NC.DM-AP.ZZ-0002(Q)

FORM-1
ON-THE-SPOT-CHANGE (OTSC) FORM

PROCEDURE NO: NC.OP-AR.ZZ-0008(Q) OTSC No. 25 A
Order No. 60036505 TM03-025
PROCEDURE TITLE: Overhead Annunciator Window C1 USE CATEGORY: II

DESCRIPTION OF CHANGE: Change Radial Alert Limit:
FROM: 12.0 mils TO: 11.0 mils

REASON FOR CHANGE: Removal of TM 03-025

LIST PAGES CHANGED: 132

Determine if the OTSC alters the intent of the procedure.
Refer to Attachment 1, Change of Intent Criteria. IF ANY of the statements in Attachment 1 are true, THEN the OTSC changes the Intent of the procedure...

STOP! -- DO NOT use an OTSC!

NC & SH procedures: Salem AND HC Ops SM/CRS signatures required prior to use!

INITIATED: P.R. LaSala — Initiator (Print AND Sign) — 10-30-04 — Date

APPROVED: TIFFANY A. BABAN — Supervisor (Print AND Sign) — 10/30/04 — Date

APPROVED: KENNETH P KLASS — **(Hope Creek) Ops SM/CRS** (Print AND Sign) — 10/30/2004 — Date

APPROVED: N/A — **(Salem) Ops SM/CRS** (Print AND Sign) — Date

SUPERVISOR/DESIGNEE:

1. Initiate a Notification to the responsible procedure group to perform the post-implementation review of the OTSC upon final Ops SM/CRS approval.
   Notification No: 20209189
2. Provide an approved copy of the OTSC Package (not the work package) to TDR by the end of shift.
3. Provide an approved copy of the OTSC Package to the Sponsor/Procedure Writer by the end of shift.
4. When applicable, provide an approved copy of the OTSC Package for the Control Room Console(s).
5. Deliver the signed ORIGINAL OTSC Package for use with the procedure.

N/A { Ensure a copy of the completed procedure including the OTSC Package is submitted with the Work Package, if the procedure was part of the work package.

COMPLETED BY: Supervisor/Designee — 3459 Extension — 10/30/04 Date

PSEG NUCLEAR L.L.C.

HOPE CREEK GENERATING STATION

HC.OP-AR.ZZ-0008(Q) - Rev. 25

OVERHEAD ANNUNCIATOR WINDOW BOX C1

USE CATEGORY: II

A. Biennial Review performed Yes ___ No ✓ N/A ___

B. Change Package(s) and Affected Document Number(s) incorporated into this revision.

CP No. _____ CP Rev. No. ___ AD No. _____ AD Rev. No. ___ or None ✓

C. OTSC(s) incorporated into this revision:

OTSC No(s) _____ or None ✓

REVISION SUMMARY

1. **Order 70035925** - Modified Attachment E4 providing guidance on a "Radial Position" alarm. Previously there was no guidance for Radial Position, yet Radial Position could cause this annunciator to alarm.
2. **Order 80066906** - Modified Attachment C2 providing guidance to re-perform a Fill and Vent should the "RWCU PUMP B SEAL CAVITY TEMP" come into alarm following a "Fill and Vent" of the system or leakby of valves used to perform the Fill and Vent.
3. Department Reviewer Comments:
   A. Modified Attachment E4 Step 2 to state: "**REFER** to digital alarm response for Digital Point D5351 and/or D5352 of this attachment for controlling Reactor Recirculation Pump speed." This change is merely a rewording to clarify the digital responses control the reduction in Recirc Pump Speed. This change is **editorial** in nature.
   B. Added guidance to Attachment C2 for D3241 for A RWCU similar to B RWCU in Order 80066906.

IMPLEMENTATION REQUIREMENTS Effective date 5/11/04

None

APPROVED: D Boyle 5-1-04
Manager - Hope Creek Operations Date

OVERHEAD ANNUNCIATOR WINDOW BOX C1

TABLE OF ATTACHMENTS

	1	2	3	4	5
A-	SLC TANK LOW LEVEL PUMP TRIP	RWCU DIFF FLOW HI	ADS/SAFETY RELIEF VLV NOT CLOSED	ADS CH.B INITIATED	ADS CH D INITIATED
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B-	SLC PUMP/VALVE O/PF	RWCU F/D INLET TEMP HI	ADS MANUAL INITIATION SW ARMED	ADS CH B INITIATION PENDING	ADS CH D INITIATION PENDING
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C-	SLC SQUIB VLV LOSS OF CONTINUITY	RWCU SYSTEM TROUBLE	ADS ISOLATOR CARD TRBL	ADS CH B OUT OF SERVICE	ADS CH D OUT OF SERVICE
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D-	SLC INJ VLV STEM NOT FULLY OPEN	RWCU F/D PANEL 10C076	REACTOR RECIRC PUMPS TRIP	REACTOR RECIRC A TROUBLE	REACTOR RECIRC B TROUBLE
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E-	SLC TANK TROUBLE		RX RECIRC PUMPS RPS TRIP BYP	REACTOR RECIRC PUMP VIB HI	SRV LO LO SET ARMED
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F-	SLC/RRCS INITIATION FAILURE	PROCESS SAMPLE CNDCT HI	ADS DRYWELL PRESS BYPASS TIMER INIT	COMPUTER PT RETURN TO NORMAL	COMPUTER PT IN ALARM
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ATTACHMENT A1

SLC TANK LOW LEVEL PUMP TRIP	Window Location C1-A1

OPERATOR ACTION:

1. ENSURE SLC Tank level is low
   AND VERIFY SLC Pump have tripped.
2. TURN OFF SLC Control Tank 0T204 Electric Heaters 10E276
   AND 10E277.
3. ENSURE compliance with the Standby Liquid Control System requirement
   of Technical Specifications 3.1.5.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2383	SLCS TANK LOW LVL PMP A TRIP	SLC Pump AP208 trips IF running.
D2384	SLCS TANK LOW LVL PMP B TRIP	SLC Pump BP208 trips IF running.

REFERENCES: J-48-0, Sht. 5
E-6768-0, Sht. 2

ATTACHMENT A1

DIGITAL ALARM POINT D2383

NOMENCLATURE SLCS TANK LOW LVL PMP A TRIP SETPOINT 260 gals

DESCRIPTION SLC Pump AP208 tripped due to a low-low level in SLC Control Tank 0T204 ORIGIN LT-N010A/E

AUTOMATIC ACTION:

SLC Pump AP208 trips
IF running.

OPERATOR ACTION:

1. **VERIFY** Automatic Action.
2. **TURN OFF** SLC Control Tank 0T204 Electric Heaters 10E276 AND 10E277.
3. Under the direction of the Control Room Supervisor **SEND** an operator to restore the chemical level of SLC Control Tank 0T204 in accordance with HC.OP-SO.BH-0001(Q).
4. **ENSURE** compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. Normal SLC Control Tank chemical useage.	1A. **NOTIFY** the CRS of the situation AND initiate corrective action.
2. LT-N010A & LT-N010E INST Line Valve 1-BH-V059 OR LT-N010B & LT-N010F INST Line Valve 1-BH-V061 is open, or leaking through.	2A. **ENSURE** drain valves 1-BH-V059 AND 1-BH-V061 are closed AND drain line(s) are capped.
3. SLC Control Tank ruptured.	3A. **NOTIFY** the CRS to initiate corrective action.

REFERENCES: M-48-1
J-48-0, Sht. 2, Sht. 5
NUREG-0123

ATTACHMENT A1

DIGITAL ALARM POINT D2384

NOMENCLATURE SLCS TANK LOW LVL PMP B TRIP SETPOINT 260 gals

DESCRIPTION SLC Pump BP208 tripped due to a low-low level in SLC Control Tank 0T204 ORIGIN LT-N010B/F

AUTOMATIC ACTION:

SLC Pump BP208 trips
IF running.

OPERATOR ACTION:

1. VERIFY Automatic Action.
2. TURN OFF SLC Control Tank 0T204 Electric Heaters 10E276 and 10E277.
3. Under the direction of the Control Room Supervisor
   SEND an operator to restore the chemical level of SLC Control Tank 0T204
   in accordance with HC.OP-SO.BH-0001(Q).
4. ENSURE compliance with the Standby Liquid Control System requirements of
   Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. Normal SLC Control Tank chemical useage.	1A. NOTIFY the CRS of the situation AND INITIATE corrective action.
2. LT-N010A & LT-N010E INST Line Valve 1-BH-V059 OR LT-N010B & LT-N010F INST Line Valve 1-BH-V061 is open, or leaking through.	2A. ENSURE drain valves 1-BH-V059 AND 1-BH-V061 are closed AND drain line(s) are capped.
3. SLC Control Tank ruptured.	3A. NOTIFY the CRS initiate corrective action.

REFERENCES: M-48-1
J-48-0, Sht. 2, Sht. 5
NUREG-0123

ATTACHMENT A2

RWCU DIFF FLOW HI	Window Location C1-A2

OPERATOR ACTION:

1. Observing NUMAC,
   MONITOR 10C609-Z1(1SKXR-11497) and 10C611-Z4 (1SKXR-11499),
   VERIFY that RWCU HIGH DIFF CHANNEL A(B) setpoint has been reached.
2. **ENSURE** compliance with the Isolation Actuation Instrumentation of Technical Specification 3.3.2.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5872	RWCU HIGH DIFF FLOW CH A NUMAC MONITOR10C609-Z1 (1SKXR-11497)	RWCU System isolation
D5870	RWCU HIGH DIFF FLOW CH D NUMAC MONITOR10C611-Z4 (1SKXR-11499)	RWCU System isolation

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

		DIGITAL ALARM POINT	D5870
NOMENCLATURE	RWCU HIGH DIFF FLOW CH D	SETPOINT	≥ 56 gpm for > 45 secs
DESCRIPTION	· High differential flow exists in the RWCU System	ORIGIN	NUMAC · 10C611-Z4

AUTOMATIC ACTION:

RWCU System Channel D isolation via closing of Outboard Isolation Valve 1-BG-HV-F004.

OPERATOR ACTION:

1. Observing NUMAC,
   MONITOR 10C611-Z41(1SKXR-11499),
   VERIFY that RWCU HIGH DIFF FLOW CHANNEL D setpoint has been reached, "(RWCU status = ISOL)".
2. **VERIFY** AUTOMATIC ACTION.
3. **ENSURE** compliance with the Isolation Actuation Instrumentation of Technical Specifications 3.3.2.
4. **REFER** to HC.OP-AB.CONT-0002(Q); Primary Containment.

CAUSE	CORRECTIVE ACTION
1. Excessive blowdown to the Main Condenser and/or the Equipment Drain Collection System.	1A. **REDUCE** blowdown flow rate by closing Flow Control Valve 1-BG-HV-F033 enough to prevent a RWCU System isolation.
2. Pressure Relief Valve PSV-3879 of Regenerative Heat Exchanger CE207 or PSV-3880 of Regenerative Heat Exchanger AE207 stuck open.	2A. **MONITOR** CRW Sumps for an increase in level. 2B. **REQUEST** the CRS to initiate corrective action.
3. Excess Flow Check Valve XV-3884B and/or XV-3884D closed Attachment C3.	3A. **REFER** to Digital Point D5760 of alarm response HC.OP-AR.ZZ-0013(Q),

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

DIGITAL ALARM POINT D5870

CAUSE	CORRECTIVE ACTION
4. Improper RWCU System valve line up	4A. **ENSURE** that the RWCU System is properly aligned IAW HC.OP-SO.BG-0001.
5. RWCU System piping rupture	5A. **MONITOR** the Reactor Building for an increase in leakage rates. 5B. **MONITOR** Reactor Building Room temperatures and Δt's as indicated on the appropriate NUMARC. 5C. **SEND** an operator to locate the leak. 5D. **ISOLATE** the leak as directed by the CRS. 5E. **REQUEST** the CRS to initiate corrective action.

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

INPUTS

10C611-Z4 (1SKXR-11499)

NUMAC CHANNEL	Nomenclature/Condition	Automatic Action
RWCU #1	RWCU INLET - N035	TIMER INITIATED
RWCU #2	CAVS FLOW - 11479	TIMER INITIATED
RWCU #3	RWCU DISCHARGE - N040	TIMER INITIATED
RWCU #4	RWCU BLOW DOWN - NO11	TIMER INITIATED

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

DIGITAL ALARM POINT D5872

NOMENCLATURE	RWCU HIGH DIFF FLOW CH A	SETPOINT	≥ 56 gpm for > 45 secs
DESCRIPTION	High differential flow exists in the RWCU System	ORIGIN	NUMAC 10C609-Z1

AUTOMATIC ACTION:

RWCU System isolation via closing of Inboard Isolation Valve HV-F001.

OPERATOR ACTION:

1. **OBSERVE** NUMAC,
   MONITOR 10C609-Z1(SKXR-11497),
   VERIFY that RWCU HIGH DIFF FLOW CHANNEL A setpoint has been reached "(RWCU status ISOL)".
2. **VERIFY** AUTOMATIC ACTION.
3. **ENSURE** compliance with the Isolation Actuation Instrumentation of Technical Specifications 3.3.2.
4. **REFER** to HC.OP-AB.CONT-0002(Q); Primary Containment.

CAUSE	CORRECTIVE ACTION
1. Excessive blowdown to the Main Condenser and/or the Equipment Drain Collection System.	1A. **REDUCE** blowdown flow rate by closing Flow Control Valve 1-BG-HV-F033 enough to prevent a RWCU System isolation.
2. Pressure Relief Valve PSV-3879 of Regenerative Heat Exchanger CE207 or PSV-3880 of Regenerative Heat Exchanger AE207 stuck open.	2A. **MONITOR** CRW Sumps for an increase in level. 2B. **REQUEST** the CRS to **INITIATE** corrective action.
3. Excess Flow Check Valve XV-3884A and/or XV-3884C closed.	3A. **REFER** to digital point D5824 of alarm response HC.OP-AR.ZZ-0013(Q), Attachment C3.

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

DIGITAL ALARM POINT D5872

CAUSE	CORRECTIVE ACTION
4. Improper RWCU System valve line up IAW HC.OP-SO.BG-0001.	4A. **ENSURE** that the RWCU System is properly aligned
5. RWCU System piping rupture.	5A. **MONITOR** the Reactor Building for an increase in leakage rates. 5B. **MONITOR** Reactor Building room temperatures and Δt's as indicated on the appropriate NUMARC. 5C. **SEND** an operator to locate the leak. 5D. **ISOLATE** the leak as directed by the CRS. 5E. **REQUEST** the CRS to initiate corrective action.

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A2

INPUTS

10C609-Z1 (1SKXR-11497)

NUMAC CHANNEL	Nomenclature/Condition	Automatic Action
RWCU #1	RWCU INLET - N035	TIMER INITIATED
RWCU #2	CAVS FLOW - 11479	TIMER INITIATED
RWCU #3	RWCU DISCHARGE - N040	TIMER INITIATED
RWCU #4	RWCU BLOW DOWN – NO11	TIMER INITIATED

REFERENCES: M-44-1
J-25-0, Sht. 9
J-104,-0
PN1-B21-1050-0064 Shts, 1,8,9

ATTACHMENT A3

ADS/SAFETY RELIEF VLV NOT CLOSED	Window Location C1-A3

OPERATOR ACTION:

1. IF ADS
   OR SRV valve(s) are open,
   REFER to HC.OP-AB.RPV-0006(Q).
2. ENSURE compliance with the Safety/Relief Valve requirements of Technical Specifications 3.4.2.
3. ENSURE compliance with the Suppression Chamber requirements of Technical Specifications 3.6.2.
4. ENSURE compliance with the Torus to Drywell Vacuum Breaker requirements of Technical Specification 4.6.4.1.b. [CR 981117102]
5. ENSURE compliance with the Accident Monitoring Instrumentation requirements of Technical Specification 3.3.7.5. (Safety/Relief Valve Position Indicator)

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
OPEN Relief Vlv positions	ADS or SAFETY VLV not reseated	Alarm only
OPEN SRV/ADS VALVES	ADS or SAFETY VLV leaking	Alarm only

REFERENCES: E-6765-0, Sht. A
J-41-0, Sht. 12
CD-782A SIL 196

ATTACHMENT A3

NOMENCLATURE ADS OR SAFETY VLV NOT RESEATED SETPOINT Various

DESCRIPTION OPEN RELIEF VLV POSITIONS ORIGIN Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. IF ADS
   OR SRV valve(s) are open,
   REFER to HC.OP-AB.RPV-0006(Q)
   (requires action within two minutes).

CAUSE	CORRECTIVE ACTION
1. SRV and/or ADS valve(s) automatically opened on reactor high pressure of 1108 psig (4 valves), 1120 psig (5 valves), 1130 psig (5 valves)	1A. **RESPOND** according to HC.OP-EO.ZZ-0101(Q). 1B. **ENSURE** any SRV and/or ADS valve that opened has closed WHEN no longer required to be open.
2. ADS Valve automatically open on ADS actuation.	2A. **RESPOND** according to HC.OP-EO.ZZ-0101(Q). 2B. WHEN ADS is no longer required, under the direction of the CRS **RESET** the ADS initiation. 2C. **ENSURE** any ADS valve that opened has closed WHEN no longer required to be open.

REFERENCES: M-41-1, Sht. 1; Sht. 2
PJ800Q-0020 Shts 1,2,6
J-0650-1, Sht 8
PN1-B21-1060-0063, Sht 12
CD-782A SIL 196

ATTACHMENT A3

CONDITION ADS OR SAFETY VLV NOT RESEATED

CAUSE	CORRECTIVE ACTION
3. SRV and/or ADS valve(s) did not reseat properly upon closing or failed open.	3A. **ATTEMPT** to close the SRV/ ADS valve(s) according to operating procedures and guidelines under the direction of the CRS. 3B. **NOTIFY** the CRS to initiate corrective action.
4. SRV and/or ADS valve(s) are leaking by (indicated by high tailpipe temperature). [CD-782A]	4A. DO NOT cycle valve to clear alarm. High tailpipe temperature could be due to leaking pilot valve. 4B. **NOTIFY** the CRS to initiate corrective action.

REFERENCES:
M-41-1, Sht. 1; Sht. 2
PJ800Q-0020 Shts 1,2,6
J-0650-1, Sht 8
PN1-B21-1060-0063, Sht 12
CD-782A SIL 196

ATTACHMENT A3

NOMENCLATURE ADS OR SAFETY VLV LEAKING SETPOINT Various

DESCRIPTION OPEN SRV/ADS VALVES ORIGIN Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. IF ADS
   OR SRV valve(s) are open,
   REFER to HC.OP-AB.RPV-0006(Q)
   (requires action within two minute)s.

CAUSE	CORRECTIVE ACTION
1. SRV and/or ADS valve(s) automatically opened on reactor high pressure of 1108 psig (4 valves), 1120 psig (5 valves), 1130 psig (5 valves).	1A. **RESPOND** according to HC.OP-EO.ZZ-0101(Q). 1B. **ENSURE** any SRV and/or ADS valve that opened has closed WHEN no longer required to be open.
2. ADS valve automatically open on ADS actuation.	2A **RESPOND** according to HC.OP-EO.ZZ-0101(Q). 2B. WHEN ADS is no longer required, under the direction of the CRS, **RESET** the ADS initiation. 2C. **ENSURE** any ADS valve that opened has closed WHEN no longer required to be open.

