

HOPE CREEK GENERATING STATION**HC.OP-AR.ZZ-0008(Q) - Rev. 38****OVERHEAD ANNUNCIATOR WINDOW BOX C1****USE CATEGORY: II**

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

REVISION SUMMARY

- CRTs have been replaced with LCDs in Attachment F4 and F5. This was evaluated as part of the CRIDS replacement (80095687) and is editorial. (60082603-1000)

IMPLEMENTATION REQUIREMENTSEffective Date 4/20/10

None

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
	Page 2	Page 3	Page 4	Page 9	Page 10
B- PUMP/VALVE O/PF	SLC	RWCU F/D INLET TEMP HI	ADS MANUAL INITIATION INITIATION SW ARMED	ADS CH B INITIATION PENDING	ADS CH D INITIATION PENDING
	Page 11	Page 12	Page 13	Page 14	Page 15
C- CONTINUITY	SLC SQUIB VLV LOSS OF	RWCU SYSTEM TROUBLE	ADS ISOLATOR CARD TRBL	ADS CH B OUT OF SERVICE	ADS CH D OUT OF SERVICE
	Page 16	Page 17	Page 19	Page 20	Page 21
D- STEM NOT FULLY OPEN	SLC INJ VLV	RWCU F/D PANEL 10C076	REACTOR RECIRC PUMPS TRIP	REACTOR RECIRC A TROUBLE	REACTOR RECIRC B TROUBLE
	Page 22	Page 23	Page 24	Page 25	Page 27
E-	SLC TANK TROUBLE		RX RECIRC PUMPS RPS TRIP BYP	REACTOR RECIRC PUMP VIB HI	SRV LO LO SET ARMED
	Page 29		Page 30	Page 33	Page 34
F-	SLC/RRCS INITIATION FAILURE	PROCESS SAMPLE CNDCT HI	ADS DRYWELL PRESS BYPASS TIMER INIT	COMPUTER PT RETURN TO NORMAL	COMPUTER PT IN ALARM
	Page 35	Page 36	Page 37	Page 38	Page 40

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 <u>I</u> F running.
D2384	SLCS TANK LOW LVL PMP B TRIP	SLC Pump BP208 trips <u>I</u> F running.

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

ATTACHMENT A2

RWCU DIFF FLOW HI
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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 NUMAC	RWCU HIGH DIFF FLOW CH A MONITOR10C609-Z1 (1SKXR-11497)	RWCU System isolation
D5870 NUMAC	RWCU HIGH DIFF FLOW CH D 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 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 reseated	ADS or SAFETY VLV not	Alarm only
OPEN SRV/ADS VALVES	ADS or SAFETY VLV leaking	Alarm only
Continued on next page		

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

ATTACHMENT A3

NOMENCLATURE DESCRIPTION	SETPOINT	ORIGIN
ADS OR SAFETY VLV NOT RESEATED	OPEN RELIEF VLV POSITIONS	Various
ADS OR SAFETY VLV LEAKING	OPEN SRV/ADS VALVES	220°F TR-R614

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:1. IF ADSOR 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) 2. ADS Valve automatically open on ADS actuation.	1A. RESPOND according to HC.OP-EO.ZZ-0101(Q). 1B. ENSURE any SRV and/or ADS valve that opened has closed <u>WHEN</u> no longer required to be open. 2A. RESPOND according to HC.OP-EO.ZZ-0101(Q). 2B. <u>WHEN</u> ADS is no longer required, under the direction of the CRS RESET the ADS initiation. 2C. ENSURE any ADS valve that opened has closed <u>WHEN</u> no longer required to be open.
Continued on next page	

