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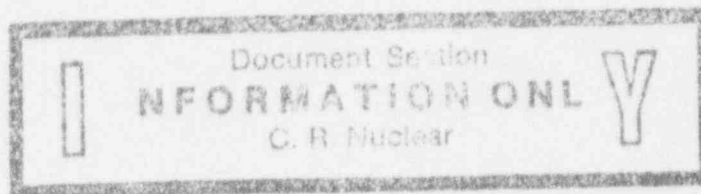
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7/21/94

ANNUNCIATOR RESPONSE

AR-303

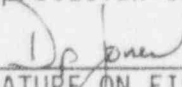
FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ESC ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

  
(SIGNATURE ON FILE)

DATE:

7/21/94INTERPRETATION CONTACT: Supervisor, Nuclear Operations  
Administrative Shift

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## 1.0 PURPOSE

- 1.1 Establish a reference document for each Annunciator Window on the ESAB-A Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ESAB-A Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ESAB-A Lampbox.

## 2.0 REFERENCES

### 2.1 IMPLEMENTING REFERENCES

- 2.1.1 EOP, Emergency Operating Procedure
- 2.1.2 AP-330, Loss of Nuclear Services Water
- 2.1.3 AP-470, Loss of Instrument Air
- 2.1.4 AP-961, Earthquake
- 2.1.5 OP-700C, 120/240 Volt AC Distribution Panels
- 2.1.6 OP-301, Operation of the Reactor Coolant System
- 2.1.7 SP-317, RC System Water Inventory Balance

### 2.2 DEVELOPMENTAL REFERENCES

- 2.2.1 INPO 90-021, Good Practice OP-217, Alarm Response Procedures
- 2.2.2 Annunciator Window Engraving Drawing E-224-048

## 3.0 PERSONNEL INDOCTRINATION

- 3.1 The Annunciator System is powered from VBDP-5 Breaker 28.

## 4.0 INSTRUCTIONS

- 4.1 Respond to alarms on the ESAB-A Lampbox as indicated on Enclosure 1, Annunciator Response.

## 5.0 FOLLOW-UP ACTIONS

None



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-01	C-01-01
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[illegible]

RC-1  
HIGH PRESS  
BISTABLE TRIP

EVENT POINT 0937

INDICATED CONDITION:

- o RCS PRESSURE < 1500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-1 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #1 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO EOP.

DISCUSSION:

THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 HPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESA-24

SENSING ELEMENT: BT-1 ES ACTUATION RELAY

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-02	C-01-02
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[illegible]

RC-4  
LOW PRESS  
BISTABLE TRIP

EVENT POINT 0940

INDICATED CONDITION:

- RCS PRESSURE <500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-4 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #1 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- o REFER TO EOP

DISCUSSION:

THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 LPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESB-39

SENSING ELEMENT: BT-7 ES ACTUATION RELAY

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-03	C-01-03
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[illegible]

SW BP A/B  
TRIP

EVENT POINT 1831

INDICATED CONDITION:

- o SWP-2A MOTOR NOT ENERGIZED WITH CONTROL SWITCH IN NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION.
- SWP-2B AUTO START.
- SW BP A/B FLOW LOW ALARM.
- CRDM COMPUTER HIGH TEMP ALARM(S).

OPERATOR ACTION FOR A VALID ALARM:

- o ENSURE SWP-2B STARTS.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-056 SHEET SW-04

SENSING ELEMENT: SWP-2A CONTROL SWITCH CONTACTS CS/SC, CS/O

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-03	C-01-03
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[illegible]

SW BP A/B  
TRIP

EVENT POINT 1833

INDICATED CONDITION:

- o SWP-2B MOTOR NOT ENERGIZED WITH CONTROL SWITCH IN NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION.
- SWP-2A AUTO START.
- SW BP A/B FLOW LOW ALARM.
- CRDM HIGH TEMP COMPUTER ALARM(S).