REFERENCES: M-41-1, Sht. 1; Sht. 2
PJ800Q-0020 Shts 1,2,6
J-0650-1, Sht. 8
PN1-B21-1060-0063, Sht 12
CD-782A SIL 196

ATTACHMENT A3

CONDITION ADS OR SAFETY VLV LEAKING

CAUSE	CORRECTIVE ACTION
3. SRV and/or ADS valve(s) did not reseat properly upon closing or failed open.	3A. ATTEMPT to close the SRV/ADS valve(s) according to operating procedures and guidelines under the direction of the CRS. 3B. NOTIFY the CRS to initiate corrective action.
4. SRV and/or ADS valve(s) are leaking by (indicated by high tailpipe temperature). [CD-782A]	4A. DO NOT cycle valve to clear alarm. High tailpipe temperature could be due to leaking pilot valve. 4B. NOTIFY the CRS to initiate corrective action.

REFERENCES: M-41-1, Sht. 1; Sht. 2
PJ800Q-0020 Shts 1,2,6
J-0650-1, Sht. 8
PN1-B21-1060-0063, Sht 12

ATTACHMENT A4

ADS CH B INITIATED

Window Location C1-A4

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION AND MONITOR ADS blowdown.
2. REFER to HC.OP-EO.ZZ-0202(Q).
3. ENSURE compliance with the Depressurization Systems Suppression Chamber requirements of Technical Specifications 3.6.2.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5319	ADS CHANNEL B INITIATED	ADS Valves HV-F013A/B/C/D/E open.

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. 2
PN1-B21-1060-0063, Sht. 11

ATTACHMENT A4

DIGITAL ALARM POINT D5319

NOMENCLATURE ADS CHANNEL B INITIATED SETPOINT Various

DESCRIPTION ADS blowdown actuated ORIGIN Multiple

AUTOMATIC ACTION:

ADS Valves HV-F013A/B/C/D/E open.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION
   AND MONITOR ADS blowdown.
2. REFER to HC.OP-EO.ZZ-0202(Q).
3. ENSURE compliance with the Depressurization Systems Suppression Chamber requirements of Technical Specifications 3.6.2.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic B conditions exist: High Drywell pressure(≥ 1.68 psig) OR High Drywell Pressure Bypass Timer (5 minute) timed out AND RPV Level 1 (≤ -129") AND RPV Level 3 (≤ 12.5") (Confirmatory) AND ADS Logic B Actuation Timer (105 second) timed out AND RHR Pump B OR D running (discharge ≥ 125 psig) OR Core Spray Pump B AND D running (discharge ≥ 145 psig).	1A. Same as above.

REFERENCES: J-41-0, Sht. 12
PN1-B21-1060-0063, Shts 4,5,7,11

ATTACHMENT A5

ADS CH D INITIATED

Window Location C1-A5

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION AND MONITOR ADS blowdown.
2. REFER to HC.OP-EO.ZZ-0202(Q).
3. ENSURE compliance with the Depressurization Systems Suppression Chamber requirements of Technical Specifications 3.6.2.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5324	ADS CHANNEL D INITIATED	ADS Valves HV-F013A/B/C/D/E open.

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. 2
PN1-B21-1060-0063, Sht. 11

ATTACHMENT A5

DIGITAL ALARM POINT D5324

NOMENCLATURE ADS CHANNEL D INITIATED SETPOINT Various

DESCRIPTION ADS blowdown actuated ORIGIN Multiple

AUTOMATIC ACTION:

ADS Valves HV-F013A/B/C/D/E open.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION
   AND MONITOR ADS blowdown.
2. REFER to HC.OP-EO.ZZ-0202(Q).
3. ENSURE compliance with the Depressurization Systems Suppression Chamber requirements of Technical Specifications 3.6.2.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic D conditions exist: High Drywell pressure(≥ 1.68 psig) OR High Drywell Pressure Bypass Timer (5 minute) timed out AND RPV Level 1 (≤ -129") AND RPV Level 3 (≤ 12.5") (Confirmatory) AND ADS Logic D Actuation Timer (105 second) timed out AND RHR Pump A OR C running (discharge ≥ 125 psig) OR Core Spray Pump A AND C running (discharge ≥ 145 psig).	1A. Same as above.

REFERENCES: J-41-0, Sht. 12
PN1-B21-1060-0063, Shts 4,5,8,11

ATTACHMENT B1

SLC PUMP/VALVE O/PF	Window Location C1-B1

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3022	SLC INJ PMP AP208 TROUBLE	SLC Pump AP208 trips.
D3023	SLC INJ PMP BP208 TROUBLE	SLC Pump BP208 trips.
D5697	SLC OUTBD ISLN V HV-F006A OPF	SLC Injection Valve BH-HV-F006A becomes inoperative AND the OVLD/PWR FAIL light associated with BH-HV-F006A cycles on and off.
D5698	SLC OUTBD ISLN V HV-F006B OPF	SLC Injection Valve BH-HV-F006B becomes inoperative AND the OVLD/PWR FAIL light BH-HV-F006B cycles on and off.

REFERENCES: J-48-0, Sht. 5
E-6768-0, Sht. 2

ATTACHMENT B1

DIGITAL ALARM POINT D3022

NOMENCLATURE SLC INJ PMP AP208 TROUBLE SETPOINT N/A

DESCRIPTION Pump AP208 no longer operative. ORIGIN MCC 10B212

AUTOMATIC ACTION:

SLC Pump AP208 trips.

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLC Injection Pump Motor AP208 inoperative due to: a. breaker tripped b. thermal overloads tripped c. faulty control power fuse d. faulty control power transformer	1A. SEND an operator to breaker 52-212063 to determine fault. 1B. IF the breaker has tripped OR thermal overloads have tripped OR control fuse is blown, INSPECT pump's motor for mechanical interference, low lube oil level, high motor temperature, etc. 1C. NOTIFY the CRS prior to resetting any breaker fault or IF any pump/motor problems are found.
Continued	

REFERENCES: E-6050-0
J-48-0, Sht. 2; Sht. 5
PJ200(Q) - 0413
M-48-1

ATTACHMENT B1

DIGITAL ALARM POINT D3022

CAUSE	CORRECTIVE ACTION
1. SLC Injection Pump Motor AP208 inoperative due to: a. breaker tripped b. thermal overloads tripped c. faulty control power fuse d. faulty control power transformer	1D. IF the breaker OR thermal overloads trip OR the control power/fuse blows after being reset/replaced, NOTIFY the CRS to initiate corrective action. **NOTE** Manually opening breaker 52-212063 will not cause this alarm to actuate.

REFERENCES: E-6050-0
J-48-0, Sht. 2; Sht. 5
PJ200(Q) - 0413
M-48-1

ATTACHMENT B1

DIGITAL ALARM POINT D3023

NOMENCLATURE SLC INJ PMP BP208 TROUBLE SETPOINT N/A

DESCRIPTION SLC Pump BP208 no longer operative. ORIGIN MCC 10B222

AUTOMATIC ACTION:

SLC Pump BP208 trips.

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLC Injection Pump Motor BP208 inoperative due to: a. breaker tripped b. thermal overloads tripped c. faulty control power fuse d. faulty control power transformer	1A. **SEND** an operator to breaker 52-222101 to determine fault. 1B. IF the breaker has tripped OR thermal overloads have blown, **INSPECT** pump motor for mechanical interference, low lube oil level, high motor temperature, etc. 1C. **NOTIFY** the CRS prior to resetting any breaker fault or IF any pump/motor problems are found.
Continued	

REFERENCES: E-6050-0
J-48-0, Sht. 2; Sht. 5
PJ200(Q) - 0413
M-48-1

ATTACHMENT B1

DIGITAL ALARM POINT D3023

CAUSE	CORRECTIVE ACTION
1. SLC Injection Pump Motor BP208 inoperative due to: a. breaker tripped b. thermal overloads tripped c. faulty control power fuse d. faulty control power transformer	1D. IF the breaker OR thermal overloads trip OR the control power/fuse blows after being reset/replaced, **NOTIFY** the CRS to initiate corrective action. **NOTE** Manually opening breaker 52-222101 will not cause this alarm to actuate.

REFERENCES: E-6050-0
J-48-0, Sht. 2; Sht. 5
PJ200(Q) - 0413
M-48-1

ATTACHMENT B1

DIGITAL ALARM POINT D5697

NOMENCLATURE SLC OUTBD ISLN V HV-F006A OPF SETPOINT N/A

DESCRIPTION SLCS Isolation Valve stem INOP ORIGIN MCC 10B212

AUTOMATIC ACTION:

SLCS Isolation Valve HV-F006A becomes inoperative
AND the OVLD/PWR FAIL light associated with HV-F006A cycles on and off.

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-212202. 1B. IF breaker OR thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: E-6052-0
J-48-0, Sht. 3; Sht. 5
PJ200(Q) - 0802
M-48-1

ATTACHMENT B1

DIGITAL ALARM POINT D5698

NOMENCLATURE SLC OUTBD ISLN V HV-F006B OPF SETPOINT N/A

DESCRIPTION SLCS Isolation Valve stem INOP ORIGIN MCC 10B242

AUTOMATIC ACTION:

SLCS Isolation Valve HV-F006B becomes inoperative
AND the OVLD/PWR FAIL light associated with HV-F006B cycles on and off.

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d control power transformer failure	1A. SEND an operator to breaker 52-242203. 1B. IF breaker OR thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action

REFERENCES: E-6052-0
J-48-0, Sht. 3; Sht. 5
PJ200(Q) - 0802
M-48-1

ATTACHMENT B2

RWCU F/D INLET TEMP HI

Window Location C1-B2

OPERATOR ACTION:

ENSURE RWCU Outboard Isolation Valve HV-F004 closes.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5357	RWCU FILTER INLET TEMP HI	RWCU Outboard Isolation Valve HV-F004 closes. NOTE Operating RWCU Pumps will trip on the HV-F004 close signal.

REFERENCES: M-44-1
J-44-0, Sht. 4
PN1-G33-1010-0098
HCGS Sys. Des. Vol. 3 Chap 16

ATTACHMENT B2

DIGITAL ALARM POINT D5357

NOMENCLATURE RWCU FILTER INLET TEMP HI SETPOINT 140°F

DESCRIPTION Isolation to protect F/D resin ORIGIN TE-N007

AUTOMATIC ACTION:

RWCU Outboard Isolation Valve HV-F004 closes.

OPERATOR ACTION:

1. VERIFY that the RWCU F/D INLET TEMP HI setpoint has been reached.
2. VERIFY AUTOMATIC ACTION

CAUSE	CORRECTIVE ACTION
1. Reduced OR loss of RWCU Non- Regenerative Heat Exchanger cooling from RACS.	1A. INCREASE the RACS cooling flow to the RWCU Non-Regenerative Heat Exchanger. 1B. REFER to HC.OP-AB.COOL-0003(Q), Reactor Auxiliary Cooling.
2. RWCU blowdown flow rate going to the Main Condenser and/or the Equip. Drain Collection System is too high.	2A. STOP RWCU System blowdown AND REFER to HC.OP-SO.BG-0001(Q) RWCU System Operation for restoration of system.

REFERENCES: M-44-1
J-44-0, Sht. 4
PN1-G33-1010-0098
HCGS Sys. Des. Vol. 3 Chap. 16

ATTACHMENT B3

ADS MANUAL INITIATION SW ARMED

Window Location C1-B3

OPERATOR ACTION:

DETERMINE IF the reason for manually arming any of the ADS manual initiation circuits is warranted.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3083	ADS LOGIC B INIT SW S6B ARMED	Alarm only
D2284	ADS LOGIC B INIT SW S6F ARMED	Alarm only
D2478	ADS LOGIC D INIT SW S6D ARMED	Alarm only
D2506	ADS LOGIC D INIT SW S6H ARMED	Alarm only

REFERENCES: J-41-0, Sht. 11
J-0650-1, Sht. 8

ATTACHMENT B3

DIGITAL ALARM POINT D3083

NOMENCLATURE ADS LOGIC B INIT SW S6B ARMED SETPOINT N/A

DESCRIPTION ADS Logic B arming collar for Logic Channel B armed. ORIGIN Panel 10C650C

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE IF the reason for manually arming Logic Channel B of ADS Logic B is warranted.
2. NOTIFY CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. The arming collar of ADS Logic B Logic Channel B turned ON.	1A. DETERMINE IF the reason for arming Logic Channel B of ADS Logic B is justified. IF NOT, DISARM the manual initiation arming collar. 1B. REQUEST the CRS initiate corrective action.

REFERENCES: J-41-0, Sht. 11

ATTACHMENT B3

DIGITAL ALARM POINT D2284

NOMENCLATURE ADS LOGIC B INIT SW S6F-ARMED SETPOINT N/A

DESCRIPTION ADS Logic B arming collar for Logic Channel F armed. ORIGIN Panel 10C650C

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE
   IF the reason for manually arming Logic Channel F of ADS Logic F is warranted.
2. NOTIFY CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. The manual arming collar of ADS Logic B Logic Channel F turned ON.	1A. DETERMINE IF the reason for arming Logic Channel F of ADS Logic B is justified. IF NOT, DISARM the manual initiation arming collar. 1B. REQUEST the CRS initiate corrective action.

REFERENCES: J-41-0, Sht. 11

ATTACHMENT B3

DIGITAL ALARM POINT D2478

NOMENCLATURE ADS LOGIC.D INIT SW S6D ARMED SETPOINT N/A

DESCRIPTION ADS Logic D arming collar for Logic Channel D armed. ORIGIN Panel 10C650C

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE
   IF the reason for manually arming Logic Channel D of ADS Logic D is warranted.
2. NOTIFY CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. The manual arming collar of ADS Logic D Logic Channel D turned ON.	1A. DETERMINE IF the reason for arming Logic Channel D of ADS Logic D is justified. IF NOT, DISARM the manual initiation arming collar. 1B. REQUEST the CRS initiate corrective action.

REFERENCES: J-41-0, Sht. 11

ATTACHMENT B3

DIGITAL ALARM POINT D2506

NOMENCLATURE ADS LOGIC D INIT SW S6H ARMED SETPOINT N/A

DESCRIPTION ADS Logic D arming collar for Logic Channel H armed. ORIGIN Panel 10C650C

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE
   IF the reason for manually arming Logic Channel H of ADS Logic D is warranted.
2. NOTIFY CRS of alarm condition.

CAUSE	CORRECTIVE ACTION
1. The manual arming collar of ADS Logic D Logic Channel H turned ON.	1A. DETERMINE IF the reason for arming Logic Channel H of ADS Logic D is justified. IF NOT, DISARM the manual initiation arming collar. 1B. REQUEST CRS initiate corrective action.

REFERENCES: J-41-0, Sht. 11

ATTACHMENT B4

ADS CH B INITIATION PENDING

Window Location C1-B4

OPERATOR ACTION:

1. VERIFY that the ADS automatic initiation setpoints have been reached.
2. RESET the ADS Logic B Actuation Timer (105 second)
   OR ALLOW the ADS initiation to occur according to operating procedures and guidelines, under the direction of the CRS.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2161	ADS LOGIC B TIMER INITIATED	Alarm only

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. A
PN1-B21-1060-0063

ATTACHMENT B4

DIGITAL ALARM POINT D2161

NOMENCLATURE	ADS LOGIC B TIMER INITIATED	SETPOINT	Various
DESCRIPTION	ADS initiation pending 105 second timer timing out	ORIGIN	GE Panel H11-P628

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. VERIFY that the ADS automatic initiation setpoints have been reached.
2. RESET the ADS Logic B Actuation Timer (105 second)
   OR ALLOW the ADS initiation to occur according to operating procedures and guidelines, under the direction of the CRS.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic B conditions exist: High Drywell pressure(≥ 1.68 psig) OR High Drywell Pressure Bypass Timer (5 minute) timed out AND RPV Level 1 (≤ -129") AND RPV Level 3 (≤ 12.5") (Confirmatory).	1A. RESPOND IAW HC.OP-EO.ZZ-0101(Q), HC.OP-EO.ZZ-0102(Q). or HC.OP-EO.ZZ-0202(Q).

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. A
PN1-B21-1060-0063

ATTACHMENT B5

ADS CH D INITIATION PENDING

Window Location C1-B5

OPERATOR ACTION:

1. VERIFY that the ADS automatic initiation setpoints have been reached.
2. RESET the ADS Logic D Actuation Timer (105 second)
   OR ALLOW the ADS initiation to occur according to operating procedures and guidelines, under the direction of the CRS.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2034	ADS D LOGIC TIMER INITIATED	Alarm only

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. A
PN1-B21-1060-0063, Sht. 11

ATTACHMENT B5

DIGITAL ALARM POINT D2034

NOMENCLATURE	ADS D LOGIC TIMER INITIATED	SETPOINT	Various
DESCRIPTION	ADS initiation pending 105 second timer timing out	ORIGIN	GE Panel H11-P631

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. VERIFY that the ADS automatic initiation setpoints have been reached.
2. RESET the ADS Logic D Actuation Timer (105 second)
   OR ALLOW the ADS initiation to occur according to operating procedures and guidelines, under the direction of the CRS.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic D conditions exist: High Drywell pressure(≥ 1.68 psig) OR High Drywell Pressure Bypass Timer (5 minute) timed out AND RPV Level 1 (≤ -129") AND RPV Level 3 (≤ 12.5") (Confirmatory).	1A. RESPOND IAW HC.OP-EO.ZZ-0101(Q), HC.OP-EO.ZZ-0102 (Q) or HC.OP-EO.ZZ-0202(Q).