REFERENCES: M-41-1, Sht. 1; Sht. 2
 J-0650-1, Sht 8
 CD-782A SIL 196

PJ800Q-0020 Shts 1,2,6
 PN1-B21-1060-0063, Sht 12

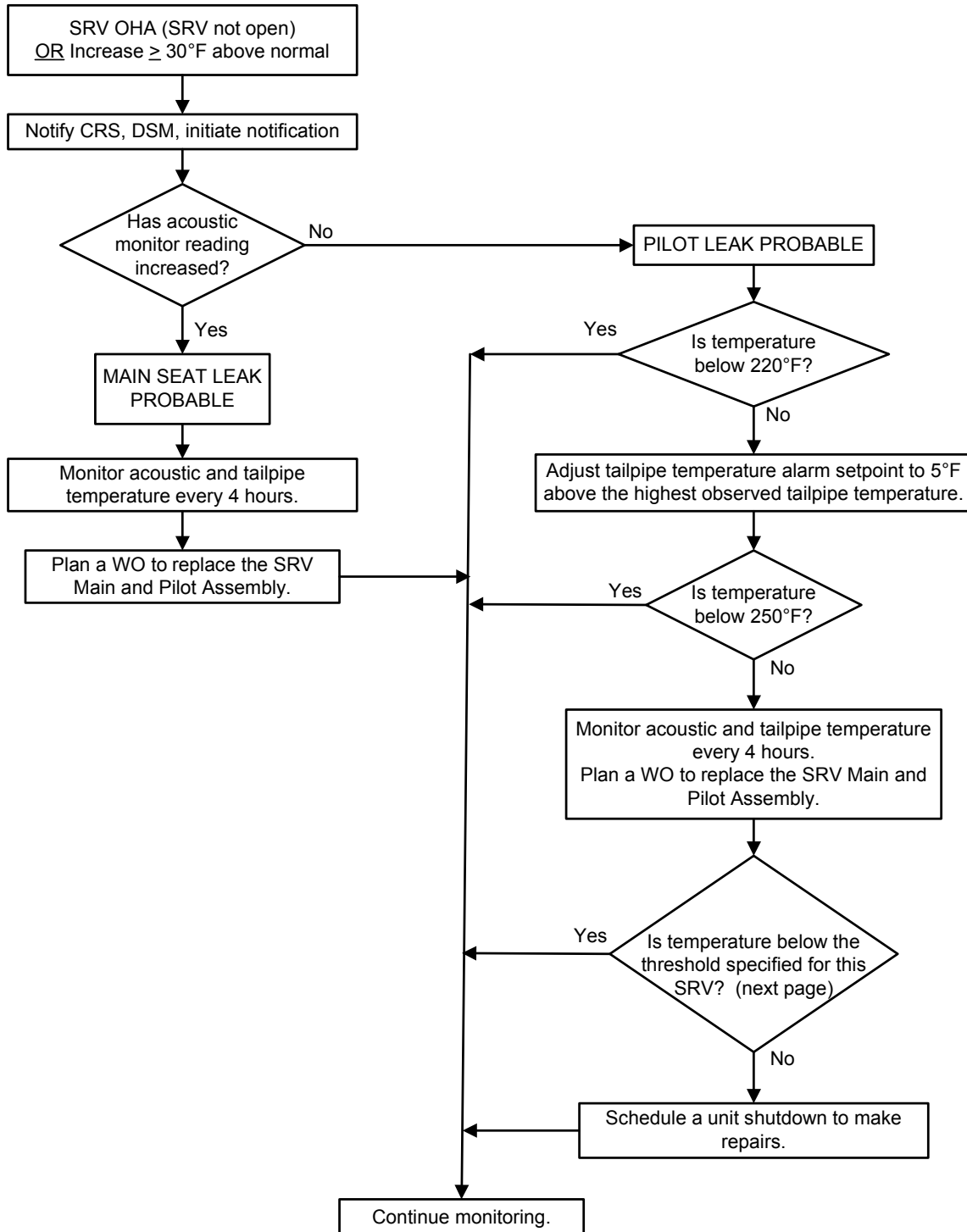
ATTACHMENT A3

CONDITION ADS OR SAFETY VLV NOT RESEATED
CONDITION ADS OR SAFETY VLV LEAKING

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

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 **SRV Leakage Determination, Monitoring Process and Decision Making**



Note: Separate OTDM or ACM are NOT required if using this flowchart for decision making.

