condensate OR Reactor Water Cleanup Demineralizer	2A. **REFER** to HC.OP-AB.RPV-0008(Q); Reactor Coolant Activity. 2B. **NOTIFY** SM/CRS of problem.

REFERENCES:

M-69-0, Sht. 1	E-6796-0	M-26-1, Sht. 2
J-R 1000-0	E-0012-1, Sht. 3	J-26-0, Sht. 3

ATTACHMENT C1-6A

ALARM POINT 0SP-RI-6633

CAUSE	CORRECTIVE ACTION
3. Power failure	3A. **CHECK** power supply energized from 120 VAC Distribution Bus 1DJ483 Bkr 4. 3B. **REFER** to Tech Spec 4.11.2.7.1 AND 3.3.7.1.
4. Detector failure	4A. **REFER** to Tech Spec 4.11.2.7.1 AND 3.3.7.1. 4B. **NOTIFY** SM/CRS of failure.

ATTACHMENT C1-6B

ALARM POINT Offgas Sample Panel

NOMENCLATURE	Off Gas System Rad Monitors (OG RMS) Flow	**SETPOINT**	14.5 scfh (HIGH) 6.0 scfh (LOW)
DESCRIPTION	Monitors the flow through the Off Gas Rad Monitor Sample System. (Normal flow is 10 scfh as indicated on FI-4846 at local Offgas Vial Sample Panel 1NC367)	**ORIGIN**	PDSHL-4851(B4)

NOTE

A low off gas flow condition DOES NOT input to the RM-11. It only inputs to Overhead Annunciator C1. This alarm may be caused by an introduction of moisture into system on initial startup.

AUTOMATIC ACTION:

None

OPERATOR ACTION

1. **NOTIFY** Radiation Protection of alarm condition.
2. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Sample flow - high	1A. **NOTIFY** I&C to adjust flow.
2. Sample flow - low	2A. **NOTIFY** I&C to adjust flow. 2B. **CHECK** Sample Pump 10P397 running, power supply energized 0C335/J034.
3. Instrument failure	3A. **REFER** to Tech Spec 4.11.2.7.1. 3B. **NOTIFY** SM/CRS of Action Statement.

ATTACHMENT C1-7

ALARM POINT 1SP-RI-4825A(B)

NOMENCLATURE Drywell Atmosphere Post-Accident Radiation Monitor (DAPA)

SETPOINT High - 2.0E+2 R/HR

DESCRIPTION Monitors Drywell Radiation

ORIGIN RE-4825A(B)

AUTOMATIC ACTION:

Radiation Recorders RR4825A
AND RR4825B on Panel 10C650C records values.

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **ENTER** HC.OP-AB.RPV-0008(Q), Reactor Coolant Activity.
4. **CHECK** plant conditions against entry conditions for Emergency Operating procedure HC.OP-EO.ZZ-0103/4(Q), Reactor Building And Radioactive Release Control.
5. **REFER** to ECG Section 3.0.

CAUSE	CORRECTIVE ACTION
1. Fuel Failure/LOCA has occurred.	1A. **REVIEW** Emergency Operating procedure entry conditions AND **REQUEST** SM/CRS enter appropriate EOP.
2. Instrument Failure OR check source has occurred.	2A. **CHANNEL CHECK** instrument. 2B. **REQUEST** the SM/CRS initiate corrective action. 2C. **ENSURE** compliance with Tech Spec 3.3.7.5.

REFERENCES:

FSAR table 7.5.1
Tech Spec 3.3.7.5
DKP data
CD-837E
M-26-1, Sht. 2
M-26-1, Sht. 1
HC.IC-CC.SP-0042(Q)

ATTACHMENT C1-8

ALARM POINT 1SP-RI-2534

NOMENCLATURE	Reactor Auxiliaries Cooling System Rad Monitor (RACS RMS)	**SETPOINT**	9.00E-5 uCi/cc
DESCRIPTION	Monitors a sample from the discharge piping of the Reactor Auxiliaries Cooling System Pumps	**ORIGIN**	1SP-RE-2534

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high radiation try to determine source of radiation
   AND **ISOLATE**. (**MONITOR** RACS Head Tank level for leakage into RACS.)
2. **NOTIFY** Chemistry Department to perform the following: [**ODCM 3/4.11.1.1**]
   a. **SAMPLE** RACS to identify the source(s) of inleakage
      AND to identify the contaminants.
   b. IF RACS sample indicates contaminants,
      SAMPLE SSW Systems
   c. **DETERMINE**
      IF a release is in progress.
3. IF alarm is downscale
   CHECK power supply energized.
4. **REFER** to Tech Spec 3.3.7.1.
5. **NOTIFY** SM/CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc Pump Seal Cooler intersystem leak - High alarm [**CD-038X**]	1A. **NOTIFY** SM/CRS AND **REDUCE** Reactor power. **REMOVE** Recirc Pump from service AND **ISOLATE** IAW HC.OP-SO.BB-0002(Q). **REFER** to Tech Spec 3.4.1.1 AND 3.4.1.3.

REFERENCES:

M-13-0	J-26-0, Sht. 3	M-13-1
E-6796-0	E-0012-1, Sht. 3	J-R 1000-0

ATTACHMENT C1-8

ALARM POINT 1SP-RI-2534

CAUSE	CORRECTIVE ACTION
2. Reactor Water Cleanup Non-Regen Heat Exchanger inter-system leak - High alarm [**CD-038X**]	2A. **NOTIFY** SM/CRS AND **REMOVE** Reactor Water Cleanup System from service AND **ISOLATE**. 2B. **ENSURE** compliance with sampling requirements of UFSAR Section 5.2.3.2.2.2.
3. Reactor Water Cleanup Pump Seal Cooler intersystem leak - High alarm. [**CD-038X**]	3A. **NOTIFY** SM/CRS AND **REMOVE** Cleanup Pump from service AND **ISOLATE**.
4. The following are normally at lower pressure than the RACS AND leakage would be from RACS. IF RACS is shutdown leakage could be into RACS: (a) Feed Gas Cooler Condenser HA 10E306 and HA 00E306 (b) Waste Evaporator Condenser HC 0AE303 (c) Distillate Sub Cooler HC 00E380 (d) Crystallizer Vapor Condenser HC 00E379 (e) Crystallizer Vent Gas Cooler HC 00E378 (f) Extruder Evaporators HC 0AP380 and HC 0BP380 (g) Crystallizer Bottoms Tank Vent Gas Cooler HC 00E381 (h) Concentrated Waste Tanks HB 0AT324 and HB 0BT324 (i) Reactor Building Equipment Drain Sumps HG AE211 and HG BE211	4A. **REMOVE** system(s) from service IAW appropriate Operating Procedure.