REFERENCES: J-41-0, Sht. 12
E-6765-0, Sht. A
PN1-B21-1060-0063, Sht. 2; Sht. 3, Sht. 4; Sht. 5, Sht. 11; Sht. 12

ATTACHMENT C1

SLC SQUIB VLV LOSS OF CONTINUITY	Window Location C1-C1

OPERATOR ACTION:

1. DETERMINE the reason for the SLC SQUIB VLV LOSS OF CONTINUITY alarm.
2. Under the order of the Control Room Supervisor
   STOP SLC Pump(s) AP208 and/or BP208
   IF SLC injection is not required.
3. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3020	SLCS SQUIB XV-F004A CONTINUITY	Alarm only
D3021	SLCS SQUIB XV-F004B CONTINUITY	Alarm only

REFERENCES: J-48-0, Sht. 5
E-6768-0, Sht. 2

ATTACHMENT C1

DIGITAL ALARM POINT D3020

NOMENCLATURE SLCS SQUIB XV-F004A CONTINUITY SETPOINT N/A

DESCRIPTION Loss of Squib Valve XV-F004A electrical continuity ORIGIN XY-M600A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE the reason for the SLC SQUIB VLV LOSS OF CONTUNITY alarm.
2. Under the order of the Control Room Supervisor
   STOP SLC Pump AP208
   IF SLC injection is not required.
3. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLC Pump AP208 manually started from the 10C651 Panel.	1A. Under the order of the CRS STOP SLC Pump AP208 IF SLC injection is not required.
2. SLC Pump AP208 automatically started due to RRCS initiation signal being present.	2A. ENSURE that the RRCS SLCS initiation signal is valid. IF SLC injection is not required under the order of the Control Room Supervisor STOP SLC Pump AP208.
3. SLC Pump AP208 breaker tripped.	3A. SEND an operator to MCC 10B212 to determine IF breaker 52-212063 has tripped. IF so, RESET breaker 52-212063.
Continued	

REFERENCES: M-48-1
J-48-0, Sht. 5
E-0021-1, Sht. 1

ATTACHMENT C1

DIGITAL ALARM POINT D3020

CAUSE	CORRECTIVE ACTION
3. SLC Pump AP208 breaker tripped (Continued)	3B. IF breaker 52-212063 cannot be reset NOTIFY the Control Room Supervisor to initiate corrective action. 3C. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.
4. Internal electrical malfunction of Squib Valve XV-F004A.	4A. NOTIFY the Control Room Supervisor of the situation AND to initiate corrective action. 4B. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

REFERENCES: M-48-1
J-48-0, Sht. 5
E-0021-1, Sht. 1

ATTACHMENT C1

DIGITAL ALARM POINT D3021

NOMENCLATURE SLCS SQUIB XV-F004B CONTINUITY SETPOINT N/A

DESCRIPTION Loss of Squib Valve XV-F004B electrical continuity ORIGIN XY-M600B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE the reason for the SLC SQUIB VLV LOSS OF CONTUNITY alarm.
2. Under the order of the Control Room Supervisor
   STOP SLC Pump BP208
   IF SLC injection is not required.
3. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLC Pump BP208 manually started from the 10C651 Panel.	1A. Under the order of the CRS, STOP SLC Pump BP208 IF SLC injection is not required.
2. SLC Pump BP208 automatically started due to RRCS initiation signal being present.	2A. ENSURE that the RRCS SLCS initiation signal is valid. IF SLC injection is not required under the order of the Control Room Supervisor STOP SLC Pump BP208.
3. SLC Pump BP208 breaker tripped.	3A. SEND an operator to MCC 10B222 to determine IF breaker 52-222101 has tripped. IF so RESET breaker 52-222101.
Continued	

REFERENCES: M-48-1
J-48-0, Sht. 5
E-0021-1, Sht. 3

ATTACHMENT C1

DIGITAL ALARM POINT D3021

CAUSE	CORRECTIVE ACTION
3. SLC Pump BP208 breaker tripped (Continued)	3B. IF breaker 52-222101 cannot be reset **NOTIFY** the Control Room Supervisor to initiate corrective action. 3C. **ENSURE** compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.
4. Internal electrical malfunction of Squib Valve XV-F004B.	4A. **NOTIFY** the Control Room Supervisor of the situation AND to initiate corrective action. 4B. **ENSURE** compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

REFERENCES: M-48-1
J-48-0, Sht. 5
E-0021-1, Sht. 3

ATTACHMENT C2

RWCU SYSTEM TROUBLE

Window Location C1-C2

OPERATOR ACTION:

IF both RWCU Recirc Pumps are running, AND 1 trips,
ENSURE system flow is within capacity of remaining RWCU Pump (pump runout leads to seal failure).
Computer Point A-2856 RWCU OUTLET FLOW TO FDW < 134 gpm.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D3142	RWCU RTN/MN COND HV-F034 OPF	None
D3143	RWCU INBD ISLN HV-F001 OPF	
D3144	RWCU OUTBD ISLN HV-F004 OPF	
D3145	RWCU DR/EQPT DR TK HV-F035 OPF	
D3146	RWCU RTN TO REAC HV-F039 OPF	
D3147	RWCU TO CHEM W TK HV-3980 OPF	
D3241	RWCU PUMP A SEAL CAVITY TEMP	
D3242	RWCU PUMP B SEAL CAVITY TEMP	

REFERENCES: M-44-1
J-44-0, Sht. 4

ATTACHMENT C2

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5356	RWCU DISCHARGE PRESSURE	Blowdown flow control valve HV-F033 closes
D5358	RWCU PUMP AP221 MOTOR MALF	AP221 trips
D5359	RWCU PUMP BP221 MOTOR MALF	BP221 trips

REFERENCES: M-44-1
J-44-0, Sht. 4

ATTACHMENT C2

DIGITAL ALARM POINT D3142

NOMENCLATURE RWCU RTN/MN COND HV-F034 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

IF OVLD/PWR FAIL for HV-F034 RWCU RTN TO CNDSR (10C651C) is flashing,
DETERMINE cause
AND PERFORM CORRECTIVE ACTION as listed below.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-212211 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4;Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3143

NOMENCLATURE RWCU INBD ISLN HV-F001 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. VERIFY HV-F001 PUMP SUCT CONT INBD (10C651C).
   IF position indication is available
   AND OVLD/PWR FAIL is flashing, thermal overloads have tripped.
   PERFORM CORRECTIVE ACTION as listed below.
2. IF position indication is lost
   AND OVLD/PWR FAIL is flashing,
   DETERMINE cause
   AND PERFORM CORRECTIVE ACTION as listed below.
3. ENSURE compliance with the Technical Specification 3/4.6.3.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-212021 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-44-0,
J-44-0, Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3144

NOMENCLATURE RWCU OUTBD ISLN HV-F004 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. VERIFY HV-F004 PUMP SUCT CONT OUTBD (10C651C).
   IF position indication is available
   AND OVLD/PWR FAIL is flashing, thermal overloads have tripped.
   PERFORM CORRECTIVE ACTION as listed below.
2. IF position indication is lost
   AND OVLD/PWR FAIL is flashing,
   DETERMINE cause
   AND PERFORM CORRECTIVE ACTION as listed below.
3. ENSURE compliance with the Technical Specification 3/4.6.3.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-242081 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-44-0
J-44-0, Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3145

NOMENCLATURE RWCU DR/EQPT DR TK HV-F035 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

IF OVLD/PWR FAIL for HV-F035 RWCU TO EQPT DRN is flashing (10C651C),
DETERMINE cause
AND PERFORM CORRECTIVE ACTION as listed below.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-242084 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-44-0
J-44-0, Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3146

NOMENCLATURE RWCU RTN TO REAC HV-F039 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

IF OVLD/PWR FAIL for HV-F039 RWCU RTN TO RPV is flashing (10C651C),
DETERMINE cause
AND **PERFORM** CORRECTIVE ACTION as listed below.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. **SEND** an operator to breaker 52-242161 1B. IF breaker or thermal overloads are tripped, **NOTIFY** CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, **REQUEST** CRS to initiate corrective action.

REFERENCES: M-44-0
J-44-0, Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3147

NOMENCLATURE RWCU TO CHEM W TK HV-3980 OPF SETPOINT N/A

DESCRIPTION Overload/power failure ORIGIN N/A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

IF OVLD/PWR FAIL for HV-3980 RWCU RTN TO CHEM WASTE TK is flashing (10C651C),
DETERMINE cause
AND PERFORM CORRECTIVE ACTION as listed below.

CAUSE	CORRECTIVE ACTION
1. MOV inoperative a. breaker trip b. thermal overload c. control power fuse blown d. control power transformer failure	1A. SEND an operator to breaker 52-242124 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-44-0
J-44-0, Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D3241

NOMENCLATURE RWCU PUMP A SEAL CAVITY TEMP SETPOINT 250°F

DESCRIPTION High temperature seal cavity ORIGIN TISH-N002A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF AP221 is OFF,
   SEND an operator to verify shut 1BG-V004.
   IF necessary,
   SHUT 1BG-V003, IF open.
2. IF AP221 is ON,
   SEND an operator to check for seal leakage and to
   ENSURE RACS is available to the RWCU Pump.

Note

Pumps should not be tripped except for a plant condition which demands the pump shutdown. There is no pump related reason for tripping a pump unless it has failed mechanically. Thus, the pump should not be tripped by an RTD signal, since the seal of the tripped pump will not be cooled.

CAUSE	CORRECTIVE ACTION
1. Seal leakage OR failure	1A. CHECK the pump seal for leakage (water or steam). IF leakage is present, REMOVE AP221from service IAW HC.OP-SO.BG-0001(Q).
Continued	

REFERENCES: M-13-1
M-44-1

ATTACHMENT C2

DIGITAL ALARM POINT D3241

CAUSE	CORRECTIVE ACTION
2. Improper valve lineup from RACS	2A. ENSURE the following RACS valves are open: 1ED-V147, 1ED-V148, 1ED-V149, 1ED-V150, 1ED-V151, 1ED-V152, 1ED-V016, 1ED-V086 (throttled), 1ED-V081,
3. Loss of RACS.	3A IF a loss of RACS has occurred, RWCU (BG) will isolate due to high temperature outlet of NRHX. REFER to HC.OP-AB.CONT-0002(Q) AND HC.OP-SO.BG-0001(Q) for returning RWCU to service following an isolation.
4. Voids in system following fill and vent OR leakby of valves used to fill and vent.	4A. WITH 1BG-V004 CLOSED, RE-PERFORM Fill and Vent IAW HC.OP-SO.BG-0001(Q), Reactor Water Cleanup System Operation PRIOR to opening 1BG-V004 and starting the RWCU Pump.

REFERENCES: M-13-1
M-44-1

ATTACHMENT C2

DIGITAL ALARM POINT D3242

NOMENCLATURE RWCU PUMP B SEAL CAVITY TEMP SETPOINT 250°F

DESCRIPTION High temperature seal cavity ORIGIN TISH-N002B

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. IF BP221 is OFF,
   SEND an operator to verify shut 1BG-V008.
   IF necessary,
   SHUT 1BG-V007, IF open.
2. IF BP221 is ON,
   SEND an operator to check for seal leakage
   AND ENSURE RACS is available to the RWCU Pump.

NOTE

Pumps should not be tripped except for a plant condition which demands the pump shutdown. There is no pump related reason for tripping a pump unless it has failed mechanically. Thus, the pump should not be tripped by an RTD signal, since the seal of the tripped pump will not be cooled.

CAUSE	CORRECTIVE ACTION
1. Seal leakage or failure	1A. CHECK the pump seal for leakage (water or steam). IF leakage is present, REMOVE BP221 from service IAW HC.OP-SO.BG-0001(Q).
Continued next page	

REFERENCES: M-13-1
M-44-1

ATTACHMENT C2

DIGITAL ALARM POINT D3242

CAUSE	CORRECTIVE ACTION
2. Improper valve lineup from RACS	2A. **ENSURE** the following RACS valves are open: 1ED-V153, 1ED-V154, 1ED-V155, 1ED-V156, 1ED-V157, 1ED-V158, 1ED-V015, 1ED-V087 (throttled), 1ED-V080
3. Loss of RACS	3A. IF a loss of RACS has occurred, RWCU (BG) will isolate due to high temperature outlet of NRHX. **REFER** to HC.OP-AB.CONT-0002(Q) AND HC.OP-SO.BG-0001(Q) for returning RWCU to service following an isolation.
4. Voids in system following fill and vent OR leakby of valves used to fill and vent.	4A. WITH 1BG-V008 CLOSED, **RE-PERFORM** Fill and Vent IAW HC.OP-SO.BG-0001(Q), Reactor Water Cleanup System Operation PRIOR to opening 1BG-V008 and starting the RWCU Pump.

REFERENCES: M-13-1
M-44-1

ATTACHMENT C2

DIGITAL ALARM POINT D5356

NOMENCLATURE RWCU DISCHARGE PRESSURE SETPOINT ≤5 psig
≥140 psig

DESCRIPTION RWCU Discharge Hi/Lo pressure at HV-F033 ORIGIN PSH-N014
PSL-N013

AUTOMATIC ACTION:

Blowdown Valve HV-F033 fails closed.

OPERATOR ACTION:

1. PRESS HIC R606 DR FL CONT DECREASE PB until POSITION DEMAND indicates 0. (10C651C)
2. CHECK A2947 RWCU COND PMP FLOW indicates 0 gpm.
3. CHECK A2950 RWCU REGEN HX INLET PRESS to determine system pressure.

CAUSE	CORRECTIVE ACTION
1. Low pressure upstream of blowdown valve **NOTE** This isolation prevents the operator from draining RWCU from an isolated system	1A. VERIFY RWCU valve lineup on 10C651C to ensure all valves are in correct position required for the evolution in progress. 1B. WHEN proper lineup has been established, AND pressure upstream of HV-F033 · > 5 psig, SV-F033 re-energizes, allowing HIC-R606 DR FL CONT to position HV-F033.
Continued next page	

REFERENCES: M-44-1
J-44-0, Sht. 3; Sht. 4

ATTACHMENT C2

DIGITAL ALARM POINT D5356

CAUSE	CORRECTIVE ACTION
2. High pressure downstream of blowdown valve **NOTE** This isolation prevents overpressurization of blowdown piping.	2A. IF blowing down to the Main Condenser, VERIFY open HV-F034, RWCU RTN TO COND. (10C651C) 2B. IF blowing down to Radwaste, VERIFY open HV-F035, BLDG. TO EQUIP DRN COL (10C651C) 2C. IF HV-F034 OR F035 is in correct position, REQUEST Radwaste Operator to verify his lineup to Waste Collector or Waste Surge Tanks is correct.

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4

ATTACHMENT C2

DIGITAL ALARM POINT D5358

NOMENCLATURE RWCU PUMP AP221 MOTOR MALF SETPOINT N/A

DESCRIPTION Motor malfunction ORIGIN N/A

AUTOMATIC ACTION:

RWCU Recirc Pump AP221 will trip.

OPERATOR ACTION:

1. Loss of a RWCU Pump,
   WHEN in two pump operation, can cause pump runout.
   Flow must be reduced immediately by throttling HV-F042, REGEN HX RTN ISLN,
   until Chemistry can remove a Filter/Demin from service.
2. IF both F/D were in service,
   REMOVE 1 F/D from service IAW HC.OP-SO.BG-0001(Q);
   Reactor Water Cleanup System Operation.
3. IF both RWCU Pumps were ON,
   WITH 0 or 1 F/D in service,
   ADJUST HV-044 as necessary to maintain system flow at 134 gpm.

CAUSE	CORRECTIVE ACTION
1. Low suction flow (< 70 gpm for 30 seconds)	1A. ENSURE a flow path exists. IF draining from the vessel is in progress without return to vessel, ENSURE minimum blowdown flow of 70 gpm is maintained. 1B. PRESS LOW SUCTION FLOW PB on RWCU Pump AP221. (10C651C) 1C. REFER to HC.OP-SO.BG-0001(Q); RWCU System Operation for procedure to return tripped RWCU Pump to service.
Continued next page	

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4

ATTACHMENT C2

DIGITAL ALARM POINT D5358

CAUSE	CORRECTIVE ACTION
2. Loss of control power	2A. IF the STOP is flashing, the RWCU Recirc Pump has tripped due to loss of control power. 2B. IF the STOP is lost, the RWCU Recirc Pump is unavailable for service due to loss of control power.

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4; Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D5359

NOMENCLATURE RWCU PUMP BP221 MOTOR MALF SETPOINT N/A

DESCRIPTION Motor malfunction ORIGIN N/A

AUTOMATIC ACTION:

RWCU Recirc Pump BP221 will trip.

OPERATOR ACTION:

1. Loss of a RWCU Pump,
   WHEN in two pump operation, can cause pump runout.
   Flow must be reduced immediately by throttling HV-F042, REGEN HX RTN ISLN,
   until Chemistry can remove a Filter/Demin from service.
2. IF both F/D were in service,
   REMOVE 1 F/D from service IAW HC.OP-SO.BG-0001(Q);
   Reactor Water Cleanup System Operation.
3. IF both RWCU Pumps were ON,
   WITH 0 or 1 F/D in service;
   ADJUST HV-044 as necessary to maintain system flow at 134 gpm.

CAUSE	CORRECTIVE ACTION
1. Low suction flow (< 70 gpm for 30 seconds)	1A. ENSURE a flow path exists IF draining from the vessel is in progress without return to vessel, ENSURE minimum blowdown flow of 70 gpm is maintained. 1B. PRESS LOW SUCTION FLOW PB on RWCU Pump BP221. (10C651C) 1C. REFER to HC.OP-SO.BG-0001(Q); RWCU System Operation for procedure to return tripped RWCU Pump to service.
Continued next page	

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4; Sht. 8

ATTACHMENT C2

DIGITAL ALARM POINT D5359

CAUSE	CORRECTIVE ACTION
2. Loss of control power	2A. IF the STOP is flashing, the RWCU Recirc Pump has tripped due to loss of control power. 2B. IF the STOP is lost, the RWCU Recirc Pump is unavailable for service due to loss of control power.

REFERENCES: M-44-0
J-44-0, Sht. 3; Sht. 4;Sht. 8

ATTACHMENT C3

ADS ISOLATOR CARD TRBL	Window Location C1-C3

OPERATOR ACTION:

1. MONITOR drywell pressure, Reactor water level AND ADS/Safety Valve positions.
2. REQUEST the CRS to initiate corrective action.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5314	ADS B ISOLATER INPUT CARD OUT	Alarm only
D5316	ADS D ISOLATER IN CARD OUT	Alarm only
D5755	ADS B ISOLATER OUT CARD OUT	Alarm only
D5756	ADS D ISOLATER OUT CARD OUT	Alarm only

REFERENCES: E-6765-0, Sht. A
N1-B21-63, Sht. 11
J-41-0, Sht. 15

ATTACHMENT C3

DIGITAL ALARM POINT D5314

NOMENCLATURE ADS B ISOLATER INPUT CARD OUT SETPOINT N/A

DESCRIPTION Division 2 alarm indicators lost ORIGIN GE Panel 10C628

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR drywell pressure, Reactor water level
AND ADS/Safety Valve positions.

CAUSE	CORRECTIVE ACTION
1. Digital isolator AT2's 2 Amp fuse F49, located in GE Panel 10C618, faulty.	1A. REQUEST the CRS to initiate corrective action.
2. Digital isolator AT2's power supply PS1B 10 Amp fuse, F41B, located in GE Panel 10C618 is faulty.	2A. Same as above.
3. Loss of power to digital isolator AT2's inverter PS1B.	3A. SEND an operator to120VAC Panel 1BJ481 to DETERMINE IF breaker 18 has tripped. IF so under the order of the Control Room Supervisor have the dispatched operator RESET Breaker 18.
4. ADS Div. 2 digital isolator AT2, located in GE Panel 10C618, has at least one input logic card out of file.	4A. REQUEST the CRS to initiate corrective action.

REFERENCES: PN1-E21-1040-0383, Sht. 6A
PN1-B21-1060-0063, Sht. 11
E-6765-0, Sht. A
J-41-0, Sht. 15

ATTACHMENT C3

DIGITAL ALARM POINT D5316

NOMENCLATURE ADS D ISOLATER INPUT CARD OUT SETPOINT N/A

DESCRIPTION ADS Division 4 alarm indicators lost ORIGIN GE Panel 10C631

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR Drywell pressure, Reactor water level, AND ADS/Safety Valve positions.

CAUSE	CORRECTIVE ACTION
1. Digital isolator AT2's 2 Amp fuse F47, located in GE Panel 10C640, faulty.	1A. REQUEST the CRS to initiate corrective action.
2. Digital isolator AT1's power supply PS1D 10 Amp fuse, F41D, located in GE Panel 10C640 is faulty.	2A. Same as above.
3. Loss of power to digital isolator AT1's inverter PS1D.	3A. SEND an operator to120VAC Panel 1DJ481 to determine IF breaker 20 has tripped. IF so under the order of the Control Room Supervisor have the dispatched operator RESET breaker 20.
4. ADS Div. 4 digital isolator AT1, located in GE Panel 10C631, has at least one input logic card out of file.	4A. REQUEST the CRS to initiate corrective action.