Note: Due to the large volume of water in the torus, changes in level and temperature will be slow. Normal monitoring recorded in the CR logs is sufficient to detect changes and take actions. RHR run time is also recorded in CR logs.

ATTACHMENT A3
Safety Relief Valve Tailpipe Temperatures at Thermocouple
(Assuming a Leak Rate of 100 lbm/hr)

The Safety Relief Valve Tailpipe Temperature values listed below can be used as a basis for determining possible plant shutdown for repair/replacement of pilot and/or valve. This temperature guidance does not impact the ability of the valves to open to prevent overpressurization that could lead to failure of the Reactor Coolant Pressure Boundary, nor does it hinder them from opening for automatic depressurization as part of the ECCS for events involving small breaks in the Reactor Coolant Pressure Boundary.

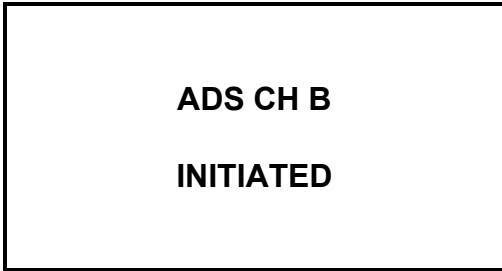
Using the data obtained from VTD 325477, the calculations determined the expected steam temperature downstream of the SRVs. For analysis purposes, the calculations assumed a leak rate of 100 lbm/hr. In this manner, a valve specific limiting tailpipe temperature is provided for each SRV that is based on its particular distance between each SRV and its associated downstream thermocouple rather than having to use a generic temperature that is the same for all SRVs. [70034486]

Safety Relief Valve	Thermocouple ID Number	Tailpipe Temperature at Thermocouple (°F)
PSV-F013A TE-N004A		292.6
PSV-F013B	TE-N004B	281.6
PSV-F013C	TE-N004C	282.3
PSV-F013D	TE-N004D	291.4
PSV-F013E	TE-N004E	289.4
PSV-F013F	TE-N004F	274.5
PSV-F013G	TE-N004G	290.8
PSV-F013H	TE-N004H	263.5
PSV-F013J	TE-N004J	291.2
PSV-F013K	TE-N004K	273.4
PSV-F013L	TE-N004L	275.2
PSV-F013M	TE-N004M	290.4
PSV-F013P	TE-N004P	276.1
PSV-F013R	TE-N004R	290.4

Reference:

Engineering Calculation H-1-AB.MDC-2024,
Main Steam SRV Tailpipe Temperature Monitoring Criteria, Revision 0
VTD 325477

ATTACHMENT A4



Window Location C1-A4

OPERATOR ACTION:

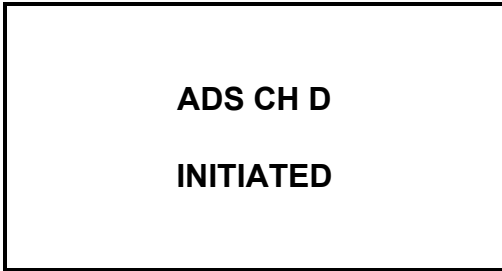
1. **VERIFY** AUTOMATIC ACTION
AND **MONITOR** ADS blowdown.
2. **REFER** to HC.OP-EO.ZZ-0202(Q).
3. **ENSURE** compliance with the Depressurization Systems Suppression Chamber requirements of Technical Specifications 3.6.2.

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 A5



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 B1

SLC PUMP/VALVE O/PF
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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 <u>AND</u> 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 <u>AND</u> the OVLD/PWR FAIL light BH-HV-F006B cycles on and off.