ATTACHMENT C1-8

ALARM POINT 1SP-RI-2534

CAUSE	CORRECTIVE ACTION
5. Power failure	5. **CHECK** power supply energized from 120 VAC Distribution Bus 1DJ483, Bkr 20.
6. Detector failure	6A. **REFER** to Tech Spec 3.3.7.1 for Action Statement. 6B. **NOTIFY** SM/CRS of failure AND Action Statement.

ATTACHMENT C1-9

ALARM POINT 1SP-RI-4859A/B

NOMENCLATURE	Safety Auxiliaries Cooling System Rad Monitor (SACS RMS)	**SETPOINT**	6.00E-5 uCi/cc
DESCRIPTION	Monitors at sample points downstream of RHR Heat Exchangers A&B (BC AE205 and BC BE205)	**ORIGIN**	1SP-RE-4859A1 1SP-RE-4859B1

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF alarm is high radiation
   AND a RHR Heat Exchanger is in service,
   STOP the A OR B RHR Pump (IF RHR pressure is greater than SACS pressure).
   CHANGE over to opposite (A OR B) SACS loop.
   (**MONITOR** SACS Head Tank level for leakage into SACS.)
2. **NOTIFY** Chemistry Department to perform the following: [**ODCM 3/4.11.1.1**]
   a. **SAMPLE** the SACS to identify the source(s) of inleakage
      AND to identify the contaminants.
   b. IF SACS sample indicates contaminants,
      SAMPLE SSW Systems
   c. **DETERMINE**
      IF a release is in progress.
3. IF alarm is downscale
   CHECK power supply energized.
4. **REFER** to Tech Spec 3.3.7.1 and 3.4.9.1.
5. **NOTIFY** SM/CRS of alarm condition.

REFERENCES:

M-11-1, Sht. 1 & 2	E-6796-0
M-26-1, Sht. 1	J-26-0, Sht. 3
E-0012-1, Sht. 3	J-R 1000-0

(continued on next page)

ATTACHMENT C1-9

ALARM POINT 1SP-RI-4859A/B

CAUSE	CORRECTIVE ACTION
1. RHR A or B Heat Exchanger tube intersystem leak - High alarm. [**CD-038X**]	1A. **STOP** RHR Pump A(B) AND **ISOLATE** RHR Heat Exchanger. **REFER** to Tech Spec 3.4.9.1 AND **NOTIFY** SM/CRS of suspected tube leak. IF needed for Shutdown Cooling **PLACE** opposite loop in service.
	1B. **CHANGE** over to opposite (A or B) SACS loop. **REFER** to Tech Spec 3.7.1.1.
2. Fuel Pool Cooling Heat Exchanger tube intersystem leak - High alarm. [**CD-038X**]	2A. **ISOLATE** Heat Exchanger AND **NOTIFY** SM/CRS of suspected tube leak.
	2B. **CHANGE** over to opposite (A or B) SACS loop. **REFER** to Tech Spec 3.7.1.1.
3. RHR Pumps A or B Seal Cooler Heat Exchanger tube intersystem leak - High alarm (very remote possibility) [**CD-038X**]	3A. **REFER** to Tech Spec 3.5.1 AND **NOTIFY** SM/CRS of possible need to inop RHR Pump. **STOP** RHR Pump A(B) AND **ISOLATE** SACS Cooler.
4. Containment Instrument gas Compressors A or B Cooler leak - High alarm	4A. **CHANGE** to opposite compressor. **NOTIFY** SM/CRS of cooler leak.
5. Power failure	5A. **CHECK** power supply energized from 120 VAC Distribution Bus 1DJ483, Bkr 20 for 1SP RE 4859A1 OR 1BJ483, Bkr 12 for 1SP RE 4859B1.
6. Detector failure	6A. **REFER** to Tech Spec 3.3.7.1 for Action Statement.
	6B. **NOTIFY** SM/CRS of failure AND Action Statement.

ATTACHMENT C2

REACTOR CONTROL SYS INOPERATIVE	Window Location C6-C2

OPERATOR ACTION:

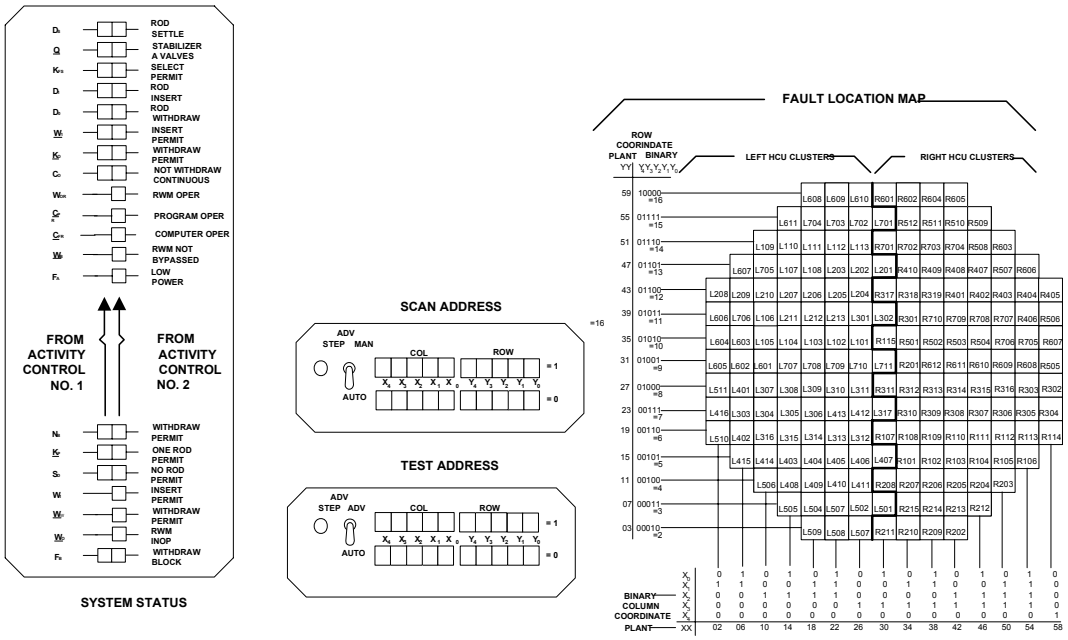
1. **REFER** to HC.OP-AB.IC-0001(Q), Control Rod.
2. Before resetting Rod Drive Control System (RDCS) Analyzer **COMPLETE** Attachment C2-1 for LED information received.