REFERENCES: PN1-E21-1040-0383, Sht. 6A
PN1-B21-1060-0063, Sht. 11
E-6765-0, Sht. A
J-41-0, Sht. 15

ATTACHMENT C3

DIGITAL ALARM POINT D5755

NOMENCLATURE ADS B ISOLATER OUT CARD OUT SETPOINT N/A

DESCRIPTION ADS Division 2 alarm indicators lost ORIGIN GE Panel 10C628

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR drywell pressure, reactor water level
AND ADS/Safety Valve positions.

CAUSE	CORRECTIVE ACTION
1. ADS Div. 2 digital isolator AT2, located in GE Panel 10C628, has at least one output logic card out of file.	1A. REQUEST the CRS to initiate corrective action.

REFERENCES: PN1-B21-1060-0063, Sht. 6A
PN1-E21-1040-0383, Sht. 11
E-6765-0, Sht. A
J-41-0, Sht. 15

ATTACHMENT C3

DIGITAL ALARM POINT D5756

NOMENCLATURE ADS D ISOLATER OUT CARD OUT SETPOINT N/A

DESCRIPTION ADS Division 4 alarm indicators lost ORIGIN GE Panel 10C631

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR Drywell pressure, Reactor water level and ADS/Safety Valve positions.

CAUSE	CORRECTIVE ACTION
1. ADS Div. 4 digital isolator AT1, located in GE Panel 10C631, has at least one output logic card out of file.	1A. REQUEST the CRS to initiate corrective action.

REFERENCES: PN1-E21-1040-0383, Sht. 6A
PN1-B21-1060-0063, Sht. 11
E-6765-0, Sht. A
J-41-0, Sht. 15

ATTACHMENT C4

ADS CH B OUT OF SERVICE

Window Location C1-C4

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specifications 3.5.1.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5315	ADS CH B LOGIC OUT OF SERVICE	Alarm only
D5320	ADS CH B FAULTY TEST PROCEDURE	Alarm only

REFERENCES: E-6765-0, Sht. A
PN1-B21-1060-0063, Sht. 11
J-41-0, Sht. 12

ATTACHMENT C4

DIGITAL ALARM POINT D5315

NOMENCLATURE ADS CH B LOGIC OUT OF SERVICE SETPOINT N/A

DESCRIPTION Test/fault occurring within ADS Logic Train B ORIGIN GE Panel 10C628

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specification 3.5.1.

CAUSE	CORRECTIVE ACTION
1. ADS Logic Train B undergoing test at GE Panel 10C628.	1A. DETERMINE IF the testing of ADS Logic Train B is legitimate. IF not, REQUEST CRS to initiate corrective action.
2. The B LOGIC POWER MONITOR TEST pushbutton of the ADS, located on the 10C650 Panel, depressed.	2A. DETERMINE IF the reason for pressing the B LOGIC POWER MONITOR TEST PB is legitimate. IF not, ENSURE that the pushbutton is released.
3. The LOGIC B OUT OF SERVICE ALARMS ON pushbutton of the ADS, located on the 10C650 Panel, depressed.	3A. DETERMINE IF the reason for pressing the ON pushbutton is legitimate. IF not, PRESS the LOGIC B OUT OF SERVICE NORM Switch.
Continued next page	

REFERENCES: PN1-B21-1060-0063, Sht. 1; Sht. 4, Sht. 8; Sht. 11

ATTACHMENT C4

DIGITAL ALARM POINT D5315

CAUSE	CORRECTIVE ACTION
4. ADS Logic B Power Supply 10A fuse F1B OR F2B, located in GE Panel 10C628, faulty.	4A. REQUEST CRS to initiate corrective action.
5. ADS Valve F013A 125V DC Power Supply 10A fuse F3A OR F4A, located in GE Panel 10C628, faulty.	5A. Same as 4A above.
6. ADS Valve F013B 125V DC Power Supply 10A fuse F3B OR F4B, located in GE Panel 10C628, faulty.	6A. Same as 4A above.
7. ADS Valve F013C 125V DC Power Supply 10A fuse F3C OR F4C, located in GE Panel 10C628, faulty.	7A. Same as 4A above.
8. ADS Valve F013D 125V DC Power Supply 10A fuse F3D OR F4D, located in GE Panel 10C628, faulty.	8A. Same as 4A above.
9. ADS Valve F013E 125V DC Power Supply 10A fuse F3E OR F4E, located in GE Panel 10C628, faulty.	9A. Same as 4A above.
Continued next page	

REFERENCES: PN1-B21-1060-0063, Sht. 1, Sht. 8, Sht. 11
E-0009-1, Sht. 2

ATTACHMENT C4

DIGITAL ALARM POINT D5315

CAUSE	CORRECTIVE ACTION
10. Loss of power to GE Panel 10C628 due to Breaker 12 to of 125V DC Distribution Panel 1BD417 tripping	10A. SEND an operator to 125V DC Distribution Panel 1BD417 to determine IF breaker 12 has tripped. IF so, under the order of CRS have the dispatched operator reset breaker 12. 10B. IF Breaker 12 cannot be reset, REQUEST CRS to initiate corrective action.
11. Trip Unit E21-N655B, E11-N655B, E11-N656B, E21-N655F, E11-N656F, E11-N655F and/or B21-N695B, located in GE Panel 10C618 Panel in CAL OR has failed.	11A. INVESTIGATE why the trip unit(s) is in CAL. 11B. REQUEST CRS to initiate corrective action.
12. Trip Unit B21-N691B OR B21-N691F, located in GE Panel 10C618, removed from file Z4B.	12A. DETERMINE why the trip unit has been removed from its file.
13. The 10 Amp fuse, F15B, to Trip Unit Card Z4B, faulty.	13A. REQUEST CRS to initiate corrective action.
Continued next page	

REFERENCES: PN1-B21-1060-0063, Sht. 1; Sht. 4, Sht. 7; Sht. 9, Sht. 10; Sht. 11
PN1-E21-1040-0383, Sht. 6; Sht. 10
E-0009-1, Sht. 2

ATTACHMENT C4

DIGITAL ALARM POINT D5315

CAUSE	CORRECTIVE ACTION
	Note 14 & 15 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.
14. Fuse F9B(20 Amp) AC to DC Power Supply blown.	14A. REQUEST CRS to initiate corrective action. REPLACE Fuse.
15. Loss of power to Trip Unit Card Z4B due to breaker18 of 120VAC Distribution Panel 1BJ481 tripping.	15A. SEND an operator to 120VAC Distribution Panel 1BJ481 to determine IF Breaker 18 has tripped. IF so under the order of CRS, have the dispatched operator reset Breaker18.

ATTACHMENT C4

DIGITAL ALARM POINT D5320

NOMENCLATURE ADS CH B FAULTY TEST PROCEDURE SETPOINT N/A

DESCRIPTION ADS Logic Train B undergoing test ORIGIN GE Panel 10C628

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specification 3.5.1.

CAUSE	CORRECTIVE ACTION
1. More than one ADS Logic Train B test plug is being used disabling the CS/RHR Pump inputs to the ADS Logic Train B initiation circuitry.	1A. INVESTIGATE why more than one test plug is being used to test ADS Logic Train B within GE Panel 10C628.

REFERENCES: PN1-B21-1060-0063, Sht. 4; Sht. 5, Sht. 7

ATTACHMENT C5

ADS CH D OUT OF SERVICE

Window Location C1-C5

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specifications 3.5.1.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5317	ADS CH D LOGIC OUT OF SERVICE	Alarm only
D5325	ADS CH D FAULTY TEST PROCEDURE	Alarm only

REFERENCES: E-6765-0, Sht. A
PN1-B21-1060-0063, Sht. 11
J-41-0, Sht. 12

ATTACHMENT C5

DIGITAL ALARM POINT D5317

NOMENCLATURE ADS CH D LOGIC OUT OF SERVICE SETPOINT N/A

DESCRIPTION Test/fault occurring within ADS Logic Train D ORIGIN GE Panel 10C631

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specification 3.5.1.

CAUSE	CORRECTIVE ACTION
1. ADS Logic Train D undergoing test at GE Panel 10C631.	1A. DETERMINE IF the testing of ADS Logic Train D is legitimate. IF not, REQUEST CRS to initiate corrective action.
2. The D LOGIC POWER MONITOR TEST pushbutton of the ADS, located on the 10C650 Panel, depressed.	2A. DETERMINE IF the reason for pressing the D LOGIC POWER MONITOR TEST pushbutton is legitimate. IF not, ENSURE that the pushbutton is released.
3. The LOGIC D OUT OF SERVICE ALARMS ON pushbutton of the ADS, located on the 10C650 Panel, depressed.	3A. DETERMINE IF the reason for pressing the ON pushbutton is legitimate. IF not, TURN OFF the LOGIC D OUT OF SERVICE ALARMS Switch.
Continued next page	

REFERENCES: PN1-B21-1060-0063, Sht. 1; Sht. 4, Sht. 8; Sht. 11

ATTACHMENT C5

DIGITAL ALARM POINT D5317

CAUSE	CORRECTIVE ACTION
4. ADS Logic D Power Supply 10A fuse F1D or F2D, located in GE Panel 10C631, faulty.	4A. REQUEST CRS to initiate corrective action.
5. ADS Valve F013A 125V DC power supply 10A fuse F7A or F8A, located in GE Panel 10C631, faulty.	5A. Same as 4A above.
6. ADS Valve F013B 125V DC Power Supply 10A fuse F7B or F8B, located in GE Panel 10C631, faulty.	6A. Same as 4A above.
7. ADS Valve F013C 125V DC Power Supply 10A fuse F7C or F8C, located in GE Panel 10C631, faulty.	7A. Same as 4A above.
8. ADS Valve F013D 125V DC Power Supply 10A fuse F7D or F8D, located in GE Panel 10C631, faulty.	8A. Same as 4A above.
9. ADS Valve F013E 125V DC Power Supply 10A fuse F7E or F8E, located in GE Panel 10C631, faulty.	9A. Same as 4A above.
10. Loss of power to GE Panel 10c631 due to breaker 12 of 125V DC Distribution Panel 1DD417 tripping.	10A. SEND an operator to125V DC Distribution Panel 1DD417 to determine IF breaker 12has tripped. IF so, under the order of CRS have the dispatched operator reset breaker 12. 10B. IF breaker 12 cannot be reset, REQUEST CRS to initiate corrective action.
Continued next page	

REFERENCES: PN1-B21-1060-0063, Sht. 1
E-0009-1, Sht. 1; Sht. 2

ATTACHMENT C5

DIGITAL ALARM POINT D5317

CAUSE	CORRECTIVE ACTION
11. Trip Unit E21-N655D, E11-N655D, E11-N656D, E21-N655H, E11-N656H, E11-N655H and/or B21-N695D located in GE Panel 10C640 Panel in CAL OR has failed.	11A. INVESTIGATE why trip unit(s) in CAL. 11B. REQUEST CRS to initiate corrective action.
12. Trip Unit B21-N691D or B21-N961H, located in GE Panel 10C640, removed from file Z4D.	12A. DETERMINE why the trip unit has been removed from its file.
13. The 10 Amp fuse, F15D, to trip unit card Z4D, faulty.	13A. REQUEST CRS to initiate corrective action. **Note 14 & 15** 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.
14. Fuse F9D(20 Amp) AC to DC Power Supply blown.	14A. REQUEST CRS to initiate corrective action Replace Fuse..
15. Loss of power to Trip Unit Card Z4B due to breaker 20 of 120VAC Distribution Panel 1DJ481 tripping.	15A. SEND an operator to120VAC Distribution Panel 1DJ481 to determine IF breaker 20 has tripped. IF so under the order of CRS, have the dispatched operator reset Breaker 20.

REFERENCES: PN1-B21-1060-0063, Sht. 6
PN1-E21-1040-0383, Sht. 6A

ATTACHMENT C5

DIGITAL ALARM POINT D5325

NOMENCLATURE ADS CH D FAULTY TEST PROCEDURE SETPOINT N/A

DESCRIPTION ADS Logic Train D undergoing test. ORIGIN GE Panel 10C631

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the Emergency Core Cooling System Actuation Instrumentation requirements of Technical Specifications 3.3.3.
2. ENSURE compliance with the ECCS-Operation requirements of Technical Specification 3.5.1.

CAUSE	CORRECTIVE ACTION
1. More than one ADS Logic Train D test plug is being used disabling the CS/RHR pump inputs to the ADS Logic Train D initiation circuitry.	1A. INVESTIGATE why more than one test plug is being used to test ADS Logic Train D within GE Panel 10C631.

REFERENCES: PN1-B21-1060-0063, Sht. 4; Sht. 5; Sht. 7

ATTACHMENT D1

SLC INJ VLV STEM NOT FULLY OPEN

Window Location C1-D1

OPERATOR ACTION:

1. Attempt to OPEN SLC Isolation Valve(s) HV-F006A and/or HV-F006B fully from the 10C651 Panel.
2. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2220	SLCS VLV A NOT 100% OPEN	Alarm only
D2222	SLCS VLV B NOT 100% OPEN	Alarm only

REFERENCES: J-48-0, Sht. 5
E-6768-0, Sht. 2

ATTACHMENT D1

DIGITAL ALARM POINT D2220

NOMENCLATURE SLCS VLV A NOT 100% OPEN SETPOINT < 100% open

DESCRIPTION SLC Injection Valve HV-F006A not fully open. ORIGIN ZS-F006A-12

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ATTEMPT to open SLC Isolation Valve BH-HV-F006A fully from the 10C651 Panel.
2. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5 and 3.6.3.

CAUSE	CORRECTIVE ACTION
1. SLCS Isolation Valve BH-HV-F006A not fully opened initially.	1A. OPEN SLC Isolation Valve BH-HV-F006A 100% from the 10C651 Panel.
2. SLC Isolation Valve breaker tripped while attempting to open valve.	2A. SEND an operator to 480V MCC 10B212 to determine IF breaker 52-212202 has tripped. IF so, RESET breaker52-212202.
	2B. IF breaker 52-212202 cannot be reset NOTIFY the Control Room Supervisor to initiate corrective action.
	2C. IF directed by SM/CRS, DISPATCH an operator to manually OPEN SLC Isolation Valve BH-HV-F006A.
3. SLCS Isolation Valve jammed	3A. SEND an operator to manually attempt to unjam SLC Isolation Valve BH-HV-F006A. IF SLC Isolation Valve BH-HV-F006A cannot be unjammed NOTIFY the Control Room Supervisor to initiate corrective action.

REFERENCES: J-48-0, Sht. 5
E-0021-1, Sht. 1; Sht. 6

ATTACHMENT D1

DIGITAL ALARM POINT D2222

NOMENCLATURE SLCS VLV B NOT 100% OPEN SETPOINT < 100% open

DESCRIPTION SLC Injection Valve HV-F006B not fully open. ORIGIN ZS-F006B-12

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. Attempt to **OPEN** SLC Isolation Valve BH-HV-F006B fully from the 10C651 Panel.
2. **ENSURE** compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5 and 3.6.3.

CAUSE	CORRECTIVE ACTION
1. SLCS Isolation Valve BH-HV-F006B not fully opened initially.	1A. **OPEN** SLC Isolation Valve BH-HV-F006B 100% from the 10C651 Panel.
2. SLC Isolation Valve breaker tripped while attempting to open valve.	2A. **SEND** an operator to 480V MCC 10B242 to determine IF Breaker 52-242203 has tripped. IF so, reset Breaker 52-242203. 2B. IF Breaker 52-242203 cannot be reset **NOTIFY** the Control Room Supervisor to initiate corrective action. 2C. IF directed by SM/CRS, **DISPATCH** an operator to manually OPEN SLC Isolation Valve BH-HV-F006B.
3. SLCS Isolation Valve jammed.	3A. **SEND** an operator to manually attempt to unjam SLC Isolation Valve BH-HV-F006B. IF SLC Isolation Valve BH-HV-F006B cannot be unjammed **NOTIFY** the Control Room Supervisor to initiate corrective action.

REFERENCES: J-48-0, Sht. 5
E-0021-1, Sht. 1; Sht. 6

ATTACHMENT D2

RWCU F/D PANEL 10C076

Window Location C1-D2

OPERATOR ACTION:

1. SEND a Chemistry Technician to RWCU F/D Local Panel 10C076 to investigate cause of alarm.
2. ENSURE compliance with the Chemistry requirements of UFSAR section 5.2.3.2.2.2.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5456	RWCU F/D POWDEX SYSTEM	Various

REFERENCES: J-45-0, Sht. 1
J-0650-1, Sht. 9

ATTACHMENT D2

DIGITAL ALARM POINT D5456

NOMENCLATURE RWCU F/D POWDEX SYSTEM SETPOINT Various

DESCRIPTION Alarm condition existing at RWCU F/D Local Panel 10C076 ORIGIN Various

AUTOMATIC ACTION:

Various

OPERATOR ACTION:

1. SEND a Chemistry Technician to RWCU F/D Local Panel 10C076 to investigate cause of alarm.
2. ENSURE compliance with the Chemistry requirements of UFSAR section 5.2.3.2.2.2.

CAUSE	CORRECTIVE ACTION
1. RWCU F/D Powdex System Local Panel 10C076 in an alarm state.	1A. Same as OPERATOR ACTION above.

REFERENCES: J-45-0, Sht. 1

ATTACHMENT D3

REACTOR RECIRC PUMPS TRIP

Window Location C1-D3

OPERATOR ACTION:

1. REFER to the HC.OP-AB.RPV-0003(Q); Recirculation System AND HC.OP-AB.RPV-0002(Q); Reactor Power Oscillations.
2. ENSURE compliance with of Technical Specifications 3.4.1.
3. NOTIFY CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2155	RECIRC PUMP TRIP SCRAM A	Reactor Recirc Pumps AP201 and BP201 trip.
D2156	RECIRC PUMP TRIP SCRAM B	Reactor Recirc Pumps AP201 and BP201 trip.

REFERENCES: PN1-C71-1020-0006, Sht. 19
E-6794-0, Sht. A

ATTACHMENT D3

DIGITAL ALARM POINT D2155

NOMENCLATURE	RECIRC PUMP TRIP SCRAM A	SETPOINT	Various
DESCRIPTION	EOC-RPT Breakers AN205 and BN205 tripped	ORIGIN	GE Panel 10C609

AUTOMATIC ACTION:

Reactor Recirc Pumps AP201 and BP201 trip.

OPERATOR ACTION:

1. REFER to the HC.OP-AB.RPV-0003(Q); Recirculation System AND HC.OP-AB.RPV-0002(Q); Reactor Power Oscillations.
2. ENSURE compliance with Technical Specification 3.4.1.

CAUSE	CORRECTIVE ACTION
1. Turbine Control Valves CV-1 AND CV-2 fast closure coincident WITH Turbine Stop Valves MSV-1 AND MSV-3 less than 90% open AND Reactor power greater than 30% (as indicated by Turbine first stage pressure > 135.7 psig).	1A. REFER to HC.OP-AB.RPV-0003(Q); Recirculation Pump Malfunction and HC.OP-AB.RPV-0002(Q). 1B. REQUEST the CRS initiate corrective action.

REFERENCES: PN1-C71-1020-0006, Sht. 8; Sht. 9; Sht. 10; Sht. 15; Sht. 20
E-6794-0, Sht. A

ATTACHMENT D3

DIGITAL ALARM POINT D2156

NOMENCLATURE	RECIRC PUMP TRIP SCRAM B	SETPOINT	Various
DESCRIPTION	EOC-RPT breakers CN205 and DN205 tripped.	ORIGIN	GE Panel 10C611

AUTOMATIC ACTION:

Reactor Recirc Pumps AP201 and BP201 trip.