OPERATOR ACTION FOR A VALID ALARM:

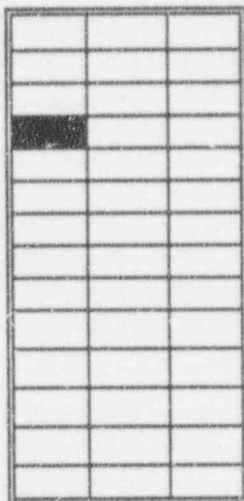
- o ENSURE SWP-2A STARTS.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-056 SHEET SW-05

SENSING ELEMENT: SWP-2B CONTROL SWITCH CONTACTS CS/SC, CS/O

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-04	C-01-04
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SW BP A/B  
FLOW  
LOW

EVENT POINT 1830

INDICATED CONDITION:

- CRDM BOOSTER PUMP FLOW <140 GPM FOR >5 SEC AS SENSED BY SW-91-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- SW BP A/B TRIP ALARM.
- SW BP A/B AUTO START ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- ENSURE STANDBY NUCLEAR SERVICES BOOSTER PUMP IS RUNNING.
- CHECK CRDM FILTER ΔP, IF HIGH PLACE STANDBY FILTER IN SERVICE.
- CHECK NUCLEAR SERVICES FLOWPATH.

DISCUSSION:

ALTERNATE NUCLEAR SERVICE BOOSTER PUMP STARTS IF <140 GPM FOR >2 SEC.

IF TWO PUMPS ARE RUNNING AND ONE PUMP WILL PROVIDE SUFFICIENT FLOW, THEN ONE PUMP SHOULD BE SECURED.

REFERENCES: DRAWING 208-056 SHEET SW-04\*

SENSING ELEMENT: SW-91-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-06	C-01-06
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[illegible]

SW BP A/B  
AUTO START

EVENT POINT 1832

INDICATED CONDITION:

- o SWP-2A MOTOR ENERGIZED WITH CONTROL SWITCH IN NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT WITH A GREEN FLAG ON CONTROL STATION.
- o SW BP A/B LOW FLOW ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF BOOSTER PUMP AUTO START.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

WITH A DECREASING FLOW THE ALTERNATE NUCLEAR SERVICES BOOSTER PUMP WILL  
START WHEN FLOW IS <140 GPM FOR >2 SEC.

REFERENCES: DRAWING 208-056 SHEET SW-04

SENSING ELEMENT: SWP-2A CONTROL SWITCH CONTACTS CS/SC, CS/O



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-06	C-01-06
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[illegible]

SW BP A/B  
AUTO START

EVENT POINT 1834

INDICATED CONDITION:

- SWP-2B MOTOR ENERGIZED WITH CONTROL SWITCH IN NORMAL AFTER STOP POSITION.

- o SWP-2B MOTOR ENERGIZED WITH CONTROL SWITCH IN NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT WITH A GREEN FLAG ON CONTROL STATION.
- SW BP A/B LOW FLOW ALARM.

- o RED LIGHT WITH A GREEN FLAG ON CONTROL STATION.
- o SW BP A/B LOW FLOW ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF BOOSTER PUMP AUTO START.
- o INVESTIGATE CAUSE OF PUMP TRIP.

- o INVESTIGATE CAUSE OF BOOSTER PUMP AUTO START.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

WITH A DECREASING FLOW THE ALTERNATE NUCLEAR SERVICES BOOSTER PUMP WILL START WHEN FLOW IS <140 GPM FOR >2 SEC.

WITH A DECREASING FLOW THE ALTERNATE NUCLEAR SERVICES BOOSTER PUMP WILL START WHEN FLOW IS <140 GPM FOR >2 SEC.

REFERENCES: DRAWING 208-056 1 SW-05

SENSING ELEMENT: SWP-2B CONTROL SWITCH CONTACTS CS/SC, CS/O

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-08	C-01-08
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[illegible]

SW SURGE TANK  
LEVEL  
HIGH/LOW

EVENT POINT 1835

INDICATED CONDITION:
o SW SURGE TANK LEVEL >11'6" AS SENSED BY SW-137-LS.
REDUNDANT INDICATION WHICH WILL VERIFY ALARM:
o HIGH NITROGEN PRESSURE ALARM. o RML-3 RADIATION ALARM. o SWV-277 OPEN INDICATION.
OPERATOR ACTION FOR A VALID ALARM:
o INVESTIGATE CAUSE OF HIGH LEVEL ALARM.
DISCUSSION:
AN INCREASING SW SURGE TANK LEVEL MAY INDICATE LEAKAGE FROM ANY OF THE LETDOWN COOLERS OR RCP SEAL PACKAGE COOLERS.
REFERENCES: DRAWING 208-056 SHEET SW-31
SENSING ELEMENT: SW-137-LS

- o SW SURGE TANK LEVEL >11'6" AS SENSED BY SW-137-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH NITROGEN PRESSURE ALARM.
- o RML-3 RADIATION ALARM.
- o SWV-277 OPEN INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF HIGH LEVEL ALARM.