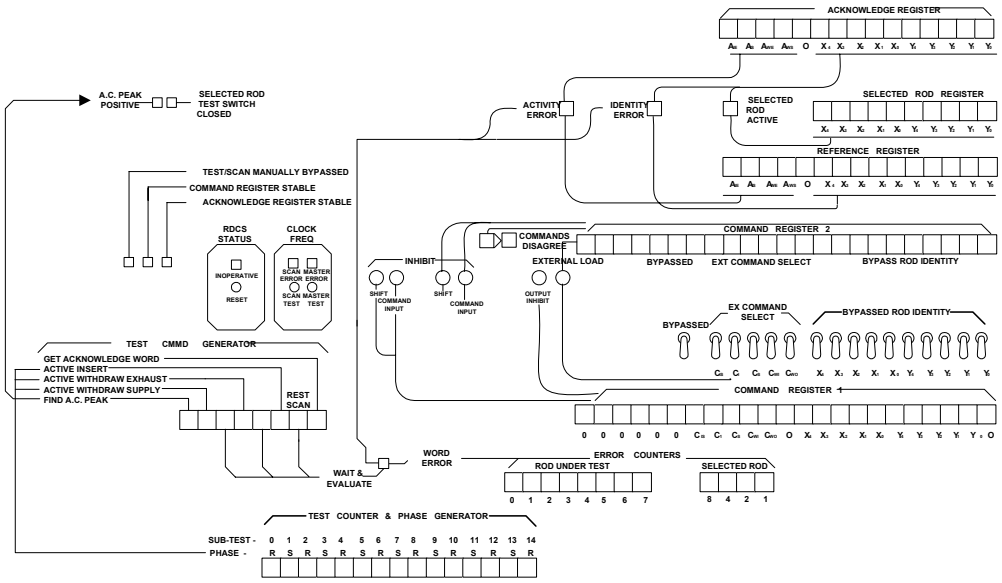
INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C012	RDCS INOP	Control Rod INSERT and WITHDRAW function is INHIBITED with no associated Control Rod withdrawal overhead alarms.

REFERENCES: N1-C11-1050-95, Sht. 26
E-6768-0, Sht. 1
GEK-90340A, Figure 4.2

ATTACHMENT C2-1
ROD DRIVE CONTROL SYSTEM ANALYZER PAGE INDICATORS





Date/Time _____ Operator Name _____ Notification Number _____

ATTACHMENT C3

CRD **HYDR UNIT** **TEMP HI**	**Window Location** C6-C3 **Setpoint** 250°F **Origin** TRS-R018

OPERATOR ACTION:

1. **CHECK** Cooling Water Flow at 63 gpm.
   IF not,
   ADJUST FIC-R600 as necessary. (DRIVE WATER PC STA) (10C651C)

NOTE

Transient high temperatures condition (in alarm for < one hour) are acceptable. [**8004437**]

2. IF temperature remains in alarm for > one hour
   WITH no downward trend,
   PERFORM the following:
   - **NOTIFY** Reliability Engineering of condition
     AND **REQUEST** compensatory actions be initiated
     (i.e., notifying Reactor Engineering should temperature exceed 350°F).
   - **IMPLEMENT** HC.OP-DL.ZZ-0004(Q), Attachment 6 - CRD Mechanism High Temperature Log.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3019	CRD DISCHARGE WATER TEMP	None

REFERENCES: M-47-1, Sht. 2
GEK-90337 Nov. 1983
CD-870A, G.E. SIL 173
80058502
DCP No. 4-HM-0319 and 4-HC-0231

ATTACHMENT C4

SEISMIC MON

PNL C673

Window Location **C6-C4**

OPERATOR ACTION:

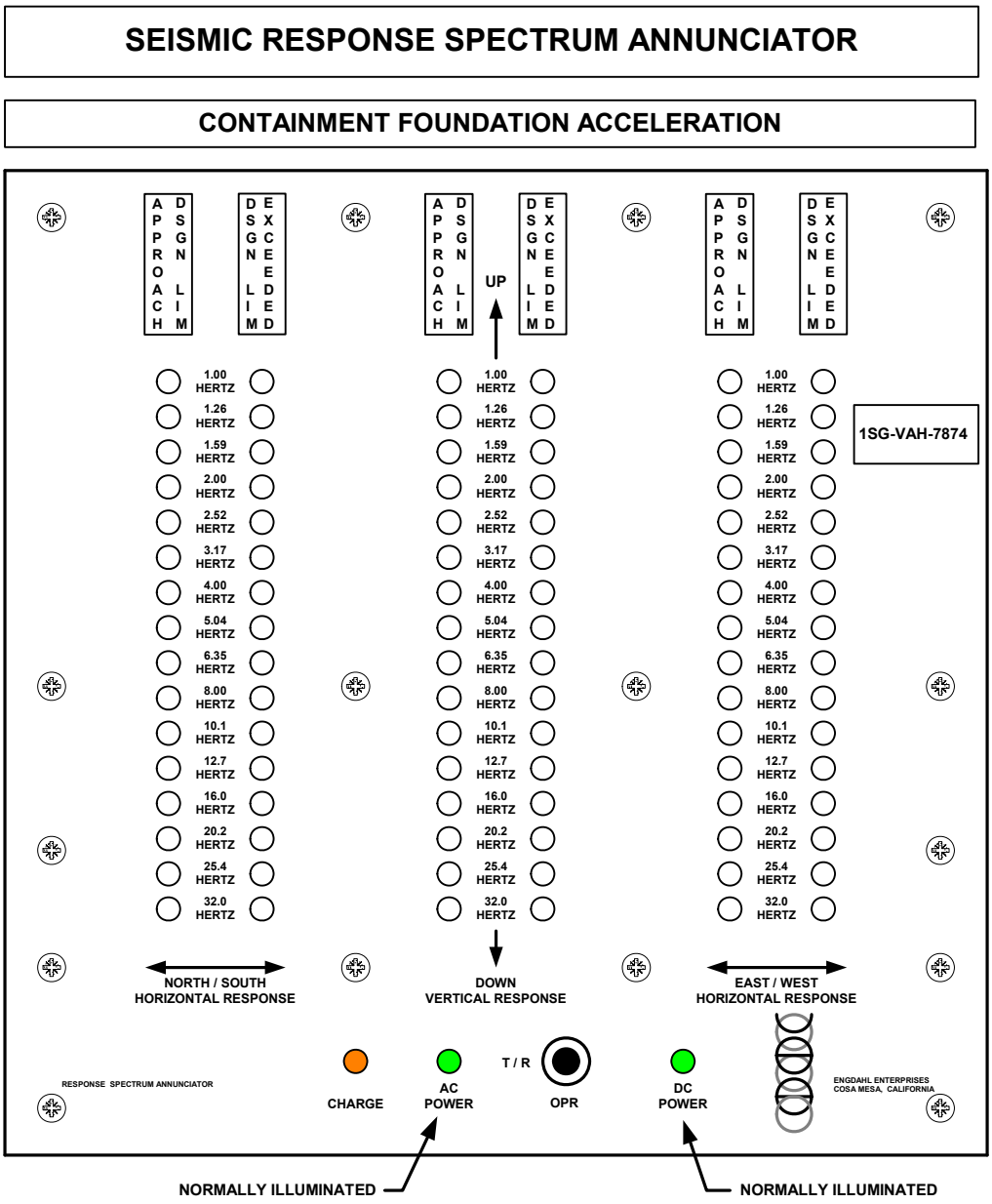
1. **DISPATCH** an operator to Local Panel 10C673 to validate alarm AND reset in accordance with HC.OP-SO.SG-0001(Z).
2. **OBSERVE** Seismic Response Spectrum Annunciator (10C650C), AND **INDICATE** on Attachment C4-1 the lamps that are illuminated.
3. **RESET** in accordance with HC.OP-SO.SG-0001(Q).
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.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3977	SEISMIC TROUBLE ALARM	Alarm Only

REFERENCES: J-108-0, Sht. 5
J-707-13, Sht. 1
E-6797-0, Sht. 6

ATTACHMENT C4-1
SEISMIC RESPONSE SPECTRUM ANNUNCIATOR



Date _____ Time: _____

Performer _____

WHEN completed,
FORWARD attachment to responsible System Engineer.

ATTACHMENT C5

SPDS **SYSTEM** **TROUBLE**

Window Location **C6-C5**

OPERATOR ACTION:

1. On the lower toolbar,
   PRESS the PROG button to bring up the NAP NAVIGATION display.
2. **PRESS** the MC NAP ANNUNCIAT button to bring up the MC NAP ANNUNCIATOR display.
3. **IDENTIFY** the alarm points on the display (RED/YES)

Inputs Digital Point Indication	Nomenclature/Condition
T1403	LOSS OF RTP MUX DATA LINK
T1402	LOSS OF RMS DATA LINK
YDLCRIDSALRM	LOSS OF CRIDS DATA LINK
T1404	UPS DATA LINK
T1011	SPDS CONTROLLER FAILURE
EVCPROGB	EPRI VALIDATION PROGRAM FAILURE
MCCPROGB	MISCELLANEOUS CALCULATION FAILURE

4. **REQUEST** SM/CRS refer to Section 11 of ECG for reporting requirements.
5. At the SM/CRS discretion,
   CONTACT the Digital Systems Group PRIOR to rebooting the SPDS Computer
   AND **INFORM** them that one or both of the SPDS computers have failed.
6. IF multiple SPDS computers have failed during off-hours
   AND SPDS operation is necessary,
   THEN **REBOOT** the computer using the appropriate guidance below.
7. A single computer fault not resulting in loss of data should not be rebooted until the Digital Systems Group has been notified.

(continued on next page)

ATTACHMENT C5

OPERATOR ACTION:

8. **INITIATE** a Notification identifying which computer has failed
   AND any additional information that may be pertinent.
9. On the lower toolbar,
   PRESS the TOP button to bring up the NAP NAVIGATION display.
10. **PRESS** the DLS button under SYSTEM DIAGRAMS to bring up the SYSTEM STATUS display.
11. IF no drops are red or grey,
    PROCCED TO Step 25.
12. **HIGHLIGHT** any drop icon that is red
    AND **PRESS** ACK DROP ALARM AND
    THEN CLR DROP ALARM.
13. **HIGHLIGHT** any drop icon that is red
    AND **PRESS** DROP DETAILS to see error message.
14. IF drops 1 and 51 remain failed
    THEN the SPDS Controllers have failed.
15. IF drops 129 and 130 remain failed
    THEN the SPDS computational servers have failed.
16. IF drops 179 and 180 remain failed
    THEN the data link servers have failed.
17. IF drop 160 remains failed
    THEN the SPDS historian has failed.
18. IF drops are gray on the SYSTEM STATUS display,
    THEN Network Communication has been lost. The most likely cause is SPDS switch failure
19. IF rebooting the SPDS equipment from 163' Elev Computer Room
    THEN **CONTINUE** in this step,
    otherwise, **PROCEED** to Step 25.
20. IF neither drop 1 or 51 are green, but one is YELLOW
    THEN **PRESS** the power toggle switch on the controller that is not YELLOW.
21. IF neither drop 129 or 130 are green, but one is YELLOW
    THEN **PRESS** the power button on the computer that is not YELLOW.
22. IF neither drop 179 or 180 are green, but one is YELLOW
    THEN **PRESS** the power button on the computer that is not YELLOW.
23. IF drop 160 is not green,
    THEN **PRESS** the power button on drop 160 until drop 160 is de-energized
    WAIT one minute
    AND **PRESS** the power button until drop 160 is energized.