OPERATOR ACTION:

1. REFER to the HC.OP-AB.RPV-0003(Q); Recirculation System AND HC.OP-AB.RPV-0002(Q); Reactor Power Oscillations.
2. ENSURE compliance with Technical Specification 3.4.1.

CAUSE	CORRECTIVE ACTION
1. Turbine Control Valves CV-3 AND CV-4 fast closure coincident with Turbine Stop Valves MSV-2 AND MSV-4 less than 90% open AND Reactor power greater than 30% (as indicated by Turbine first stage pressure > 135.7 psig).	1A. REFER to HC.OP-AB.RPV-0003(Q); Recirculation Pump Malfunction and HC.OP-AB.RPV-0002(Q). 1B. REQUEST the CRS initiate corrective action.

REFERENCES: PN1-C71-1020-0006, Sht. 8; Sht . 9; Sht. 10; Sht. 15; Sht. 20
E-6794-0, Sht. A

ATTACHMENT D4

REACTOR RECIRC A TROUBLE	Window Location C1-D4

OPERATOR ACTION:

1. IF Reactor Recirculation Pump trips,
   PERFORM actions IAW HC.OP-AB.RPV-0003(Q).
2. NOTIFY CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2668	RECIRC PMP A SEAL/PRG SPLY VLV	Alarm only
D5342	RECIRC PUMP A CIRCUIT BREAKERS	1. Rx Recirc. Pump AP201 Trip. 2. Alarm only for D5342 CAUSE 2 AND 3.
D2917	RECIRC MG DRIVE MOTOR A BRKR	Rx Recirc. Pump AP201 trips from breaker opening OR failure to close.
D2865	RECIRC MG A LUBOIL PUMP 1 OPF	1. Rx Recirc Lube Oil Pump A1P120 trips due to reasons listed in D2865 CAUSE 1. 2. Rx Recirc Lube Oil Pump A2P120 auto- starts upon a header pressure of 30 psig or less IF operating as the reserve pump.

REFERENCES: J-43-0, Sht. 2; Sht. 3; Sht. 9; Sht. 10
E-3043-0
CD-410D GE SIL 361

ATTACHMENT D4

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2867	RECIRC MG A LUBOIL PUMP2 OPF	1. Rx Recirc Lube Oil Pump A2P120 trips due to reasons listed in D2867 CAUSE 1. 2. Rx Recirc Lube Oil Pump A1P120 auto- starts upon a header pressure of 30 psig or less IF operating as the reserve pump.
D5340	RECIRC MG A DRIVE/LUBOIL PRESS	Emergency Lube Oil Pump AP113 auto-starts

REFERENCES: J-43-0, Sht. 2; Sht. 3; Sht. 9; Sht. 10
E-3043-0
CD-410D GE SIL 361

ATTACHMENT D4

DIGITAL ALARM POINT D2668

NOMENCLATURE RECIRC PMP A SEAL/PRG SPLY VLV SETPOINT N/A

DESCRIPTION MOV HV-3800A no longer operative ORIGIN MCC 10B242

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. IF valve position indication is still available, CHECK thermal overload for cause of trouble.
2. ENSURE compliance with the Containment Isolation Valves requirements of Technical Specifications 3.6.3.

CAUSE	CORRECTIVE ACTION
1. Motor operated valve inoperative due to: a. breaker 52-242013 tripped. b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty	1A. SEND an operator to Breaker 52-242013 1B. IF breaker or thermal overloads are tripped, NOTIFY CRS prior to resetting 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-43-1, Sht. 1
J-43-0, Sht. 6; Sht. 9; Sht. 10
J-00-0, Sht. 3

ATTACHMENT D4

DIGITAL ALARM POINT D5342

NOMENCLATURE RECIRC PUMP A CIRCUIT BREAKERS SETPOINT Various

DESCRIPTION Ckt brkr AN205/CN205 tripped/ malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. Reactor Recirc. EOC-RPT breaker AN205 and/or CN205 trip due to reasons listed in CAUSE 1 below.
2. Alarm only for CAUSE 2 or 3 below.

OPERATOR ACTION:

1. REFER to HC.OP-AB.RPV-0003(Q) AND HC.OP-AB.RPV-0002(Q) in the event a Reactor Recirc Pump trip occurs.
2. ENSURE compliance with the Recirculation System Recirculation Loops and Recirculation Pumps requirements of Technical Specifications 3.3.4.1 3.4.1.1, 3.3.4.2 and 3.4.1.3.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc. Pump AP201 EOC-RPT breaker(s) (1)52-AN205/(1)52-CN205 tripped due to:	
1. RRCS Recirc Pump trip input signal (-38" OR 1071 psig).	1A.1 REFER to HC.OP-EO.ZZ-0101(Q).
2. RPS Recirc. Pump trip input signal (Turbine Control Valves CV-1, CV-2 fast closure) AND Turbine Stop Valves MSV-1, MSV-3 < 90% open WHEN RX power is > 30%.	1A2. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q)
Continued next page	

REFERENCES: J-43-0,. Sht. 9; E-3043-0; J-00A-0, Sht. 3; E-6016-0, Sht. 1; Sht. 2; E-0009-1, Sht. 1; Sht. 2

ATTACHMENT D4

DIGITAL ALARM POINT D5342

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc Pump AP201 EOC-RPT breaker(s) (1)52-AN205/ (1)52-CN205 tripped due to: (Continued)	
3. BREAKER TEST SWITCH DEV. CST (1)52-AN205/(1)52-CN205 in TRIP OR PULL TO LOCK position.	1A3. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q). 1B3. SEND an operator to tripped breaker(s) to investigate the reason for the breaker switch position. 1C3. ENSURE compliance with Tech Spec 3.4.1.1 and 3.4.1.3.
4. Overcurrent relay (1)50A (senses high current in electrical conductors between breakers(1)52-AN205, (1)52-CN205 AND Pump AP201) tripped.	1A4. REFER to HC.OP-AB.RPV-0003 (Q) and HC.OP-AB.RPV-0002(Q). 1B4. ENSURE compliance with Tech Spec 3.4.1.1 and 3.4.1.3. 1C4. REQUEST the CRS to initiate corrective action.
2. Loss of trip coil continuity to the EOC-RPT circuit breaker malfunction detection circuit due to:	
1. For breaker (1)52-AN205, breaker 23 of Class 1E 125VDC Dist. Panel 1AD417 tripped.	2A1. REQUEST the CRS to initiate corrective action. 2B1. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2 and 3.3.4.1 ATWS RPT Bkr Trip.

Continued next page

ATTACHMENT D4

DIGITAL ALARM POINT D5342

CAUSE	CORRECTIVE ACTION
2. Loss of trip coil continuity to the EOC-RPT circuit breaker malfunction detection circuit due to: (Continued)	
2. For breaker (1)52-AN205, breaker 72-41023 of Class 1E 125VDC Switchgear 10D410 tripped.	2A2. REQUEST the CRS to initiate corrective action. 2B2. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2. and 3.3.4.1 ATWS RPT Bkr Trip.
3. For breaker (1)52-CN205, breaker 23 of Class 1E125VDC Dist Panel 1CD417 tripped.	2A3. REQUEST the CRS to initiate corrective action. 2B3. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2. and 3.3.4.1 ATWS RPT Bkr Trip.
4. For breaker (1)52-CN205, breaker 72-42023 of Class 1E 125VDC Switchgear 10D420 tripped.	2A4. REQUEST the CRS to initiate corrective action. 2B4. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2. and 3.3.4.1 ATWS RPT Bkr Trip.
5. BREAKER TEST SWITCH DEV. CST (1)52-AN205 or(1)52-CN205 placed in PULL TO LOCK position.	2A5. SEND an operator to the breaker(s) to investigate the reason for the switch Position.
6. Breaker (1)52-AN205 or (1)52-CN205125VDC control power circuit15A fuse(s) faulty.	2A6. REQUEST the CRS to initiate corrective action.

Continued next page

ATTACHMENT D4

DIGITAL ALARM POINT D5342

CAUSE	CORRECTIVE ACTION
2. Loss of trip coil continuity to the EOC-RPT circuit breaker malfunction detection circuit due to: (Continued)	
7. Breaker (1)52-AN205 OR (1)52-CN205 not racked in to the "CONN" position.	2A7. REQUEST the CRS to initiate corrective action.
8. EOC-RPT breaker(1)52-AN205 OR (1)52-CN205 open.	2A8. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q).
3. Spring charging device not charged due to:	
1. Loss of breaker(1)52-AN205 OR (1)52-CN205 125VDC control power.	3A1. REFER to CORRECTIVE ACTION 2A1 and 2B1, 2A2 and 2B2, 2A3 and 2B3 or 2A4 and 2B4
2. Faulty breaker(1)52-AN205 OR (1)52-CN205 SPRING CHARGING DEVICE 15A fuse(s).	3A2. REQUEST the CRS to initiate corrective action.

ATTACHMENT D4

DIGITAL ALARM POINT D2917

NOMENCLATURE RECIRC MG DRIVE MOTOR A BRKR SETPOINT Various

DESCRIPTION Recirc Drive Motor 1AG120 fault ORIGIN Multiple

AUTOMATIC ACTION:

Reactor Recirc Pump AP201 trips for numerous reasons and/or alarm only.

OPERATOR ACTION:

1. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q) in the event of a Recirc. Pump trip occurs.
2. ENSURE compliance with the Recirculation System Recirculation Loops and Recirculation Pumps requirements of Technical Specifications 3.4.1.3, 3.4.1.1, 3.3.4.1 and 3.3.4.2.

CAUSE	CORRECTIVE ACTION
1. MG Set Drive Motor 1AG120 manually tripped from Control Room.	1A. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q) in the event of a Recirc Pump trip occurs. 1B. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
2. Loss of trip coil continuity to the drive motor control power circuit due to:	
1. Loss of "normal" 125VDC control power to 7.2KV switchgear 10A110.	2A1. SWAP to alternate control power source. 7.2KV SWITCHGEAR No. 10A110 AUX. COMP.
2. Breaker (2)52-11002 not in the CONN position.	2A2. REQUEST the CRS to initiate corrective action.
Continued next page	

REFERENCES: J-43-0, Sht. 9, E-3043-0, PN1-B31-1030-0024 Sht. 8; J-00-0, Sht. 2; Sht 3; E-6001-0, Sht. 1

ATTACHMENT D4

DIGITAL ALARM POINT D2917

CAUSE	CORRECTIVE ACTION
2. Loss of trip coil continuity to the drive motor control power circuit due to: (Continued)	
3. Breaker (2)52-11002/CST in TRIP OR PULL TO LOCK position.	2A3. Same as 2A2 above.
4. Faulty 15A fuse in Drive Motor 1AG120 control power circuit.	2A4. Same as 2A2 above.
3. Closing spring not charged due to:	
1. Spring charging device POWER CONTROL SWITCH in the OFF position.	3A1. ENSURE the switch is in the ON position.
2. Faulty fuse in the 15A FUSE BREAKER CHG. MOTOR circuitry.	3A2. REQUEST the CRS to initiate corrective action.
3. Faulty spring charging device.	3A3. Same as 3A2 above.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Recirc Drive Motor 1AG120.	4A. Same as 3A2 above. **Note** Loss of the control power dummy input causes a false alarm.

Continued next page

ATTACHMENT D4

DIGITAL ALARM POINT D2917

CAUSE	CORRECTIVE ACTION
5. Recirc Drive Motor 1AG120 7.2Kv breaker (2)52-11002 tripped due to:	
1. Suction Valve HV-F023A less than 90% open.	5A1. INVESTIGATE position of valve. 5B1. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
2. Discharge Valve HV-F031A less than 90% open.	5A2. Same as 5A1 above. 5B2. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
3. Lube oil pressure less than 30 psig for greater than 6 seconds.	5A3. REFER to digital alarm point D2865 Attachment D4. 5B3. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
4. Lube oil temp greater than 210°F.	5A4. ENSURE TACS is properly aligned to the Lube Oil Cooler. 5B4. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.

Continued

ATTACHMENT D4

DIGITAL ALARM POINT D2917

CAUSE	CORRECTIVE ACTION
5. Phase Overcurrent Relay (2)50/51 Phase A(B)(C) tripped.	5A5. **REQUEST** the CRS to initiate corrective action. 5B5. **ENSURE** compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
6. Bus Undervoltage Relay (2)27AX1(2)-110 tripped.	5A6. Same as 5A6 above.
7. Bus Differential Lockout Relay (2)86D-11002 tripped.	5A7. Same as 5A6 above.
8. Reverse-Phase/Phase Balance Relay (2)46 tripped.	5A8. Same as 5A6 above.
9. Bus Overcurrent Lockout Relay (2)86OC1-110 tripped.	5A9. **REQUEST** the CRS to initiate corrective action. 5B9. **ENSURE** compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
10. Feeder ground overcurrent relay (2)50G tripped.	5A10. Same as 5A9 above.

ATTACHMENT D4

DIGITAL ALARM POINT D2865

NOMENCLATURE RECIRC MG A LUBOIL PUMP 1 OPF SETPOINT Various

DESCRIPTION RX Recirc. Lube Oil Pump A1P120 Malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. RX Recirc Lube Oil Pump A1P120 trips due to reasons listed in CAUSE 1 below.
2. RX Recirc Lube Oil Pump A2P120 auto-starts upon a header pressure of 30 psig or less IF operating as the reserve pump.
3. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specifications 3.4.1.1 and 3.4.1.3, respectively, IF the Recirc. MG Set is tripped.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION.
2. IF reserve lube oil pump does not auto-start, TRIP RX Recirc Pump AP201 AND ENSURE Emergency Lube Oil Pump AP113 auto starts.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc Lube Oil Pump A1P120 tripped due to:	
1. Undervoltage Relay 27 tripped.	1A1. REQUEST the CRS to initiate corrective action.
2. Overcurrent Relay 47/M tripped.	1A2. Same as above.
3. Breaker 52-13031 not racked to the CONN position.	1A3. SEND operator to investigate position of breaker.
4. Breaker 52-13031 Control Switch turned to TRIP AND breaker racked to TEST position.	1A4. SEND operator to investigate position of breaker.
Continued next page	

REFERENCES: J-43-0, Sht. 2; Sht. 9; J-00-0, Sht. 2; Sht. 3; E-6406-0; PN1-B31-1030-0024 Sht.12

ATTACHMENT D4

DIGITAL ALARM POINT D2865

CAUSE	CORRECTIVE ACTION
2. MG Set Drive Motor AG120 running with Lube Oil Pump A2P120 stopped AND lube oil pressure of 30 psig or less.	2A. ENSURE Lube Oil Pump A2P120 is in AUTO.
3. Loss of control power to breaker 52-13031 due to:	
1. Faulty 15A or 6A fuse in the breaker's control power circuit.	3A1. REQUEST the CRS to initiate corrective action.
2. Loss of 125VDC control power to Unit Substation 10B130.	3A2. SWITCH to alternate source.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Lube Oil Pump A1P120.	4A. REQUEST the CRS to initiate corrective action. **NOTE** Loss of the control power dummy input causes a false alarm.
5. Loss of spring charged dummy input to the circuit breaker malfunction detection logic circuit of Lube Oil Pump A1P120.	5A. REQUEST the CRS to initiate corrective action. **NOTE** Loss of the spring charged dummy input causes a false alarm.

REFERENCES: J-43-0, Sht. 2; Sht. 9
J-00-0, Sht. 2; Sht. 3
E-6406-0
PN1-B31-1030-0024 Sht.12

ATTACHMENT D4

DIGITAL ALARM POINT D2867

NOMENCLATURE RECIRC MG A LUB OIL PUMP 2 OPF SETPOINT Various

DESCRIPTION RX Recirc. Lube Oil Pump A2P120 malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. RX Recirc Lube Oil Pump A2P120 trips due to reasons listed in CAUSE 1 below.
2. RX Recirc Lube Oil Pump A1P120 auto-starts upon a header pressure of 30 psig or less IF operating as the reserve pump.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION.
2. IF reserve lube oil pump does not auto-start,
   TRIP RX Recirc. Pump AP201
   AND ENSURE Emergency Lube Oil Pump AP113 auto starts.
3. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specifications 3.4.1.1 and 3.4.1.3, respectively,
   IF the Recirc. MG Set is tripped.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc Lube Oil Pump A2P120 tripped due to:	
1. Undervoltage Relay 27 tripped.	1A1. REQUEST the CRS to initiate corrective action.
2. Overcurrent Relay 47/M tripped.	1A2. Same as above.
3. Breaker 52-14031 not racked to the CONN position.	1A3. SEND operator to investigate position of breaker.
4. Breaker 52-14031 control switch turned to TRIP AND breaker racked to TEST position.	1A4. SEND operator to investigate position of breaker.
Continued next page	

REFERENCES: J-43-0, Sht. 2; Sht. 9
E-6406-0
J-00-0, Sht. 2; Sht. 3
PN1-B31-1030-0024 Sht.12

ATTACHMENT D4

DIGITAL ALARM POINT D2867

CAUSE	CORRECTIVE ACTION
2. MG Set Drive Motor AG120 running with Lube Oil Pump A1P120 stopped AND lube oil pressure of 30 psig or less.	2A. ENSURE Lube Oil Pump A1P120 is in AUTO.
3. Loss of control power to Breaker 52-14031 due to:	
1. Faulty 15A OR 6A fuse in the breaker's control power circuit.	3A1. REQUEST the CRS to initiate corrective action.
2. Loss of 125VDC Control Power to Unit Substation 10B140.	3A2. SWITCH to Alternate Source.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Lube Oil Pump A2P120.	4A. NOTIFY the CRS to initiate corrective action. **NOTE** Loss of the control power dummy input causes a false alarm.
5. Loss of spring charged dummy input to the circuit breaker malfunction detection logic circuit of Lube Oil Pump A2P120.	5A. REQUEST the CRS to initiate corrective action. **NOTE** Loss of the spring charged dummy input causes a false alarm.

REFERENCES: J-43-0, Sht. 2; Sht. 9
E-6406-0
J-00-0, Sht. 2; Sht. 3
PN1-B31-1030-0024 Sht.12

ATTACHMENT D4

DIGITAL ALARM POINT D5340

NOMENCLATURE RECIRC MG A DRIVE/LUB OIL PRESS SETPOINT < 10 psig . for > 6 sec

DESCRIPTION RX MG Set A lube oil pressure low ORIGIN PSL-8302A

AUTOMATIC ACTION:

Emergency Lube Oil Pump AP113 auto-starts.

OPERATOR ACTION:

1. At the discretion of the SM/CRS,
   VERIFY low Recirc MG Set A lube oil header pressure [locally]
   OR TRIP the Recirc MG Set
   IF still operating.
2. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specification 3.4.1.1 and 3.4.1.3, respectively,
   IF the Recirc. MG Set is tripped.