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

ATTACHMENT B2

<p>RWCU F/D</p> <p>INLET</p> <p>TEMP HI</p>
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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	<p>RWCU Outboard Isolation Valve HV-F004 closes.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"><u>NOTE</u></p> <p>Operating RWCU Pumps will trip on the HV-F004 close signal.</p> </div>

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 ARMED	ADS LOGIC B INIT SW S6F	Alarm only
D2478 ARMED	ADS LOGIC D INIT SW S6D	Alarm only
D2506 ARMED	ADS LOGIC D INIT SW S6H	Alarm only

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

ATTACHMENT B4

<p>ADS CH B</p> <p>INITIATION</p> <p>PENDING</p>
--

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 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 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 CONTINUITY	SLCS SQUIB XV-F004A	Alarm only
D3021 CONTINUITY	SLCS SQUIB XV-F004B	Alarm only

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

ATTACHMENT C2

**RWCU
SYSTEM
TROUBLE**

Window Location C1-C2

OPERATOR ACTION:

IF both RWCU Recirc Pumps are running, AND 1 trips,
THROTTLE BG-HV-F044, FILTER DEMIN BYPASS, (if open)
OR BG-HV-F042, REGEN HX RTN ISLN to system flow of < 134 gpm on
 Computer Point A2856 RWCU OUTLET FLOW TO FDW
UNTIL Chemistry can remove a Filter/Demin from service

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 HV-F039	RWCU RTN TO REAC OPF	
D3147 HV-3980	RWCU TO CHEM W TK OPF	
D3241 TEMP	RWCU PUMP A SEAL CAVITY	
D3242 TEMP	RWCU PUMP B SEAL CAVITY	
Continued on next page		

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 MALF	RWCU PUMP AP221 MOTOR	AP221 trips
D5359 MALF	RWCU PUMP BP221 MOTOR	BP221 trips

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

ATTACHMENT C3

<p style="text-align: center;">ADS</p> <p style="text-align: center;">ISOLATOR</p> <p style="text-align: center;">CARD TRBL</p>
--

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 OUT	ADS B ISOLATER OUT CARD	Alarm only
D5756 OUT	ADS D ISOLATER OUT CARD	Alarm only

REFERENCES: E-6765-0, Sht. A
N1-B21-63, Sht. 11
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 SERVICE	ADS CH B LOGIC OUT OF	Alarm only
D5320 PROCEDURE	ADS CH B FAULTY TEST	Alarm only

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

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 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 Panel 10C651.
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 D2

<p>RWCU F/D</p> <p>PANEL</p> <p>10C076</p>

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 D3

REACTOR
RECIRC
PUMPS TRIP

Window Location C1-D3

OPERATOR ACTION:

1. **REFER** to the HC.OP-AB.RPV-0003(Q); Recirculation System/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 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) Recirculation System/Reactor Power Oscillations.
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 <u>AND</u> 3.
D2917	RECIRC MG DRIVE MOTOR A BRKR	Rx Recirc. Pump AP201 trips from breaker opening <u>OR</u> 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 <u>IF</u> operating as the reserve pump.

Continued on next page

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	<ol style="list-style-type: none"> 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 <u>IF</u> operating as the reserve pump.
D5340	RECIRC MG A DRIVE/LUBOIL PRESS	Emergency Lube Oil Pump AP113 auto-starts

Associated Annunciator C1 D4

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

ATTACHMENT 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) Recirculation System/Reactor Power Oscillations.
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 <u>AND</u> 3.
D2918	RECIRC MG DRIVR MOTOR B BRKR	Reactor Recirc Pump BP201 trips from breaker opening <u>OR</u> 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 <u>IF</u> operating as the reserve pump.
Continued on next page		

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 <u>IF</u> 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 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 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
Continued on next page		

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

ATTACHMENT E3

NOMENCLATURE	<u>RPS EOC-RPT LOGIC A MAN BYPASSED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>RECIRC PUMP TRIP DISABLE SYSTEM A</u>	ORIGIN	<u>GE Panel H11-P609</u>

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.
Continued on next page	

REFERENCES: E-6794-0, Sht. 1

ATTACHMENT E3

NOMENCLATURE	<u>RPS EOC-RPT LOGIC B MAN BYPASSED</u>	SETPOINT	<u>N/A</u>
DESCRIPTION	<u>RECIRC PUMP TRIP DISABLE SYSTEM B</u>	ORIGIN	<u>GE Panel H11-P611</u>

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: [80077525]**

1. IF __ Recirculation Pump is operating in a critical speed band,
AND, a Recirculation Pump Speed change is in progress,
THEN, **CONTINUE** the Recirculation Pump Speed change that was in progress in an attempt to
 CLEAR the (A2601-A2604) alarm condition.
REFER TO HC.OP-AB.RPV-0003(Q), Recirculation System/Reactor Power Oscillations.