(continued on next page)

ATTACHMENT C5

OPERATOR ACTION:

24. IF rebooting the equipment above did not provide at least one green controller, computational server, data link server or historian,
    THEN a complex failure has occurred and will require Digital Systems Group direction.
25. IF there is at least one green controller, computational server, data link server or historian, AND the annunciator is still energized,
    THEN **PROCEED** below.
26. On the lower toolbar,
    PRESS the TOP button to bring up the NAVIGATION display.
27. **IDENTIFY** which buttons underneath the SYSTEM DIAGRAMS window are red.
28. IF one or more RTP icons are red,
    THEN RTP communication has been lost or the primary data link server is inoperable.
    PRESS the icon to obtain detail information on the failure.
29. IF the DLS RMS icon is red,
    THEN RMS communication has been lost or the primary data link server is inoperable.
    PRESS the icon to obtain detailed information on the failure.
30. IF the DLS CRIDS icon is red,
    THEN CRIDS communication has been lost or the primary data link server is inoperable.
    PRESS the icon to obtain detailed information on the failure.
31. IF the DLS UPS icon is red,
    THEN UPS data link communication has been lost or the UPS is not in a normal state.
    PRESS the icon to obtain detailed information on the failure.
32. IF the RTP, DLS, CRIDS DLS RMS or DLS UPS buttons are not in alarm,
    THEN on the lower toolbar,
    PRESS the PROG BUTTON to bring up the NAP NAVIGATION display.
33. **PRESS** the MC NAP ANNUNCIAT button to bring up the MC NAP ANNUNCIATOR display.
34. **IDENTIFY** the points in alarm on the display (RED/YES).
35. IF T1011 is in alarm,
    THEN the SPDS controllers drop 1 and 51 are inoperable.
    IF rebooting drops 1 and 51does not restore the controller,
    THEN SPDS in inoperable.

(continued on next page)

ATTACHMENT C5

OPERATOR ACTION:

36. IF EVCPROGB is in alarm,
    THEN the SPDS data validation program running on the computational servers, drops 129 and 130 is inoperable.
    IF rebooting drops 129 and 130 does not restore the alarm,
    THEN SPDS is inoperable.
37. IF MCCPROGB is in alarm,
    THEN the miscellaneous SPDS calculation program running on computational servers 129 or 130 is inoperable.
    IF rebooting drop 129 and 130 does not restore the alarm,
    THEN SPDS Is inoperable

REFERENCES

J-108-0, Sht 8
E-6797-0, Sht 8
ECG
80059128
80067994

ATTACHMENT D1

APRM/RBM

FLOW REF

OFF NORMAL

Window Location **C6-D1**

OPERATOR ACTION:

1. **CHECK** Recirculation Pump loop flows
   AND **REDUCE**
   IF high.
2. **REQUEST** the SM/CRS to initiate corrective action.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C028	RECIRC FLOW UPSCALE OR INOP	Rod out motion block
C049	RECIRC FLOW COMPAR OUT LIMITS	Rod out motion block

REFERENCES: N1-C51-1080-25, Sht. 40
N1-C51-37-1
N0-C51-1
GEK 90341

ATTACHMENT D2

RPIS

INOPERATIVE

Window Location **C6-D2**

OPERATOR ACTION:

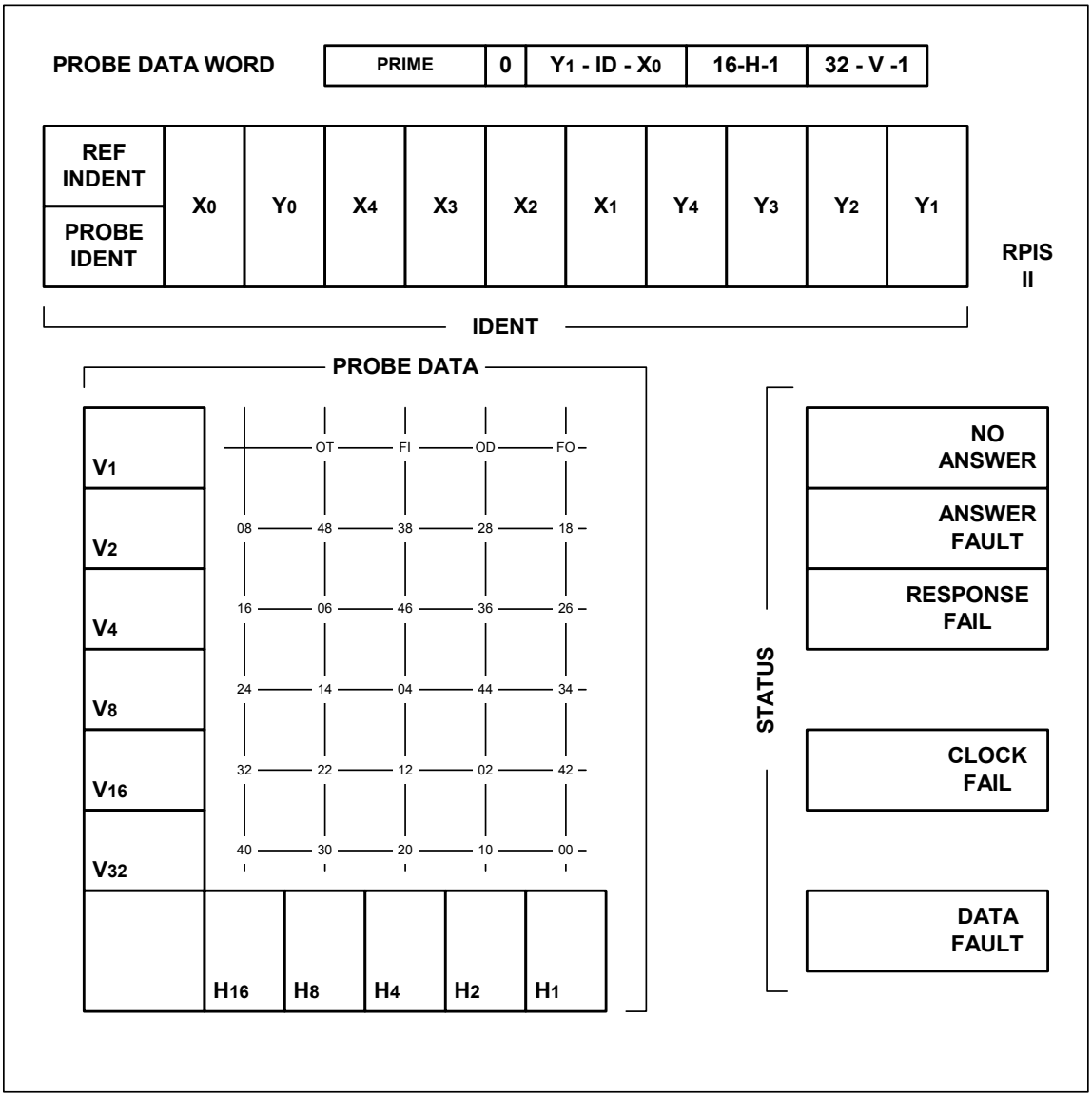
1. **REFER** to HC.OP-AB.IC-0001(Q); Control Rod.
2. **ENSURE** compliance with Technical Specification 3.1.3.7.
3. **COMPLETE** Attachment D2-1 by marking the illuminated LEDs.
   FORWARD completed attachment to Maintenance and Engineering

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C070	RPIS ALARM	A Control Rod Motion Block will be initiated.

REFERENCES: N1-C11-1050-95, Sht. 26
E-6768-0, Sht. 1
80046701

ATTACHMENT D2-1
PROBE DATA DISPLAY 10C615



PROBE DATA DISPLAY 10C615

Date/Time _____ Operator Name _____ Notification Number _____

FORWARD completed attachment to Maintenance and Engineering

ATTACHMENT D3

ROD OUT

MOTION

BLOCK

Window Location **C6-D3**

OPERATOR ACTION:

1. **ENSURE** correct control rod is being withdrawn.
2. **NOTIFY** SM/CRS of alarm condition
   IF abnormal
   OR unexpected.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C048	ROD OUT BLOCK	Rod withdrawal inhibited.
C013	ROD BLOCK-REFUEL MODE	Rod withdrawal inhibited.

REFERENCES: N1-C11-1050-95, Sht. 13, Sht, 14, Sht. 24, Sht. 26
N1-F15-E003-28, Sht. 1
N1-F13-E010-21, Sht. 2
DCP No. 4-HM-0643

ATTACHMENT D3

CONDITION	ROD OUT BLOCK	**SETPOINT**	Various
INDICATION	Rod Withdrawal Inhibited	**ORIGIN**	Various

AUTOMATIC ACTION:

Rod withdrawal inhibited.

OPERATOR ACTION:

DETERMINE specific cause.

CAUSE	CORRECTIVE ACTION
1. APRM upscale	1A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), D4.
2. APRM inoperable	2A **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), C4(C5)
3. APRM downscale	3A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q) E4
4. IRM upscale	4A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), D3
5. IRM downscale	5A. **RESPOND** IAW.. HC.OP-AR.ZZ-0009(Q), E3
6. IRM inoperable.	6A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), C2(C3)
7. IRM not full in.	7A. **INSERT** IRM(s).

ATTACHMENT D3

CAUSE	CORRECTIVE ACTION
8. SRM upscale	8A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), C1.
9. SRM downscale	9A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), E1
10. SRM inoperable	10A. **RESPOND** IAW HC.OP-AR.ZZ-0009(Q), C1
11. SRM not full in	11A. **INSERT** SRM(s).
12. RBM upscale	12A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), E1
13. RBM downscale	13A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), F1
14. RBM inoperable	14A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), E1
15. Scram discharge volume high	15A. **RESPOND** IAW HC.OP-AR.ZZ-0010(Q), B4
16. Scram discharge volume	16A. **RESPOND** IAW HC.OP-AR.ZZ-0010(Q), C4
17. Recirculation flow upscale	17A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), D1
18. Recirculation flow downscale	18A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), D1
19. Recirculation Flow Comparator	19A **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), D1
20. Rod Worth Minimizer System block	20A. **RESPOND** to NSS Computer information

ATTACHMENT D3

CAUSE	CORRECTIVE ACTION
21. Rod Drive Control System block	21A. **RESPOND** IAW HC.OP-AR.ZZ-0011(Q), C2 21B. **RESPOND** IAW HC.OP-AB.IC-0001(Q).
22. Service Platform Fuel Bundle loaded	22A. **UNLOAD** Jib Crane (Refuel Mode). 22B. **INSTALL** dummy plug AM 5 <u>WHEN</u> fuel is not being moved.
23. Refueling Bridge Hoist loaded	23A. **UNLOAD** hoist (Refuel mode).
24. Refueling Bridge Hoist down	24A. **RAISE** hoist (Refuel mode).
25. Refueling Bridge over core	25A. **MOVE** Refueling Bridge from over core (Refuel or Startup mode).
26. Mode Switch in SHUTDOWN	26A. **MOVE** Mode Switch.
27. Mode Switch in REFUEL	27A. **MOVE** Mode Switch (One rod permissive).