CAUSE	CORRECTIVE ACTION
1. RX Recirc Lube Oil Pump(s) A1P120 AND A2P120 stopped.	1A. START Pump A1P120 OR A2P120.
2. Improper process piping alignment.	2A. ENSURE the process piping is properly aligned.
3. Lube Oil Header Pressure Control Valve PCV-8280A malfunction.	3A. MANUALLY POSITION valve to obtain the required lube oil header pressure. 3B. NOTIFY the CRS to initiate corrective action.
Continued next page	

REFERENCES: M-43-1, Sht. 2
J-43-0, Sht. 2; Sht. 3;Sht. 9
M-14-1, Sht. 2
PN1-B31-1030-0024 Sht.12

ATTACHMENT D4

DIGITAL ALARM POINT D5340

CAUSE	CORRECTIVE ACTION
4. Process piping line rupture	4A. REQUEST the CRS to initiate corrective action.
5. Lube Oil Filter LF-173A is clogged.	5A. SWITCH to alternate filter. IF header pressure is still low, REQUEST the CRS to initiate corrective action.
6. Lube Oil Pumps Safety Valve 1-BB-PSV-8279A is open.	6A. REQUEST the CRS to initiate corrective action.
7. MG Set lube oil leakage into TACS due to Hydraulic Oil Cooler 1AE126 tube rupture.	7A. ISOLATE TACS to oil cooler by closing TACS Valves 1-EG-V355 and 1-EG-V356. 7B. REQUEST the CRS to initiate corrective action.

REFERENCES: M-43-1, Sht. 2
J-43-0, Sht. 2; Sht. 3;Sht. 9
M-14-1, Sht. 2
PNI-B31-1030-0024 Sht.12

ATTCHMENT D5

REACTOR RECIRC B TROUBLE

Window Location C1-D5

OPERATOR ACTION:

1. IF Reactor Recirculation Pump trips,
   RESPOND IAW HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q).
2. NOTIFY CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2886	RECIRC PMP B SEAL/PRG SPLY VLV	Alarm only
D5343	RECIRC PUMP B CIRCUIT BREAKERS	1. Reactor Recirc Pump BP201 trip. 2. Alarm only for D5343 CAUSE 2 AND 3.
D2918	RECIRC MG DRIVR MOTOR B BRKR	Reactor Recirc Pump BP201 trips from breaker opening OR failure to close.
D2866	RECIRC MG B LUBOIL PUMP 1 OPF	1. Rx Recirc Lube Oil Pump B1P120 trips due to reasons listed in D2866 CAUSE 1. 2. Rx Recirc Lube Oil Pump B2P120 auto- starts upon a header pressure of 30 psig or less IF operating as the reserve pump.

REFERENCES: J-43-0, Sht. 2; Sht. 3; Sht. 9; Sht. 10
E-3043-0
CD-410D GE SIL 361

ATTACHMENT D5

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2868	RECIRC MG B LUBOIL PUMP 2 OPF	1. Rx Recirc Lube Oil Pump B2P120 trips due to reasons listed in D2868 CAUSE 1. 2. Rx Recirc Lube Oil Pump B1P120 auto- starts upon a header pressure of 30 psig or less IF operating as the reserve pump.
D5341	RECIRC MG B DRIVE/LUBOIL PRESS	Emergency Lube Oil Pump BP113 auto-starts

REFERENCES: J-43-0, Sht. 2; Sht. 3; Sht. 9; Sht. 10
E-3043-0
CD-410D GE SIL 361

ATTACHMENT D5

DIGITAL ALARM POINT D2886

NOMENCLATURE RECIRC PMP B SEAL/PRG SPLY VLV SETPOINT N/A

DESCRIPTION MOV HV-3800B no longer operable ORIGIN MCC 10B242

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. IF valve position indication is still available, CHECK thermal overloads for cause of trouble.
2. ENSURE compliance with the Containment Isolation Valves requirements of Technical Specifications 3.6.3.

CAUSE	CORRECTIVE ACTION
1. Motor operated valve inoperative due to: a. breaker 52-242162 tripped b. thermal overloads tripped c. control power fuse faulty d. control power transformer faulty	1A. SEND an operator to Breaker 52-242162 1B. IF breaker OR thermal overloads are tripped, NOTIFY CRS prior to resetting. 1C. IF OVLD/PWR FAIL can not be cleared, REQUEST CRS to initiate corrective action.

REFERENCES: M-43-1, Sht. 1,
J-43-0, Sht. 6; Sht. 9; Sht. 10,
J-00-0, Sht. 3,

ATTACHMENT D5

DIGITAL ALARM POINT D5343

NOMENCLATURE RECIRC PUMP B CIRCUIT BREAKERS SETPOINT Various

DESCRIPTION Ckt brkr BN205/DN205 tripped/ malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. Reactor Recirc. EOC-RPT breaker BN205 and/or DN205 trip due to reasons listed in CAUSE 1 below.
2. Alarm only for CAUSE 2 or 3 below.

OPERATOR ACTION:

1. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q) in the event of a Reactor Recirc. Pump trip occurs.
2. ENSURE compliance with the Recirculation System Recirculation Loops and Recirculation Pumps requirements of Technical Specifications 3.4.1.1, 3.4.1.3, 3.3.4.1 and 3.4.4.2.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc. Pump BP201 EOC-RPT breaker(s) (1)52-BN205/ (1)52-DN205 tripped due to:	
1. RRCS Recirc Pump trip input signal (-38" or 1071 psig).	1A1. REFER to HC.OP-EO.ZZ-0101(Q).
2. RPS Recirc Pump trip input signal (Turbine Control Valves CV-3, CV-4 fast closure) AND Turbine Stop Valves MSV-2, MSV-4 < 90% open WHEN RX power is > 30%.	1A2. REFER to HC.OP-AB.RPV-0003(Q). and HC.OP-AB.RPV-0002(Q).
Continued	

REFERENCES: J-43-0, Sht. 9; J-00A-0, Sht. 3; E-3043-0; E-6016-0, Sht. 1; Sht. 2; E-0009-1, Sht. 1; Sht. 2

ATTACHMENT D5
DIGITAL ALARM POINT D5343

CAUSE	CORRECTIVE ACTION
3. BREAKER TEST SWITCH DEV. CST (1)52-BN205/(1)52-DN205 in TRIP OR PULL TO LOCK position.	1A3. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q). 1B3. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3. 1C3. SEND an operator to tripped breaker(s) to investigate the reason for the breaker switch position.
4. Overcurrent Relay (1)50A(senses high current in electrical conductors between breakers(1)52-BN205, (1)52-DN205 AND Pump BP201) tripped.	1A4. REFER to HC.OP-AB.RPV-0003(Q). and HC.OP-AB.RPV-0002(Q). 1B4. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3. 1C4. REQUEST the CRS to initiate corrective action.
2. Loss of trip coil continuity to the EOC-RPT circuit breaker malfunction detection circuit due to:	
1. For breaker (1)52-BN205, breaker 23 of Class 1E125VDC Dist. Panel 1AD417 tripped.	2A1. REQUEST the CRS to initiate corrective action. 2B1. ENSURE compliance with END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM Instrumentation requirements 3.3.4.2 and 3.3.4.1 ATWS RPT Bkr Trip.
2. For breaker (1)52-BN205, breaker 72-41023 of Class 1E 125VDC Switchgear 10D410 tripped.	2A2. REQUEST the CRS to initiate corrective action. 2B2. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2. and 3.3.4.1 ATWS RPT Bkr Trip.

Continued next page

ATTACHMENT D5

DIGITAL ALARM POINT D5343

CAUSE	CORRECTIVE ACTION
2. Loss of trip coil continuity to the EOC-RPT circuit breaker malfunction detection circuit due to: (Continued)	
3. For breaker (1)52-DN205, breaker 23of Class 1E125VDC Dist. Panel 1CD417 tripped.	2A3. REQUEST the CRS to initiate corrective action. 2B3. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2. and 3.3.4.1 ATWS RPT Bkr Trip.
4. For breaker (1)52-DN205, breaker 72-42023 of Class 1E 125VDC Switchgear 10D420 tripped.	2A4. REQUEST the CRS to initiate corrective action. 2B4. ENSURE compliance with END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements 3.3.4.2 and 3.3.4.1 ATWS RPT Bkr Trip.
5. BREAKER TEST SWITCH DEV. CST (1)52-BN205 OR (1)52-DN205 placed in PULL TO LOCK position.	2A5. SEND an operator to the breaker(s) to investigate the reason for the switch position.
6. Breaker (1)52-BN205 OR (1)52-DN205 125VDC control power circuit 15A fuse(s) faulty.	2A6. REQUEST the CRS to initiate corrective action.
7. Breaker (1)52-BN205 OR (1)52-CN205 not racked in to the "CONN" position.	2A7. REQUEST the CRS to initiate corrective action.
8. EOC-RPT breaker(1)52-BN205 OR (1)52-DN205 open.	2A8. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q).

Continued next page

ATTACHMENT D5

DIGITAL ALARM POINT D5343

CAUSE	CORRECTIVE ACTION
3. Spring charging device not charged due to:	
1. Loss of breaker(1)52-BN205 OR (1)52-DN205 125VDC control power.	3A1. REFER to CORRECTIVE ACTION 2A1 and 2B1, 2A2 and 2B2, 2A3 and 2B3 or 2A4 and 2B4
2. Faulty breaker(1)52-AN205 OR (1)52-CN205 SPRING CHARGING DEVICE 15A fuse(s).	3A2. REQUEST the CRS to initiate corrective action.

ATTACHMENT D5

DIGITAL ALARM POINT D2918

NOMENCLATURE RECIRC MG DRIVE MOTOR B BRKR SETPOINT Various

DESCRIPTION Recirc. Drive Motor 1BG120 fault ORIGIN Multiple

AUTOMATIC ACTION:

Reactor Recirc Pump BP201 trip for numerous reasons and/or alarm only.

OPERATOR ACTION:

1. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q) in the event of a Recirc. Pump trip.
2. ENSURE compliance with the Recirculation System Recirculation Loops and Recirculation Pumps requirements of Technical Specifications 3.4.1.3, 3.4.1.1, 3.3.4.1 and 3.3.4.2.

CAUSE	CORRECTIVE ACTION
1. MG Set Drive Motor 1BG120 manually tripped from control room.	1A. REFER to HC.OP-AB.RPV-0003(Q) and HC.OP-AB.RPV-0002(Q) 1B. ENSURE compliance with Tech Specs 3.4.1. and 3.4.1.3.
2. Loss of trip coil continuity to the drive motor control power circuit due to:	
1. Loss of "normal" 125VDC Control Power to 7.2Kv Switchgear 10A120.	2A1. SWITCH to alternate control power source at 7.2KV SWITCHGEAR No. 10A120 AUX. COMP.
2. Breaker (2)52-12002 not in the CONN position.	2A2. REQUEST the CRS to initiate corrective action.
3. Breaker (2)52-12002/CST in TRIP OR PULL TO LOCK position.	2A3. Same as 2A2 above.
Continued next page	

REFERENCES: J-43-0, Sht. 9; J-00-0, Sht. 2; Sht. 3
E-3042-0; E-6001-0, Sht. 1
PN1-B31-1030-0024 Sht.9

ATTACHMENT D5

DIGITAL ALARM POINT D2918

CAUSE	CORRECTIVE ACTION
4. Faulty 15A fuse in Drive Motor 1BG120 control power circuit.	2A4. REQUEST the CRS to initiate corrective action.
3. Closing spring not charged due to:	
1. Spring Charging Device POWER CONTROL SWITCH in the OFF position.	3A1. ENSURE the switch is in the ON position.
2. Faulty fuse in the 15A FUSE BREAKER CHG. MOTOR circuitry.	3A2. REQUEST the CRS to initiate corrective action.
3. Faulty spring charging device.	3A3. Same as 3A2 above.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Recirc Drive Motor 1BG120.	4A1. REQUEST the CRS to initiate corrective action. **Note** Loss of the control power dummy input causes a false alarm.
5. Recirc Drive Motor 1BG1207.2KV breaker (2)52-12002 tripped due to:	
1. Suction Valve HV-F023B less than 90% open.	5A1. INVESTIGATE position of valve. 5B2. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
2. Discharge Valve HV-F031B less than 90% open.	5A2. INVESTIGATE position of valve. 5B2. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.

Continued next page

ATTACHMENT D5

DIGITAL ALARM POINT D2918

CAUSE	CORRECTIVE ACTION
5. Recirc Drive Motor 1BG120 7.2Kv Breaker (2)52-12002 tripped due to: (Continued)	
3. Lube oil pressure less than 30 psig for greater than 6 seconds.	5A3. REFER to digital alarm point D2866 Attachment D5.
4. Lube oil temp. greater than 210°F.	5A4. ENSURE TACS is properly aligned to the lube oil cooler. 5B4. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
5. Phase Overcurrent Relay(2)50/51 Phase A(B)(C) tripped.	5A5. REQUEST the CRS to initiate corrective action. 5B5 ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
6. Bus Undervoltage Relay (2)27AX1(2)-120 tripped.	5A6. REQUEST the CRS to initiate corrective action. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
7. Bus Differential Lockout Relay (2)86D-12002 tripped.	5A7. REQUEST the CRS to initiate corrective action. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
Continued next page	

ATTACHMENT D5

DIGITAL ALARM POINT D2918

CAUSE	CORRECTIVE ACTION
8. Reverse-Phase/Phase Balance Relay (2)46 tripped.	5A8. REQUEST the CRS to initiate corrective action. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
9. Bus Overcurrent Lockout Relay (2)86OC1-120 tripped.	5A9. REQUEST the CRS to initiate corrective action. ENSURE compliance with Tech Specs 3.4.1.1 and 3.4.1.3.
10. Feeder Ground Overcurrent Relay (2)50G tripped.	5A10. Same as 5A9 above.

ATTACHMENT D5

DIGITAL ALARM POINT D2866

NOMENCLATURE RECIRC MG B LUB OIL PUMP 1 OPF SETPOINT Various

DESCRIPTION RX Recirc. Lube Oil Pump B1P120 malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. RX Recirc Lube Oil Pump B1P120 trips due to reasons listed in CAUSE 1 below.
2. RX Recirc Lube Oil Pump B2P120 auto-starts upon a header pressure of 30 psig or less IF operating as the reserve pump.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION.
2. IF reserve lube oil pump does not auto-start,
   TRIP RX Recirc Pump BP201
   AND ENSURE Emergency Lube Oil Pump BP113 auto starts.
3. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specifications 3.4.1.1 and 3.4.1.3, respectively,
   IF the Recirc MG set is tripped.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc. Lube Oil Pump B1P120 tripped due to:	
1. Undervoltage Relay 27 tripped.	1A1. REQUEST the CRS to initiate corrective action.
2. Overcurrent Relay 47/M tripped.	1A2. Same as 1A1 above.
3. Breaker 52-13021 not racked to the CONN position.	1A3. SEND operator to investigate position of breaker.
4. Breaker 52-13021 control switch turned to TRIP AND breaker racked to TEST position.	1A4. SEND an operator to investigate position of breaker.
Continued next page	

REFERENCES: J-43-0, Sht. 2; Sht. 9, J-00-0, Sht. 2; Sht. 3
E-6406-0, PN1-B31-1030-0024 Sht.12

ATTACHMENT D5

DIGITAL ALARM POINT D2866

CAUSE	CORRECTIVE ACTION
2. MG Set Drive Motor BG120 running WITH Lube Oil Pump B2P120 stopped AND lube oil pressure of 30 psig or less.	2A. ENSURE Lube Oil Pump B2P120 is in AUTO.
3. Loss of control power to breaker 52-13031 due to:	
1. Faulty 15A OR 6A fuse in the breaker's control power circuit.	3A1. REQUEST the CRS to initiate corrective action.
2. Loss of 125VDC control power to Unit Substation 10B130.	3A2 SWITCH to alternate source.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Lube Oil Pump B1P120.	4A. REQUEST the CRS to initiate corrective action. NOTE Loss of the control power dummy input causes a false alarm.
5. Loss of spring charged dummy input to the circuit breaker malfunction detection logic circuit of Lube Oil Pump B1P120.	5A. Same as above. NOTE Loss of the spring charged dummy input causes a false alarm.

REFERENCES: J-43-0, Sht. 2; Sht. 9
J-00-0, Sht. 2; Sht. 3
E-6406-0
PN1-B31-1030-0024 Sht.12

ATTACHMENT D5

DIGITAL ALARM POINT D2868

NOMENCLATURE RECIRC MG B LUB OIL PUMP 2 OPF SETPOINT Various

DESCRIPTION RX Recirc. Lube Oil Pump B2P120 malfunction ORIGIN Multiple

AUTOMATIC ACTION:

1. RX Recirc Lube Oil Pump B2P120 trips due to reasons listed in CAUSE 1 below.
2. RX Recirc Lube Oil Pump B1P120 auto-starts upon a header pressure of 30 psig or less IF operating as the reserve pump.

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION.
2. IF reserve lube oil pump does not auto-start,
   TRIP RX Recirc Pump BP201
   AND ENSURE Emergency Lube Oil Pump BP113 auto starts.
3. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specifications 3.4.1.1 and 3.4.1.3, respectively,
   IF the Recirc. MG set is tripped.

CAUSE	CORRECTIVE ACTION
1. Reactor Recirc Lube Oil Pump B2P120 tripped due to:	
1. Undervoltage Relay 27 tripped.	1A1. REQUEST the CRS to initiate corrective action.
2. Overcurrent Relay 47/M	1A2. REQUEST the CRS to initiate corrective action.
3. Breaker 52-14021 not racked to the CONN position.	1A3. SEND operator to investigate position of breaker.
4. Breaker 52-14021 control switch turned to TRIP AND breaker racked to TEST position.	1A4. SEND operator to investigate position of breaker.
Continued	

REFERENCES: J-43-0, Sht. 2; Sht. 9, J-00-0, Sht. 2; Sht. 3
E-6406-0, PN1-B31-1030-0024 Sht.12

ATTACHMENT D5

DIGITAL ALARM POINT D2868

CAUSE	CORRECTIVE ACTION
2. MG Set Drive Motor BG120 running WITH Lube Oil Pump B1P120 stopped AND lube oil pressure of 30 psig or less.	2A. ENSURE Lube Oil Pump B1P120 is in AUTO.
3. Loss of control power to Breaker 52-14021 due to:	
1. Faulty 15A OR 6A fuse in the breaker's control power circuit.	3A1. REQUEST the CRS to initiate corrective action.
2. Loss of 125VDC control power to Unit Substation 10B140.	3A2. SWITCH to alternate source.
4. Loss of control power dummy input to the motor malfunction detection logic circuit of Lube Oil Pump B2P120.	4A. REQUEST the CRS to initiate corrective action. **NOTE** Loss of the control power dummy input causes a false alarm.
5. Loss of spring charged dummy input to the circuit breaker malfunction detection logic circuit of Lube Oil Pump B2P120.	5A. REQUEST the CRS to initiate corrective action. **NOTE** Loss of the spring charged dummy input causes a false alarm.

REFERENCES: J-43-0, Sht. 2; Sht. 9, J-00-0, Sht. 2; Sht. 3
E-6406-0, PN1-B31-1030-0024 Sht.12

ATTACHMENT D5

DIGITAL ALARM POINT D5341

NOMENCLATURE RECIRC MG B DRIVE/LUB OIL PRESS SETPOINT < 10 psig for > 6 sec.

DESCRIPTION RX MG Set B lube oil pressure low ORIGIN PSL-8302B

AUTOMATIC ACTION:

Emergency Lube Oil Pump BP113 auto-starts.

OPERATOR ACTION:

1. At the discretion of the SM/CRS,
   VERIFY low Recirc MG Set B lube oil header pressure [locally]
   OR TRIP the Recirc MG Set
   IF still operating.
2. ENSURE compliance with the Recirculation System Recirculation Loops and the Recirculation Pumps requirements of Technical Specifications 3.4.1.1 and 3.4.1.3, respectively,
   IF the Recirc. MG Set is tripped.