### DISCUSSION:

AN INCREASING SW SURGE TANK LEVEL MAY INDICATE LEAKAGE FROM ANY OF THE  
LETDOWN COOLERS OR RCP SEAL PACKAGE COOLERS.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-137-LS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-08	C-01-08
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[illegible]

SW SURGE TANK  
LEVEL  
HIGH/LOW

EVENT POINT 1836

INDICATED CONDITION:

- o SW SURGE TANK LEVEL <8'6" AS SENSED BY SW-137-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOW NITROGEN PRESSURE ALARM.
- o SW SYSTEM PRESSURE LOW ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- FILL SW SURGE TANK AS NECESSARY.
- INVESTIGATE CAUSE OF LOW TANK LEVEL.
- REFER TO AP-330.
- IF a 4# RBIC actuation has occurred and is bypassed,  
THEN close the SW isolation valves to the RCP's, SWV-79 THROUGH SWV-86.

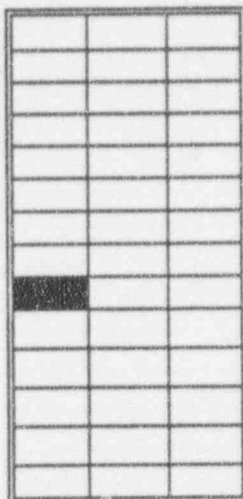
DISCUSSION:

A DECREASING SW SURGE TANK LEVEL MAY INDICATE POSSIBLE LEAKAGE FROM SYSTEM RELIEF VALVES. IF RUNNING MORE THAN 1 SW PUMP THEN SYSTEM PRESSURE MAY BE HIGH CAUSING THIS LEAKAGE.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-137-LS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-09	C-01-09
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SW SURGE TANK  
PRESS  
HIGH/LOW

EVENT POINT 1837

INDICATED CONDITION:

- SW SURGE TANK PRESSURE >95 PSIG AS SENSED BY SW-134-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH INDICATED TANK PRESSURE.
- HIGH SW SURGE TANK LEVEL.

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF HIGH PRESSURE.
- CHECK NITROGEN SUPPLY ISOLATION VALVE CLOSED.
- CHECK TANK PRESSURE REGULATOR (SWV-281) FOR PROPER OPERATION.
- IF PRESSURE ALARM CAUSED BY HIGH LEVEL, RESTORE LEVEL TO NORMAL BAND.

DISCUSSION:

IF NECESSARY TO REDUCE TANK PRESSURE A MANUAL VENT VALVE (SWV-198) IS AVAILABLE TO VENT THE EXCESS PRESSURE TO THE AB VENTILATION SYSTEM.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-134-PS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-09	C-01-09
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[illegible]

SW SURGE TANK  
PRESS  
HIGH/LOW

EVENT POINT 1838

INDICATED CONDITION:

- o SW SURGE TANK PRESSURE <75 PSIG AS SENSED BY SW-134-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- LOW INDICATED TANK PRESSURE.
- LOW SW SURGE TANK LEVEL.
- SW SYSTEM PRESS LOW.

OPERATOR ACTION FOR A VALID ALARM:

- o REFER TO AP-330.
- o CHECK FOR TANK GAS SPACE LEAKS.
- o CHECK TANK PRESSURE CONTROL BYPASS VALVE (SWV-198) CLOSED.
- o CHECK TANK PRESSURE CONTROL VALVE (SWV-231) NOT LEAKING BY.
- o IF PRESSURE ALARM CAUSED BY LOW LEVEL, RESTORE LEVEL TO NORMAL BAND.