1AP201 1BP201			
RPM %	SPEED RPM %		SPEED
560-600 33-36	567-607 34-36		
595-635 35-38	645-685 39-41		
		1160-1200	69-72

2. IF __ outside the critical speed bands
AND, any of the following analog points are in ALERT,
THEN **ENTER** HC.OP-AB.RPV-0003(Q), Recirculation System/Reactor Power Oscillations.
- A2601 (Setpoint - 11.0 mils)
 - A2602 (Setpoint - 3.0 mils)
 - A2603 (Setpoint - 11.0 mils)
 - A2604 (Setpoint - 6.0 mils)
3. IF __ CRIDS point D2922 and/or D2923 are in alarm and Drywell is accessible
THEN, **VERIFY** proper oil level on the respective Recirc Pump Motor.
4. **ENSURE** compliance with Technical Specifications 3.4.1.1 and 3.4.1.3.
5. IF __ Alarm is due to Gap Voltage, (Gap Voltage can be observed on System 1)
THEN **INITIATE** a notification to report the alarm.

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
 80089092 - Cycle 14 Reactor Recirculation Vibration Monitoring Program
 80089110 - Cycle 14 Reactor Recirculation Pump Critical Speed Review

ATTACHMENT E5

<p>SRV</p> <p>LO LO SET</p> <p>ARMED</p>

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 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 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 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 ($\leq -129"$)) 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 F4

COMPUTER PT

RETURN TO

NORMAL

Window Location C1-F4

OPERATOR ACTION:

MONITOR LCDs 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 <u>AND</u> then be removed from LCD.	REFER to Note below <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 60%;"> <p style="text-align: center;"><u>NOTE</u></p> <p>Nomenclature associated with "cleared" analog/ digital point will change from red to yellow <u>AND</u> then be removed from LCD display screen.</p> </div>	Alarm only
Continued on next page		

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	LCD display in alarmed condition (red) turns yellow <u>AND</u> then clears	ORIGIN	Multiple

AUTOMATIC ACTION:

Alarm only

OPERATOR ACTION:

MONITOR LCDs 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-established.

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
A2601	RECIRC PMP A SHAFT RADIAL	Alarm Only
A2602	RECIRC PMP A MTR RADIAL	Alarm Only
A2603	RECIRC PUMP B SHAFT RADIAL	Alarm Only
A2604	RECIRC PUMP B MTR RADIAL	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
Continued on next page		

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

ATTACHMENT F5

INPUTS

Digital Point/ Indication	Nomenclature/Condition	Automatic Action
D2924	RECIRC PUMP A SEAL LKG FLOW	Alarm Only: High Alarm 0.1 GPM
D2925	RECIRC PUMP B SEAL LKG FLOW	Alarm Only: High Alarm 0.1 GPM
D2926	RECIRC PUMP A SEAL STAGE FLOW	Alarm Only: High Alarm 1.25 GPM Low Alarm 0.36 GPM
D2927	RECIRC PUMP B SEAL STAGE FLOW	Alarm Only: High Alarm 1.25 GPM Low Alarm 0.36 GPM

ATTACHMENT F5

NOMENCLATURE	<u>Computer point in alarm condition</u>	SETPOINT	<u>Various</u>
DESCRIPTION	<u>LCD analog/digital point and nomenclature displayed in red</u>	ORIGIN	<u>Various</u>

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 <u>AND REFER</u> to operating procedures and guidelines.
Continued on next page	

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