CAUSE	CORRECTIVE ACTION
1. RX Recirc. Lube Oil Pump(s) B1P120 AND B2P120 stopped.	1A. START Pump B1P120 OR B2P120.
2. Improper process piping alignment.	2A. ENSURE the process piping is properly aligned.
3. Lube Oil Header Pressure Control Valve PCV-8280B malfunction.	3A. MANUALLY POSITION valve to obtain the required lube oil header pressure. 3B. REQUEST the CRS to initiate corrective action.
Continued next page	

REFERENCES: M-43-1, Sht. 2
J-43-0, Sht. 2; Sht. 3; Sht. 9
M-14-1, Sht. 2
PN1-B31-1030-0024 Sht.12

ATTACHMENT D5

DIGITAL ALARM POINT D5341

CAUSE	CORRECTIVE ACTION
4. Process piping line rupture.	4A. REQUEST the CRS to initiate corrective action.
5. Lube Oil Filter LF-173B is clogged.	5A. SWITCH to alternate filter. IF header pressure is still low, REQUEST the CRS to initiate corrective action.
6. Lube Oil Pumps Safety Valve 1-BB-PSV-8279B is open.	6A. NOTIFY the CRS to initiate corrective action.
7. MG Set lube oil leakage into TACS due to Hydraulic Oil Cooler 1BE126 tube rupture.	7A. ISOLATE TACS to Oil Cooler by closing TACS Valves 1-EG-V357 and 1-EG-V358. 7B. REQUEST the CRS to initiate corrective action.

REFERENCES: M-43-1, Sht. 2
J-43-0, Sht. 2; Sht. 3; Sht. 9
M-14-1, Sht. 2
PN1-B31-1030-0024 Sht.12

ATTACHMENT E1

SLC TANK TROUBLE

Window Location C1-E1

OPERATOR ACTION:

1. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.
2. MAINTAIN the SLCS Control Tank solution temperature above the sodium pentaborate saturation temperature of 70°F.
3. MAINTAIN the SLCS Control Tank level within the Technical Specification limits.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2379	SLCS LINE A TEMP	Alarm only
D2380	SLCS LINE B TEMP	Alarm only
D2381	SLCS TANK TEMP	Alarm only
D2382	SLCS TANK LEVEL	Alarm only for a high/low SLCS Control Tank level.

REFERENCES: J-48-0, Sht: 5
E-6768-0, Sht. 2
PR 960221263

ATTACHMENT E1

DIGITAL ALARM POINT D2379

NOMENCLATURE SLCS LINE A TEMP SETPOINT 110°F / 75°F

DESCRIPTION High/low SLCS Pump A suction piping temperature ORIGIN TSLH-4106A

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLCS Heat Tracing Thermostat setting too low.	1A. REQUEST CRS initiate corrective action.
2. SLCS Heat Tracing Breaker tripped.	2A. SEND an operator to 480V MCC 10B263 to determine IF breaker 52-263063 has tripped. IF so RESET breaker 52-263063. 2B. IF breaker 52-263063 cannot be reset, NOTIFY the Control Room Supervisor to initiate corrective action.
3. SLCS Heat Tracing Thermostat setting too high.	3A. REQUEST CRS initiate corrective action.

REFERENCES:
J-48-0, Sht. 5
SC-BH-0501
M-48-1
E-0032-1
DCP 4HE-0049

ATTACHMENT E1

DIGITAL ALARM POINT D2380

NOMENCLATURE SLCS LINE B TEMP SETPOINT 110°F / 75°F

DESCRIPTION High/low SLCS Pump B suction piping temperature ORIGIN TSHL-4106B

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.

CAUSE	CORRECTIVE ACTION
1. SLCS Heat Tracing Thermostat setting too low.	1A. REQUEST CRS initiate corrective action.
2. SLCS Heat Tracing Breaker tripped.	2A. SEND an operator to 480V MCC 10B263 to determine IF breaker has tripped, IF so, RESET breaker 52-263063. 2B. IF breaker 52-263063 cannot be reset, NOTIFY the Control Room Supervisor to initiate corrective action.
3. SLCS Heat Tracing Thermostat setting too high.	3A. REQUEST CRS initiate corrective action.

REFERENCES:
J-48-0, Sht. 5
N1-C41-17, Sht. 8; Sht. 10
M-48-1
E-0032-1
DCP 4HE-0049

ATTACHMENT E1

DIGITAL ALARM POINT D2381

NOMENCLATURE SLCS TANK TEMP SETPOINT 110°F / 70°F

DESCRIPTION High/low solution temperature in SLCS Control Tank 0T204 ORIGIN TSHL-N003

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. MAINTAIN the SLCS Control Tank solution temperature above the sodium pentaborate saturation temperature of 70 °F.
2. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.
3. IF SLCS Control Tank temperature is high due to heaters in manual, RETURN SLCS Heater Switches to Standby Alignment.

CAUSE	CORRECTIVE ACTION
1. SLCS Control Tank Operating Heater 10E276 Temperature Indicating Controller TIC-R002 setting too low.	1A. REQUEST CRS initiate corrective action.
2. SLCS Control Tank Operating Heater 10E276 Temperature Indicating Controller TIC-R002 setting too high.	2A. REQUEST CRS initiate corrective action. 2B. MAINTAIN SLC Tank temperature below 147°F. [NOTF 20010183]
3. SLCS Control Tank operating heater 10E276 breaker tripped.	3A. SEND an operator to 480V MCC 10B252 to determine IF breaker52-252072 has tripped. IF so, RESET Breaker 52-252072.

REFERENCES: M-48-1, J-48-0, Sht. 5
E-0023-1, Sht. 1
PR 960221263

ATTACHMENT E1

DIGITAL ALARM POINT D2381

CAUSE	CORRECTIVE ACTION
3. SLCS Control Tank operating heater 10E276 breaker tripped (Continued).	3B. IF breaker 52-252072 cannot be reset, **ORDER** Control Room Supervisor, initiate the use of Mixing Heater10E277 in an attempt to maintain SLCS Control Tank solution temperature above its saturation temperature of 70 °F.
4. SLCS Control Tank Mixing Heater Switch is in the ON position (C41-S2B) in anticipation of Chemistry sampling.	4A. **PLACE** the Mixing Heater Switch is in the OFF position (C41-S2B). 4B. **ENSURE** the operating heater switch is in AUTO position (C41-S2A).

REFERENCES: M-48-1, J-48-0, Sht. 5
E-0023-1, Sht. 1
PR 960221263

ATTACHMENT E1

DIGITAL ALARM POINT D2382

NOMENCLATURE SLCS TANK LEVEL SETPOINT 4880 gal (HI)/ 4640 gal (LO)/

DESCRIPTION High or low in SLCS Control Tank 0T204 ORIGIN LSHL-N600

AUTOMATIC ACTION:

Alarm only for a high/low SLCS Control Tank level.

OPERATOR ACTION:

1. ENSURE compliance with the Standby Liquid Control System requirements of Technical Specifications 3.1.5.
2. ACKNOWLEDGE/VERIFY AUTOMATIC ACTION.
3. TERMINATE makeup to SLCS Control Tank 0T204 upon a high level alarm.
4. SEND operators to provide makeup to SLCS Control Tank 0T204 IAW HC.OP-SO.BH-0001(Q) upon a low level alarm.

CAUSE	CORRECTIVE ACTION
1. Excessive chemical makeup to SLCS Control Tank 0T204.	1A. TERMINATE chemical makeup to SLCS Control Tank 0T204.
2. Excessive makeup to SLCS Control Tank via Demin Water System	2A. ENSURE that SLC TK 0T204 COND SUP ISLN VLV 1-BH-V012 AND SLC HOSE CONN ISLN VLV 1-AN-V089 are CLOSED.
Continued next page	

REFERENCES: M-48-1
J-48-0, Sht. 5
1-SC-BH-0001

ATTACHMENT E1

DIGITAL ALARM POINT D2382

CAUSE	CORRECTIVE ACTION
3. Normal chemical useage.	3A. PROVIDE makeup to SLCS Control Tank 0T204 in accordance with HC.OP-SO.BH-0001(Q).
4. EITHER LT-N010B & LT-N010F INST Line Valve 1-BH-V061 OR LT-N010A & LT-N010E INST Line Valve 1-BH-V059 are open.	4A. ENSURE SLCS Control Tank Drain Valves 1-BH-V061 and 1-BH-V059 are closed.
5. SLCS Pump Suction Line Drain Valves 1-BH-V017, 1-BH-V044, AND 1-BH-V018 are open.	5A. ENSURE SLCS Pump Suction Line Drain Valves 1-BH-V017, 1-BH-V044, AND 1-BH-V018 are closed.
6. LT-N010B & LT-N010F INST Line Valve 1-BH-V061 AND/OR LT-N010A & LT-N010E INST Line Valve 1-BH-V059 may be leaking through.	6A. ENSURE caps are secured SLCS Control Tank Drain Valves 1-BH-V061 and 1-BH-V059
7. SLCS Control Tank ruptured.	7A. NOTIFY the Control Room Supervisor to initiate corrective action.

REFERENCES: M-48-1
J-48-0, Sht. 5

ATTACHMENT E3

RX RECIRC PUMP RPS TRIP BYP

Window Location C1-E3

OPERATOR ACTION:

1. ENSURE compliance with the END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements of Technical Specifications 3.3.4.2.
2. ENSURE compliance with the MINIMUM CRITICAL POWER RATIO requirements of Technical Specification 3.2.3.
3. NOTIFY CRS of alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
RECIRC PUMP TRIP DISABLE SYSTEM A switch located on Panel H11-P609	RPS EOC-RPT LOGIC A MAN BYPASSED	Alarm only
RECIRC PUMP TRIP DISABLE SYSTEM B switch located on GE Panel H11-P611	RPS EOC-RPT LOGIC B MAN BYPASSED	Alarm only

REFERENCES: E-6794-0, Sht. 1
PN1-C71-1020-0006, Sht. 9,11,19

ATTACHMENT E3

NOMENCLATURE RPS EOC-RPT LOGIC A MAN BYPASSED SETPOINT N/A

DESCRIPTION RECIRC PUMP TRIP DISABLE SYSTEM A ORIGIN GE Panel H11-P609

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements of Technical Specifications 3.3.4.2.
2. ENSURE compliance with the MINIMUM CRITICAL POWER RATIO requirements of Technical Specification 3.2.3.

CAUSE	CORRECTIVE ACTION
1. The RECIRC PUMP TRIP DISABLE SYSTEM A Switch, located on GE Panel H11-P609, placed in the BYPASS position.	1A. DETERMINE the reason for placing the switch in the BYPASS position. 1B. REQUEST permission from SM/CRS prior to changing the position of the RECIRC TRIP DISABLE SYSTEM A Switch. 1C. REQUEST CRS initiate corrective action.

REFERENCES: E-6794-0, Sht. 1

ATTACHMENT E3

NOMENCLATURE RPS EOC-RPT LOGIC B MAN BYPASSED SETPOINT N/A

DESCRIPTION RECIRC PUMP TRIP DISABLE SYSTEM B ORIGIN GE Panel H11-P611

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. ENSURE compliance with the END-OF-CYCLE Recirculation Pump Trip System Instrumentation requirements of Technical Specifications 3.3.4.2
2. ENSURE compliance with the MINIMUM CRITICAL POWER RATIO requirements of Technical Specification 3.2.3.

CAUSE	CORRECTIVE ACTION
1. The RECIRC PUMP TRIP DISABLE SYSTEM B Switch, located on GE Panel H11-P611, placed in the BYPASS position.	1A. DETERMINE the reason for placing the switch in the BYPASS position. 1B. REQUEST permission from SM/CRS prior to changing the position of the RECIRC TRIP DISABLE SYSTEM A Switch. 1C. REQUEST CRS initiate corrective action.

REFERENCES: E-6994-0, Sht. 1

ATTACHMENT E4

REACTOR RECIRC PUMP VIB HI	Window Location C1-E4

OPERATOR ACTION:

1. ENSURE Reactor Recirculation Pump is NOT running at a critical speed.

1AP201		1BP201	
RPM	%SPEED	RPM	%SPEED
720-800	43-48	700-760	42-46
1040-1090	62-65	1150-1200	69-72
		1444-1484	90

2. REFER to digital alarm response for Digital Point D5351 and/or D5352 of this attachment for controlling Reactor Recirculation Pump speed.
3. VERIFY proper oil level on the respective Recirc Pump Motor, [CRIDS point D2922 and/or D2923].
4. ENSURE compliance with Technical Specifications 3.4.1.1 and 3.4.1.3.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D5351	RECIRC PUMP AP201 VIBRATION	Alarm only
D5352	RECIRC PUMP B VIBRATION	Alarm only

REFERENCES: J-43-0, Sht. 9
M-43-1, Sht. 2
CD-191F
CD-921E

ATTACHMENT E4

DIGITAL ALARM POINT D5351

NOMENCLATURE RECIRC PP A VIBRATION

SETPOINT Radial Alert Limit = 11.0 mils
Radial Danger Limit = 21.0 mils
Axial Alert Limit = 7.0 mils
Axial Danger Limit = 11.0 mils
Radial Position = +/- 5.5 mils

DESCRIPTION High Vibration on Reactor Recirculation Pump AP201

ORIGIN VE-7910A1 (Radial)
VE-7910A4 (Axial)

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. MONITOR A Reactor Recirculation Pump radial and axial vibration, Analog Computer Points A2601 & A2602.
2. IF Alarm is due to Radial Position, THEN INITIATE a notification to report the alarm AND DIRECT I&C to RE-ZERO the alarm card at the smart monitor. [70036063]
3. REDUCE Reactor Recirculation Pump speed in an attempt to reduce vibration below the Alert Limit.
4. IF vibration can NOT be maintained below the Danger Limit, REMOVE the Reactor Recirculation Pump from service IAW HC.OP-SO.BB-0002(Q).
5. ENSURE compliance with Technical Specifications 3.4.1.1 and 3.4.1.3.
6. CONTACT Engineering to obtain AND assess vibration data.

CAUSE	CORRECTIVE ACTION
1. Damaged bearing caused by low lube oil level.	1A. REQUEST the CRS to initiate corrective action.
2. Reactor Recirculation Pump AP201 cavitating	2A. During Reactor startup, ENSURE Reactor water level, temperature, AND Recirculation Pump speed are within limits to provide pump NPSH requirements.

REFERENCES: J-43-0, Sht. 9
M-43-1, Sht. 2
CD-191F, CD-921E
70001425 - B Reactor Recirculation Pump Vibration
70036063 - A Recirc Pump Alarm

ATTACHMENT E4

DIGITAL ALARM POINT D5352

NOMENCLATURE RECIRC PP B VIBRATION

SETPOINT Radial Alert Limit = ~~12.0 mils~~ 11.5 mils 25A
Radial Danger Limit = 21.0 mils
Axial Alert Limit = 7.0 mils
Axial Danger Limit = 11.0 mils
Radial Position = +/- 5.5 mils

DESCRIPTION High Vibration on Reactor Recirculation Pump BP201

ORIGIN VE-7910B1 (Radial)
VE-7910B4 (Axial)

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. MONITOR B Reactor Recirculation Pump radial and axial vibration, Analog Computer Points A2603 & A2604.
2. IF Alarm is due to Radial Position, THEN INITIATE a notification to report the alarm AND DIRECT I&C to RE-ZERO the alarm card at the smart monitor. [70036063]
3. REDUCE Reactor Recirculation Pump speed in an attempt to reduce vibration below the Alert Limit.
4. IF vibration can NOT be maintained below the Danger Limit, REMOVE the Reactor Recirculation Pump from service IAW HC.OP-SO.BB-0002(Q).
5. ENSURE compliance with Technical Specifications 3.4.1.1 and 3.4.1.3.
6. CONTACT Engineering to obtain AND assess vibration data.

CAUSE	CORRECTIVE ACTION
1. Damaged bearing caused by low lube oil level.	1A. REQUEST the CRS to initiate corrective action.
2. Reactor Recirculation Pump BP201 cavitating.	2A. During reactor startup, ENSURE Reactor water level, temperature, AND Recirculation Pump speed are within limits to provide pump NPSH requirements.

REFERENCES:
J-43-0, Sht. 9
M-43-1, Sht. 2
CD-191F, CD-921E
70001425 - B Reactor Recirculation Pump Vibration
T-MOD 01-007 (60019637)
70036063 - A Recirc Pump Alarm

ATTACHMENT E5

SRV LO LO SET ARMED

Window Location C1-E5

OPERATOR ACTION:

1. VERIFY AUTOMATIC ACTION AND MONITOR Reactor pressure.
2. ENSURE compliance with Technical Specification 3.6.2.1, Suppression Chamber temperature requirements.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D4140	SRV LO-LO SET DIV 4 ARMED	SRV PSV-F013P Open
D4151	SRV LO-LO SET DIV 2 ARMED	SRV PSV-F013H Open

REFERENCES: J-41-0, Sht. 13
PN1-B21-1060-0063, Shts. 2,3,4,8,9,10,11

ATTACHMENT E5

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	CORRECTIVE ACTION
1. High Reactor pressure **NOTE** PSV-F013P Open at 1047 psig, Close at 935 psig.	1A. Same as above.

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

ATTACHMENT E5

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	CORRECTIVE ACTION
1. High Reactor pressure **NOTE** PSV-F013H Open at 1047 psig, Close at 905 psig. Subsequent opening 1017 psig.	1A. Same as above.

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

ATTACHMENT F1

SLC/RRCS INITIATION FAILURE

Window Location C1-F1

OPERATOR ACTION:

1. DETERMINE IF a valid RRCS initiation signal is present,
   IF signal is valid,
   VERIFY that both SLC Pumps are running.
2. IF a valid RRCS initiation signal is present
   AND a SLC Pump is not running:
   a. TURN the non-running SLC Pump KEY-LOCK Switch to ON.
   b. PRESS the START pushbutton for the failed pump.
3. REQUEST the CRS to initiate corrective action.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2600	SLC/RRCS A INITIATION FAILURE	Alarm only
D2601	SLC/RRCS B INITIATION FAILURE	Alarm only

REFERENCES: J-48-0, Sht. 5
E-6768-0, Sht. 2

ATTACHMENT F1

DIGITAL ALARM POINT D2600

NOMENCLATURE SLC/RRCS A INITIATION FAILURE SETPOINT Various

DESCRIPTION SLC Pump AP208 not running when a valid RRCS initiation signal is present ORIGIN Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE IF a valid RRCS initiation signal is present,
   IF signal is valid,
   ENSURE that SLC Pump AP208 is running.
2. IF a valid RRCS initiation signal is present
   AND SLC Pump AP208 is not running:
   a. TURN the SLC Pump AP208 KEY-LOCK Switch to ON.
   b. PRESS the AP208 START pushbutton.
3. REQUEST the CRS to initiate corrective action.

CAUSE	CORRECTIVE ACTION
1. Failure of AP208 to run within 30 seconds of receiving a valid RRCS initiation signal.	1A. REFER to OPERATOR ACTION above

REFERENCES: J-107-0, Sht. 2; Sht. 4
J-105-0, Sht. 2; Sht. 4
J-48-0, Sht. 2; Sht. 5

ATTACHMENT F1

DIGITAL ALARM POINT D2601

NOMENCLATURE SLC/RRCS B INITIATION FAILURE SETPOINT Various

DESCRIPTION SLC pump BP208 not running when a valid RRCS initiation signal is present ORIGIN Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. DETERMINE IF a valid RRCS initiation signal is present,
   IF signal is valid,
   ENSURE that SLC Pump BP208 is running.
2. IF a valid RRCS initiation signal is present
   AND SLC Pump BP208 is not running:
   a. TURN the SLC Pump BP208 KEY-LOCK Switch to ON.
   b. PRESS the BP208 START pushbutton.
3. REQUEST the CRS to initiate corrective action.