DISCUSSION:

IT IS POSSIBLE TO CHECK FOR SWV-281 LEAK BY CLOSING VALVE SWV-282 AND OBSERVING FOR TANK PRESSURE TO RECOVER.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-134-PS2

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-11	C-01-11
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[illegible]

RB FAN A/B/C  
CLG WTR FLOW  
LOW

EVENT POINT 1843

INDICATED CONDITION:

- 0 SW OR CI FLOW FROM AIR HANDLING UNIT 1A <400 GPM AS SENSED BY SW-47-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING SW SYSTEM LEAK ALARM.
- o COMPUTER POINT S348.
- o SW OUTLET VALVE (SWV-41) CLOSED INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- IF ADDITIONAL COOLING WATER FLOW IS REQUIRED, START SWP-1A OR SWP-1B AND ENSURE THE FAN IS ALIGNED TO SW.
- IF SW LEAKAGE IS INDICATED, ISOLATE COOLING WATER TO AHF-1A.

DISCUSSION:

THIS ALARM IS AN EXPECTED ALARM AFTER AIR HANDLING UNIT SHUTDOWN. (TIME DELAY OF  $\approx 60$  SECONDS CLOSSES SWV-41.)

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-47-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-11	C-01-11
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[illegible]

RB FAN A/B/C  
CLG WTR FLOW  
LOW

EVENT POINT 1844

INDICATED CONDITION:

- o SW OR CI FLOW FROM AIR HANDLING UNIT 1B <400 GPM AS SENSED BY SW-51-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING SW SYSTEM LEAK ALARM.
- o COMPUTER POINT S376.
- o SW OUTLET VALVE (SWV-43) CLOSED INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- IF ADDITIONAL COOLING WATER FLOW IS REQUIRED, START SWP-1A OR SWP-1B AND ENSURE THE FAN IS ALIGNED TO SW.
- IF SW LEAKAGE IS INDICATED, ISOLATE COOLING WATER TO AHF-1B.

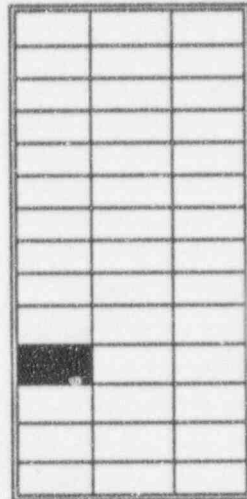
DISCUSSION:

THIS ALARM IS AN EXPECTED ALARM AFTER AIR HANDLING UNIT SHUTDOWN. (TIME DELAY OF  $\approx 60$  SECONDS CLOSES SWV-43.)

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-51-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-11	C-01-11
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RB FAN A/B/C  
CLG WTR FLOW  
LOW

EVENT POINT 1845

INDICATED CONDITION:

- SW OR CI FLOW FROM AIR HANDLING UNIT 1C <400 GPM AS SENSED BY SW-55-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- REACTOR BUILDING SW SYSTEM LEAK ALARM.
- COMPUTER POINT S387.
- SW OUTLET VALVE (SWV-45) CLOSED INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- IF ADDITIONAL COOLING WATER FLOW IS REQUIRED, START SWP-1A OR SWP-1B AND ENSURE THE FAN IS ALIGNED TO SW.
- IF SW LEAKAGE IS INDICATED, ISOLATE COOLING WATER TO AHF-1B.

DISCUSSION:

THIS ALARM IS AN EXPECTED ALARM AFTER AIR HANDLING UNIT SHUTDOWN. (TIME DELAY OF ≈60 SECONDS CLOSES SWV-45.)

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-55-FS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1840

INDICATED CONDITION:

- o DIFF FLOW TO AIR HANDLING UNIT 1A >90 GPM AS SENSED BY SW-46-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RB FAN A/B/C CLG WTR FLOW LCW ALARM.
- DECREASING LEVEL IN SW SURGE TANK.
- HIGH TEMP ALARM ON AFFECTED COMPONENT.

OPERATOR ACTION FOR A VALID ALARM:

- o REFER TO AP-330.
- o ISOLATE THE AFFECTED COMPONENT, AND PLACE BACKUP IN SERVICE IF REQUIRED.
- o FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >90 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-46-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1841

INDICATED CONDITION:

- o DIFF FLOW TO AIR HANDLING UNIT 1B >90 GPM AS SENSED BY SW-50-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RB FAN A/B/C CLG WTR FLOW LOW ALARM.
- DECREASING LEVEL IN SW SURGE TANK.
- HIGH TEMP ALARM ON AFFECTED COMPONENT.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- ISOLATE THE AFFECTED COMPONENT, AND PLACE BACKUP IN SERVICE IF REQUIRED.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >90 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-50-FS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1842

INDICATED CONDITION:

- o DIFF FLOW TO AIR HANDLING UNIT IC >90 GPM AS SENSED BY SW-54-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RB FAN A/B/C CLG WTR FLOW LOW ALARM.
- DECREASING LEVEL IN SW SURGE TANK.
- HIGH TEMP ALARM ON AFFECTED COMPONENT.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- ISOLATE THE AFFECTED COMPONENT, AND PLACE BACKUP IN SERVICE IF REQUIRED.
- FILL SW SURGE TANK AS NECESSARY.