ATTACHMENT D3

CONDITION ROD BLOCK-REFUEL MODE **SETPOINT** Various

INDICATION Rod Withdrawal Inhibited **ORIGIN** Various

AUTOMATIC ACTION:

Rod withdrawal inhibited.

OPERATOR ACTION:

DETERMINE specific cause.

CAUSE	CORRECTIVE ACTION
1. Hoist loaded (Refuel Mode, control rod out)	1A. **UNLOAD** Hoist
2. Grapple down or loaded. (Refuel Mode, control rod out)	2A. **UNLOAD** Grapple OR **RAISE** Grapple.
3. Platform over core. (Refuel Mode, control rod out)	3A. **REMOVE** Platform from over core.

ATTACHMENT D4

CRD **ACCUM** **TROUBLE**

Window Location **C6-D4**

OPERATOR ACTION:

ENSURE compliance with Technical Specification 3.1.3.5.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5268	CRD Accumulator	None

REFERENCES: M-47-1, Sht. 1
J-47-0, Sht. 3
CD-825A, GE SIL 294

ATTACHMENT D5

THERMAL **MONITOR** **ALARM/TRBL**	**Window Location** C6-D5 **Setpoint** Various **Origin** Various

NOTE

IF Wet Bulb is > 76°F and Relative Humidity is < 60% for ≥ 60 minutes, THEN the stay of permit for Cooling Tower Blowdown Temperature is in effect.

OPERATOR ACTION:

1. **NOTIFY** SM/CRS of alarm condition
2. **DETERMINE** the cause of the alarm at 10Z688 Thermal Monitor Display Computer (UECR) AND **REFER** to D5920/10Z688 for further actions.
3. IF desired by the SM/CRS, **NOTIFY** Shift Chemistry Supervisor of alarm AND potential NJPDES Permit violation.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5920/10Z688	Station Net Heat Rate in MBTU/HR. (calculated value)	None **SEE** D5920/10Z688 Section 1
D5920/10Z688 or 0SPRI-8817 or 1RFTR-11494 Pen No. 1	Cooling Tower Blowdown Effluent Temperature YD BLDG # 9. Element in OSPRY-8817 System	None **SEE** D5920/10Z688 Section 2
D5920/10Z688 or 0EPTR-2440 or 1RFTR-11494 Pen No. 2	Delaware River Influent Temperature Element in SSWS Intake	None **SEE** D5920/10Z688 Section 3

NOTE: 1RFTR(FR,XY) are located in cabinet 10Z655B (Elev. 163' - Upper Relay Rm).

REFERENCES:

M-09-1	M-10-1, Shts 1, 2, 3	M-63-0
E-9010-1	E-9011-1 Shts 1, 2	E-9010-1
E-9011-1, Shts 1, 2	J-0611-0	80046890

ATTACHMENT D5

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5920/10Z688 or or 0SPRI-4861 or 1RFFR-11494 Pen No. 1	Cooling Tower Blowdown Effluent Flow Rate Across Basin Weir. Element in Basin Weir transmitter in 0SPRY-4861 System	None **SEE** D5920/10Z688 Section 4
D5920/10Z688 or 1DAFR-2218 Pens 1 & 2 or 1RFFR-11494 Pens 2 & 3	Station Service Water flow rates Divisions A & B (Influent flows)	None **SEE** D5920/10Z688 Section 5
D5920/10Z688 or 0SPRI-8817	CTB RMS Fail Signal (Loss of Effluent Temp)°	None **SEE** D5920/10Z688 Section 6
D5920/ 1RFXY-11494	Loss of Power to Thermal Monitor 1RFXY-11494	None **SEE** D5920/10Z688 Section 7
D5920/ 1RFXY-11494 Memory/Halt Lights	Loss of Memory for Thermal Monitor 1RFXY-11494	None **SEE** D5920/10Z688 Section 8
D5920/10Z688	Loss of Power to Thermal Monitor Display System (10Z688)	None **SEE** D5920/10Z688 Section 9

ATTACHMENT E1

RBM

UPSCALE OR

INOPERATIVE

Window Location **C6-E1**

OPERATOR ACTION:

1. **ENSURE** correct control rod is being withdrawn.
2. **PRESS** RBM SET-UP
   IF applicable.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C026	EITHER RBM CHANNEL UPSCALE	Rod motion block
C027	EITHER RBM CHANNEL INOPERATIVE	Rod motion block

REFERENCES: N1-C51-1080-25, Sht. 47
N1-C51-1080-25, Sht. 48
N0-C51-1-2
GEK 90341

ATTACHMENT E3

ROD DRIFT

Window Location **C6-E3**

OPERATOR ACTION:

1. **DETERMINE** which control rod(s) is/are drifting by monitoring the full-core display.
2. IF it is determined that multiple control rods have/are drifted/drifting, **SCRAM** the Reactor AND **ENTER** HC.OP-AB.ZZ-0000(Q); Reactor Scram. [**CD-574F, 270A**]
3. **REFER** to Technical Specification 3/4.1.3 and 3/4.2 for applicability and statements.
4. **OBTAIN** an OD-7 printout. [**CD-434F**]
5. **CHECK** Reactor thermal limits IAW Technical Specifications 3.2.1, 3.2.3, and 3.2.4.
6. **NOTIFY** the On-Call Reactor Engineer IAW HC.RE-AP.ZZ-0101(Q); Interim Reactor Operating Instructions. [**CD-393B**]
7. **NOTIFY** the SM/CRS of alarm condition.
8. Using the Reactor Engineer's instructions AND HC.RE-IO.ZZ- 0001(Q), Core Operations Guidelines, **REPOSITION** the mispositioned control rod.
9. IF multiple rods have drifted, THEN
   - **ENSURE** the RE manager is informed.
   - **ENSURE** a coolant sample is taken and analyzed.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C078	ROD DRIFT ALARM	Alarm only

REFERENCES:

M-46-1
M-47-1, Sht. 1
J-3000-1, Sht. 12
E-6768-0, Sht. 1
N1-C11-1050-95, Sht. 26
DCP No. 4-HM-0490
CD-826A G.E. SIL 292 & SUP 1
CD-760A G.E. SIL 310
CD-393B SOER 84-02R01
CD-270A NRC INFO 81-16
CD-434F G.E. SIL 471 & SUP 1
CD-574F INPO SER 14-89

ATTACHMENT E4

CRD SCRAM **DISCH VOL** **NOT DRAINED**	**Window Location** C6-E4 **Setpoint** 3 gal **Origin** LS-N013F, H

OPERATOR ACTION:

1. **CHECK** to ensure all blue SCRAM lights on Rod and Detector Display are off.
2. **CHECK** HV-F010/F180
   AND HV-F011/F181 indicates OPEN. (10C651C)

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5269	SCRAM DISCH VOLUME NOT DRAINED	None
D5270	SCRAM DISCH VOLUME NOT DRAINED	None

REFERENCES: M-47-0 Sht. 2
GEK-39469D March 1983
M-47-1 Sht. 1
J-47-0 Sht. 2 M-47-1 Sht. 1
CD-674A INPO 80-06R09

ATTACHMENT E5

RMCS DISPLAYS INOP	**Window Location** C6-E5

OPERATOR ACTION:

1. **STOP** control rod movement
2. **REFER** to HC.OP-AB.IC-0001(Q) Control Rod.
3. **REVIEW** the OD-7 display to verify Control Rod Positions
4. **REFER** to Tech Specs: 3.1.3.5, 3.1.3.7, and 3.1.4.1.
5. **CONTACT** Reactor Engineer,
   IF unplanned control rod movement has occurred.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5922	RMCS DISPLAYS INOP	None

REFERENCES: J-47-0, Sht. 3
PJ-200(Q)-2750
PJ-108-35, Sht. 1
PN1-C11-1050-0095
DCP 4EC-3192-2

ATTACHMENT F1

RBM

DOWNSCALE

Window Location **C6-F1**

OPERATOR ACTION:

1. **ENSURE** a control rod withdrawal block has occurred.
2. **DETERMINE** which RBM Channel is in the downscale condition.
3. **REFER** to Technical Specifications 3.1.4.3 and 3.3.6.
4. **NOTIFY** SM/CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C025	EITHER RBM CHANNEL DOWNSCALE	Control Rod withdrawal block

REFERENCES: N1-C51-25, Sht. 33, Sht. 47,
N1-C51-25, Sht. 48
GEK 90300 Volume IV, Part 1

ATTACHMENT F2

CRD SYSTEM TROUBLE	**Window Location** C6-F2

OPERATOR ACTION:

1. **ENSURE** charging water header pressure is being maintained.
2. **REFER** to Technical Specification 3.1.3.5 for applicability.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2244	CRD WATER PUMP A MOTOR	CRD Pump trip: a. Overload b. Undervoltage c. Low suction pressure
D2246	CRD WATER PUMP B MOTOR	
D2248	CRD PMP SUCT ISLN HV4005 OPF	
D2250	CRD WATER PUMP A SUCTION PRESS	
D2252	CRD WATER PUMP B SUCTION PRESS	
D3017	CRD DRIVE WATER FILTER DP	
D3018	CRD WATER PUMP SUCT FILTER DP	
N/A	CRD ROD CHG WTR HDR PRESS	

REFERENCES: M-46-1, J-46-0, Sht. 2, Sht. 7, E-6420-0, E-6422-0, 22A6249AC, Sht 7, N0-C11-42-(1)-9

ATTACHMENT F3

ROD

OVERTRAVEL

Window Location **C6-F3**

OPERATOR ACTION:

1. **MONITOR** Nuclear Instrumentation for any sudden flux changes in the area of the uncoupled rod (potential for rod drop accident is present).
2. **REFER** to HC.OP-AB.IC-0001(Q); Control Rod.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
C071	ROD OVERTRAVEL	None

REFERENCES: N1-C11-1050-95, Sht. 26
E-6768-0, Sht. 1

ATTACHMENT F4

COMPUTER PT

RETURN TO

NORMAL

Window Location **C6-F4**

OPERATOR ACTION:

None

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
A2621	MAIN TURBINE 1ST STAGE PRESS	None
A2925	CHW CHILLER A MTR WINDING TEMP	None
A2927	CHW CHILLER B MTR WINDING TEMP	None
A2929	CHW CHILLER C MOTOR WDG TEMP	None
A3016	CRD ROD PILOT AIR HEADER PRESS	None
A3063	CHW CHILLER D MOTOR WDG TEMP	None
D5562	TSI PANEL TROUBLE	None
D6001	CRIDS BULK FAILURE	None

REFERENCES: J-108-0, Sht. 12
E-6797-0, Sht. A
DCP H-1-RJ-ECS-0035
AR 960424211
DCP 80078688

ATTACHMENT F5

COMPUTER PT **IN** **ALARM**

Window Location **C6-F5**

OPERATOR ACTION:

1. IF A3016 CRD ROD PILOT AIR HEADER PRESS is in Alarm
   THEN **PERFORM** the following:
   a. **DISPATCH** an Operator to inspect for leaks of the Scram Air Header.
   b. **REFER** to HC.OP-AB.COMP-0001(Q), Instrument and/or Service Air.
2. **REFER** to the associated Digital Point/Indication response below.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
A2621	MAIN TURBINE 1ST STAGE PRESS	None
A2925	CHW CHILLER A MTR WINDING TEMP	None
A2927	CHW CHILLER B MTR WINDING TEMP	None
A2929	CHW CHILLER C MOTOR WDG TEMP	None
A3016	CRD ROD PILOT AIR HEADER PRESS	None
A3063	CHW CHILLER D MOTOR WDG TEMP	None
D5562	TSI PANEL TROUBLE	None
D6001	CRIDS BULK FAILURE - CALL DSG	None

REFERENCES: J-108-0, Sht. 12
DCP H-1-RJ-ECS-0035
DCP 80078687
E-6797-0, Sht. A
DCP 80078688
AR 960424211
DCP 80078686