CAUSE	CORRECTIVE ACTION
1. Failure of BP208 to run within 30 seconds of receiving a valid RRCS initiation signal.	1A. REFER to OPERATOR ACTION above

REFERENCES: J-107-0, Sht. 2; Sht. 4
J-105-0, Sht. 2; Sht. 4
J-48-0, Sht. 2; Sht. 5

ATTACHMENT F2

PROCESS SAMPLE CNDCT HI	Window Location C1-F2

OPERATOR ACTION:

ENSURE compliance with Reactor Coolant System Chemistry requirements of UFSAR section 5.2.3.2.2.2.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2270	AUX BLR FEED PMP DISH COND	Alarm only
D2353	AUX BLR COM HD STEAM SODIUM	Alarm only
D2354	CLEAN UP FLTR DEMIN DISCH COND	Alarm only
D2356	CLEAN UP FLTR DEMIN INLET COND	Alarm only

REFERENCES: J-108-0, Sht. 6
M-23-0

ATTACHMENT F2

DIGITAL ALARM POINT D2270

NOMENCLATURE AUX BLR FEED PMP DISH COND SETPOINT 2.5 umho/cm

DESCRIPTION High conductivity in the Auxiliary Boiler System ORIGIN CITS-3492

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. TERMINATE chemical addition to the Auxiliary Boiler feedwater.
2. CHECK conductivity reading at AUXILIARY BOILER BLDG SAMPLE STATION 00C540

CAUSE	CORRECTIVE ACTION
1. High conductivity in the Auxiliary Boiler feedwater caused by chemical addition.	1A. TERMINATE chemical addition. 1B. NOTIFY SM/CRS AND REQUEST the Chemistry Department to sample the Auxiliary Boiler feedwater for conductivity.
2. Release of crud during the startup OR transient in the Auxiliary Boiler System.	2A. NOTIFY SM/CRS AND REQUEST the Chemistry Department to sample the Auxiliary Boiler feedwater for conductivity.

REFERENCES: J-108-0, Sht. 6
M-23-0

ATTACHMENT F2

DIGITAL ALARM POINT D2353

NOMENCLATURE AUX BLR COM HD STEAM SODIUM SETPOINT 556 ppb

DESCRIPTION High sodium in the Auxiliary Boiler System ORIGIN AITS-3431

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. TERMINATE chemical addition to the Auxiliary Boiler feedwater.
2. CHECK sodium reading at AUXILIARY BOILER BLDG SAMPLE STATION 00C540.

CAUSE	CORRECTIVE ACTION
1. High sodium in the Auxiliary Boiler feedwater caused by chemical addition.	1A. TERMINATE chemical addition. 1B. NOTIFY SM/CRS AND REQUEST the Chemistry Department to sample the Auxiliary Boiler feedwater for sodium.
2. Release of crud during the startup OR transient in the Auxiliary Boiler System.	2A. NOTIFY SM/CRS AND REQUEST the Chemistry Department to sample the Auxiliary Boiler feedwater for conductivity.

REFERENCES: J-108-0, Sht. 6
M-23-0

ATTACHMENT F2

DIGITAL ALARM POINT D2354

NOMENCLATURE CLEAN UP FLTR DEMIN DISCH COND SETPOINT 0.1 umho/cm

DESCRIPTION High conductivity at Clean Up Filter Demin A(B) discharge ORIGIN CSH-R603-1 CSH-R603-2

AUTOMATIC ACTION:

. Alarm only

OPERATOR ACTION:

1. CHECK the CLEANUP FILTER DEMINERALIZERS conductivity outlet recorder CR-R603-G33 for increasing conductivity.
2. ENSURE compliance with the Reactor Coolant System Chemistry requirements of UFSAR section 5.2.3.2.2.2.
3. DIRECT Chemistry to determine the cause AND corrective actions per HC.CH-TI.ZZ-0012(Q).

CAUSE	CORRECTIVE ACTION
1. Depleted demineralizer	1A. REGENERATE Demineralizer and/or PLACE other demineralizer in service.
2. High Reactor coolant conductivity	2A. NOTIFY SM/CRS AND REFER to HC.OP-AB.RPV-0007(Q).

REFERENCES: J-108-0, Sht. 6

ATTACHMENT F2

DIGITAL ALARM POINT D2356

NOMENCLATURE CLEAN UP FLTR DEMIN INLET COND SETPOINT 1.0 µmho/cm

DESCRIPTION High Clean Up System inlet conductivity ORIGIN CSH-R601-1

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

1. **CHECK** the CLEANUP FILTER DEMINERALIZERS conductivity outlet recorder CR-R603-G33 for increasing conductivity.
2. **ENSURE** compliance with the REACTOR COOLANT SYSTEM CHEMISTRY requirements of UFSAR section 5.2.3.2.2.2.
3. **DIRECT** Chemistry to determine the cause AND corrective actions per HC.CH-TI.ZZ-0012(Q).

CAUSE	CORRECTIVE ACTION
1. High Reactor coolant conductivity.	1A. **NOTIFY** SM/CRS AND **REFER** to HC.OP-AB.RPV-0007(Q).

REFERENCES: J-108-0, Sht. 6

ATTACHMENT F3

ADS DRYWELL PRESS BYPASS TIMER INIT

Window Location C1-F3

OPERATOR ACTION:

VERIFY that the ADS High Drywell Pressure Bypass Timer initiation setpoint (RPV Level 1 (≤ -129")) has been reached.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D4134	ADS CH B DW PR BYP TIMER INIT	ADS Logic B High Drywell Pressure Bypass Timer (5 minute) started
D4135	ADS CH D DW PR BYP TIMER INIT	ADS Logic D High Drywell Pressure Bypass Timer (5 minute) started

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

ATTACHMENT F3

DIGITAL ALARM POINT D4134

NOMENCLATURE ADS CH B DW PR BYP TIMER INIT SETPOINT Various

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

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 (≤ -129")) has been reached.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic B condition exist: RPV Level 1 (≤ -129")	1A. REFER to HC.OP-EO.ZZ-0101(Q).

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

ATTACHMENT F3

DIGITAL ALARM POINT D4135

NOMENCLATURE ADS CH D DW PR BYP TIMER INIT SETPOINT Various

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

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 (≤ -129")) has been reached.

CAUSE	CORRECTIVE ACTION
1. The following ADS Logic D condition exist: RPV Level 1 (≤ -129")	1A. REFER to HC.OP-EO.ZZ-0101(Q).

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

ATTACHMENT F4

COMPUTER PT RETURN TO NORMAL	Window Location C1-F4

OPERATOR ACTION:

MONITOR CRT's to determine which analog/digital point(s) are no longer in an alarm condition.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
Analog/digital point in "cleared" condition will change from red to yellow AND then be removed from CRT.	REFER to Note below **Note** Nomenclature associated with "cleared" analog/ digital point will change from red to yellow AND then be removed from CRT display screen.	Alarm only

REFERENCES: J-108-0, Sht. 12
E-6797-0, Sht. 3

ATTACHMENT F4

NOMENCLATURE	Analog/digital point no longer in an alarm condition	SETPOINT	Various
DESCRIPTION	CRT display in alarmed condition (red) turns yellow AND then clears	ORIGIN	Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR CRT's to determine analog/digital point(s) which are no longer in an alarm condition.

CAUSE	CORRECTIVE ACTION
1. Field process variable changed from an abnormal to a normal state.	1A. MONITOR system parameter affected by alarm condition to verify normal operation has been re-establised.

REFERENCES: J-108-0, Sht. 12
E-6797-0, Sht. 3

ATTACHMENT F5

COMPUTER PT IN ALARM

Window Location C1-F5

OPERATOR ACTION:

DETERMINE the analog or digital point in alarm
AND REFER to operating procedures and guidelines.

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D4833	TAKEOVER AT C631	Alarm only
A2995	RECIRC MOTOR A WINDING A TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
A2996	RECIRC MOTOR A WINDING B TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
A2997	RECIRC MOTOR A WINDING C TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
A3005	RECIRC MOTOR B WINDING A TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
A3006	RECIRC MOTOR B WINDING B TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
A3007	RECIRC MOTOR B WINDING C TEMP	Alarm Only: High Alarm 150 F Reflash at 199 F and 248 F
D2911	RECIRC MG A DRIVE OIL TEMP	Alarm Only: High Alarm 188 F
D2912	RECIRC MG B DRIVE OIL TEMP	Alarm Only: High Alarm 188 F

REFERENCES: J-108-0, Sht. 12
E-6797-0, Sht. 3
VTD PN1-B31-C001-0119

ATTACHMENT F5

NOMENCLATURE Computer point in alarm condition SETPOINT Various

DESCRIPTION CRT analog/digital point and nomenclature displayed in red ORIGIN Various

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

DETERMINE the analog or digital point in alarm AND REFER to operating procedures and guidelines.

CAUSE	CORRECTIVE ACTION
1. Field process variable in an abnormal state.	1A. DETERMINE system affected AND REFER to operating procedures and guidelines.

REFERENCES: J-108-0, Sht. 12
E-6797-0, Sht. 3

ATTACHMENT F5

ANALOG ALARM POINT A2995

NOMENCLATURE RECIRC MOTOR A WINDING A TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3826A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. VALIDATE against CRIDS points A2996 and A2997 for failed TE.
2. IF TE has failed
   THEN SUBMIT notification
   AND PROCESS per SH.OP-AP.ZZ-0030(Q).
3. ENSURE Chilled Water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. MONITOR DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. INITIATE corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. BEFORE temperature exceeds 248 F, ENTER Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

ANALOG ALARM POINT A2996

NOMENCLATURE RECIRC MOTOR A WINDING B TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3828A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. **VALIDATE** against CRIDS points A2995 and A2997 for failed TE.
2. IF TE has failed
   THEN **SUBMIT** notification
   AND **PROCESS** per SH.OP-AP.ZZ-0030(Q).
3. **ENSURE** Chilled Water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. **MONITOR** DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. **INITIATE** corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. **BEFORE** temperature exceeds 248 F, **ENTER** Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

ANALOG ALARM POINT A2997

NOMENCLATURE RECIRC MOTOR A WINDING C TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3830A

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. VALIDATE against CRIDS points A2995 and A2996 for failed TE.
2. IF TE has failed
   THEN SUBMIT notification
   AND PROCESS per SH.OP-AP.ZZ-0030(Q).
3. ENSURE Chilled Water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. MONITOR DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. INITIATE corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. BEFORE temperature exceeds 248 F, ENTER Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

ANALOG ALARM POINT A3005

NOMENCLATURE RECIRC MOTOR B WINDING A TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3826B

AUTOMATIC ACTION:

None

OPERATOR ACTION:

1. VALIDATE against CRIDS points A3006 and A3007 for failed TE.
2. IF TE has failed
   THEN SUBMIT notification
   AND PROCESS per SH.OP-AP.ZZ-0030(Q).
3. ENSURE Chilled Water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. MONITOR DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. INITIATE corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. BEFORE temperature exceeds 248 F, ENTER Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

ANALOG ALARM POINT A3006

NOMENCLATURE RECIRC MOTOR B WINDING B TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3828B

AUTOMATIC ACTION:

NONE

OPERATOR ACTION:

1. VALIDATE against CRIDS points A3005 and A3007 for failed TE.
2. IF TE has failed
   THEN SUBMIT notification
   AND PROCESS per SH.OP-AP.ZZ-0030(Q).
3. ENSURE Chilled Water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. MONITOR DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. INITIATE corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. BEFORE temperature exceeds 248 F, ENTER Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

ANALOG ALARM POINT A3007

NOMENCLATURE RECIRC MOTOR B WINDING C TEMP SETPOINT 150F

DESCRIPTION Reactor Recirc Motor winding temperature is high ORIGIN BB TE-3830B

AUTOMATIC ACTION:

NONE

OPERATOR ACTION:

1. **VALIDATE** against CRIDS points A3005 and A3007 for failed TE.
2. IF TE has failed
   THEN **SUBMIT** notification
   AND **PROCESS** per SH.OP-AP.ZZ-0030(Q).
3. **ENSURE** chilled water or RACS is being supplied to the DW per HC.OP-SO.GB-0001(Q) or HC.OP-SO.ED-0001(Q) as appropriate.
4. **MONITOR** DWFD and DWED sump flows, Chilled Water and RACS head tank levels for system leakage.
5. **INITIATE** corrective action listed below.

CAUSE	CORRECTIVE ACTION
1. Loss of Reactor Recirc Motor cooling. Motor Damage can occur if temperature exceeds 248F (120C). Ref: VTD PN1-B31-C00-0119.	1A. **BEFORE** temperature exceeds 248 F, **ENTER** Reactor Recirculation System Single Loop Operation per HC.OP-SO.BB-0002(Q) and HC.OP-IO.ZZ-0006(Q).

REFERENCES: M-43-1, Sht. 2
PN1-B31-C001-0119

ATTACHMENT F5

DIGITAL ALARM POINT D2911

NOMENCLATURE RECIRC MG A DRIVE OIL TEMP SETPOINT 188F

DESCRIPTION Oil temperature in 'A' Recirc MG Fluid Drive HI ORIGIN BBTS-8295A

AUTOMATIC ACTION:

NONE

NOTE

'A' Recirc Pump TRIPS at 210 F Lube Oil Temperature

OPERATOR ACTION:

DISPATCH Operator to investigate and control 'A' MG Set Lube Oil Temperature.

CAUSE	CORRECTIVE ACTION
1. Inadequate TACS cooling to 'A' Recirc MG Lube Oil Cooler	1A. **DIRECT** Operator to adjust TACS flow to 1A-E-126, MG Set A Hydraulic Oil Cooler to maintain lube oil temperature between 110 F and 130 F as indicated on TI-8290A, MG Set A Lube Oil Temp (Local)

REFERENCES: PN1-B31-1030-0024, Sht. 6, 8, 10
PN1-B31-S001-0120
M-43-1 sh.2

ATTACHMENT F5

DIGITAL ALARM POINT D2912

NOMENCLATURE RECIRC MG B DRIVE OIL TEMP SETPOINT 188F

DESCRIPTION Oil temperature in 'B' Recirc MG Fluid Drive HI ORIGIN BBTS-8295B

AUTOMATIC ACTION:

NONE

NOTE
'B' Recirc Pump TRIPS at 210 F Lube Oil Temperature

OPERATOR ACTION:

DISPATCH Operator to investigate and control 'B' MG Set Lube Oil Temperature

CAUSE	CORRECTIVE ACTION
1. Inadequate TACS cooling to 'B' Recirc MG Lube Oil Cooler	1A. **DIRECT** Operator to adjust TACS flow to 1B-E-126, MG Set B Hydraulic Oil Cooler to maintain lube oil temperature between 110 F and 130 F as indicated on TI-8290B, MG Set B Lube Oil Temp (Local)

REFERENCES: PN1-B31-1030-0024, Sht. 6, 8, 10
PN1-B31-S001-0120
M-43-1 sh.2

ATTACHMENT F5

DIGITAL ALARM POINT D2922

NOMENCLATURE RECIRC PMP MOTOR A OIL LVL SETPOINT Various

DESCRIPTION Oil Level in Recirc Motor Upper/Lower Bearing HI/LO ORIGIN LSH/LSL-3793A LSH/LSL-3795A

AUTOMATIC ACTION:

Computer Alarm Only

NOTE

This digital alarm point input to overhead annunciator C1-F5 is inhibited. Computer alarm only.

OPERATOR ACTION:

MONITOR Motor Bearing Temperatures

CAUSE	CORRECTIVE ACTION
1. High OR Low Oil Level in Upper and/or Lower Motor Bearing Reservoir	1A. NOTIFY SM/CRS 1B. REQUEST Shift I&C Tech Take voltage reading at Computer Cabinet10Z628, Box 6, TB 3, Terminals 19 & 20. Compare voltage reading to table on sheet 2 to determine cause of alarm.

REFERENCES: PN1-B31-1030-0024, Sht. 6
PN1-B31-C001-0119
DCP No. 4-HM-0601

ATTACHMENT F5

DIGITAL ALARM POINT D2922

VOLTAGE	INDICATED PROBLEM
Across Terminals 19 & 20 (Supply Voltage 128 VDC)	
34.22 ± 1.34 VDC (32.88 to 35.56)	Upper Bearing Low Level AND Lower Bearing Low Level
37.15 ± 1.45 VDC (35.70 to 38.60)	Upper Bearing High Level AND Lower Bearing Low Level
40.23 ± 1.57 VDC (38.66 to 41.80)	Lower Bearing Low Level
48.32 ± 1.89 VDC (46.43 to 50.21)	Upper Bearing Low Level AND Lower Bearing High Level
54.36 ± 2.12 VDC (52.24 to 56.48)	Upper Bearing High Level AND Lower Bearing High Level
61.22 ± 2.39 VDC (58.83 to 63.61)	Lower Bearing High Level
82.15 ± 3.21 VDC (78.94 to 85.36)	Upper Bearing Low Level
101.24 ± 3.95 VDC (97.29 to 105.19)	Upper Bearing High Level

REFERENCES: DCP No. 4-HM-0601

ATTACHMENT F5

DIGITAL ALARM POINT D2923

NOMENCLATURE RECIRC PMP MOTOR B OIL LVL SETPOINT Various

DESCRIPTION Oil Level in Recirc Motor Upper/Lower Bearing HI/LO ORIGIN LSH/LSL-3793B LSH/LSL-3795B

AUTOMATIC ACTION:

Computer Alarm Only

NOTE

This digital alarm point input to overhead annunciator C1-F5 is inhibited. Computer alarm only.

OPERATOR ACTION:

1. MONITOR Motor Bearing Temperatures

CAUSE	CORRECTIVE ACTION
1. High OR Low Oil Level in Upper and/or Lower Motor Bearing Reservoir.	1A. NOTIFY SM/CRS 1B. REQUEST Shift I&C Tech take voltage reading at Computer Cabinet10Z628, Box 6, TB 3, Terminals 20 & 21. COMPARE voltage reading to table on Sheet 2 to determine cause of alarm.

REFERENCES: DCP No. 4-HM-0601
PN1-B31-1030-0024 Sht. 6
PN1-B31-C001-0119

ATTACHMENT F5

DIGITAL ALARM POINT D2923

VOLTAGE	INDICATED PROBLEM
Across Terminals 20 & 21 (Supply Voltage 128 VDC)	
34.22 ± 1.34 VDC (32.88 to 35.56)	Upper Bearing Low Level AND Lower Bearing Low Level
37.15 ± 1.45 VDC (35.70 to 38.60)	Upper Bearing High Level AND Lower Bearing Low Level
40.23 ± 1.57 VDC (38.66 to 41.80)	Lower Bearing Low Level
48.32 ± 1.89 VDC (46.43 to 50.21)	Upper Bearing Low Level AND Lower Bearing High Level
54.36 ± 2.12 VDC (52.24 to 56.48)	Upper Bearing High Level AND Lower Bearing High Level
61.22 ± 2.39 VDC (58.83 to 63.61)	Lower Bearing High Level
82.15 ± 3.21 VDC (78.94 to 85.36)	Upper Bearing Low Level
101.24 ± 3.95 VDC (97.29 to 105.19)	Upper Bearing High Level

REFERENCES: DCP No. 4-HM-0601