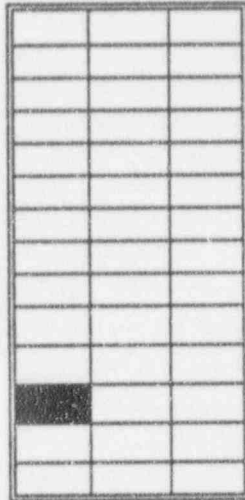
DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >90 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-54-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1846

INDICATED CONDITION:

- DIFF FLOW TO LD COOLER A AND C >50 GPM AS SENSED BY SW-42-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DECREASING LEVEL IN SW SURGE TANK.
- HIGH TEMP ALARM ON AFFECTED COMPONENT.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- ISOLATE THE AFFECTED COMPONENT, AND PLACE BACKUP IN SERVICE IF REQUIRED.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >50 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-42-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1847

INDICATED CONDITION:

- o DIFF FLOW TO LD COOLER B >50 GPM AS SENSED BY SW-43-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DECREASING LEVEL IN SW SURGE TANK.
- HIGH TEMP ALARM ON AFFECTED COMPONENT.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- ISOLATE THE AFFECTED COMPONENT, AND PLACE BACKUP IN SERVICE IF REQUIRED.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >90 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-43-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1848

INDICATED CONDITION:

- o DIFF FLOW TO CRDM'S >10 GPM AS SENSED BY SW-90-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DECREASING LEVEL IN SW SURGE TANK.
- o INCREASING TEMPS ON CRDM'S.
- o COMPUTER GROUP 15 OR POINTS X-211 TO X-279.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >10 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-90-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1849

INDICATED CONDITION:

- o DIFF FLOW TO RCP-1A >20 GPM AS SENSED BY SW-107-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DECREASING LEVEL IN SW SURGE TANK.
- o INCREASING TEMPS ON RCP A.
- o COMPUTER GROUP 78.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >20 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-107-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1850

INDICATED CONDITION:

- o DIFF FLOW TO RCP-1B >20 GPM AS SENSED BY SW-113-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DECREASING LEVEL IN SW SURGE TANK.
- o INCREASING TEMPS ON RCP B.
- o COMPUTER GROUP 79.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- FILL SW SURGE TANK AS NECESSARY.

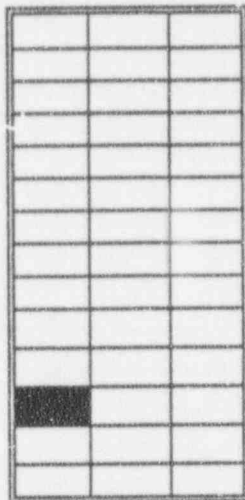
DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >20 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-113-FS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-12	C-01-12
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REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1851

INDICATED CONDITION:

- DIFF FLOW TO RCP-1C >20 GPM AS SENSED BY SW-95-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DECREASING LEVEL IN SW SURGE TANK.
- INCREASING TEMPS ON RCP C.
- COMPUTER GROUP 80.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >20 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-95-FS



ESAB-A ANNUNCIATOR RESPONSE *	ESAB-A-01-12	C-01-12
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[illegible]

REACTOR BLDG  
SW SYSTEM  
LEAK

EVENT POINT 1852

INDICATED CONDITION:

- o DIFF FLOW TO RCP-1D >20 GPM AS SENSED BY SW-101-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DECREASING LEVEL IN SW SURGE TANK.
- o INCREASING TEMPS ON RCP D.
- o COMPUTER GROUP 81.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-330.
- FILL SW SURGE TANK AS NECESSARY.

DISCUSSION:

THE LOCAL BARTON GAUGE WILL BE >2.34 PSID IF DIFFERENTIAL FLOW IS >20 GPM.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-101-FS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-01-14	C-01-14
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[illegible]

ES CAB  
FAN  
FAILURE

EVENT POINT 1232

INDICATED CONDITION:

- o LOW CABINET AIR FLOW AS SENSED BY INDIVIDUAL CABINET FAN FLOW SWITCH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o 'FAN RUNNING' LIGHT EXTINGUISHED

OPERATOR ACTION FOR A VALID ALARM:

- o VERIFY COOLING FAN IN OPERATION.

DISCUSSION:

I&C SHOP PERIODICALLY REPLACES THE DOOR FILTERS PER SCHEDULED PM'S. IF THE ALARM BECOMES A NUISANCE BECAUSE OF DIRTY FILTERS, GENERATE A WORK REQUEST TO REPLACE THE FILTERS. SOMETIMES A LIGHT VACUUMING WILL HELP UNTIL REPLACEMENT.

REFERENCES: DRAWING 208-028 SHEET ESAB-5

SENSING ELEMENT: FSBFX (ES ACTUATION CABINET INDIVIDUAL FAN FLOW SWITCH)

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-01	C-02-01
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[illegible]

RC-2  
HIGH PRESS  
BISTABLE TRIP

EVENT POINT 0938

INDICATED CONDITION:

- RCS PRESSURE <1500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-2 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #2 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- o REFER TO EOP

DISCUSSION:

THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 HPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESA-24

SENSING ELEMENT: BT-2 ES ACTUATION RELAY

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-02	C-02-02
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[illegible]

RC-5  
LOW PRESS  
BISTABLE TRIP

EVENT POINT 0925

INDICATED CONDITION:

- RCS PRESSURE <500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-5 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #2 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO EOP

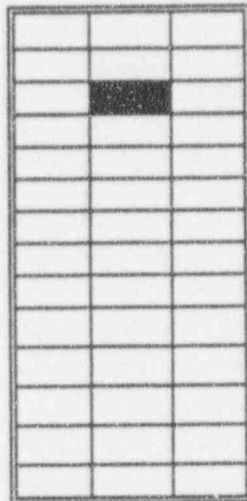
DISCUSSION:

THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 LPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESB-39

SENSING ELEMENT: BT-8 ES ACTUATION RELAY

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-03	C-02-03
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SW PUMP C  
TRIP

EVENT POINT 1821

INDICATED CONDITION:

- SWP-1C BREAKER OPEN WITH CONTROL SWITCH IN NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION.
- SWP-1B AUTO START ALARM.
- SW SYSTEM PRESS LOW ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- ENSURE EMERGENCY NUCLEAR SERVICES PUMP SWP-1B OR SWP-1A AUTO START.
- INVESTIGATE CAUSE OF PUMP TRIP.

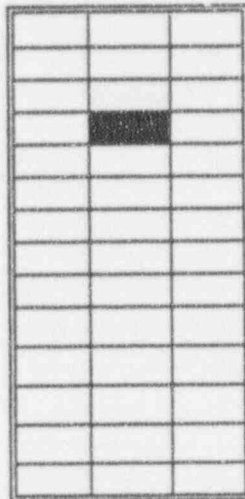
DISCUSSION:

SWP-1B STARTS 2 SEC AFTER PRESS DECREASES TO <110 PSIG. IF SWP-1B FAILS TO START, OR IS TAGGED OUT, SWP-1A WILL START 10 SEC AFTER PRESS DECREASES TO <110 PSIG. NO AUTO START ALARM IS CURRENTLY INSTALLED FOR SWP-1A.

REFERENCES: DRAWING 208-056 SHEET SW-01

SENSING ELEMENT: SWP-1C CONTROL SWITCH CONTACTS CS/SC, CS/O

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-04	C-02-04
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SWP C  
MOTOR  
OVERLOAD

EVENT POINT 1822

INDICATED CONDITION:

- SWP-1C MOTOR AMPS >115% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH MOTOR AMPS.
- SWP-1C TRIP.
- GREEN LIGHT ON WITH A RED FLAG ON SWP-1C CONTROL STATION.
- SW SYSTEM PRESS LOW SW-2-PI.

OPERATOR ACTION FOR A VALID ALARM:

- START SWP-1A OR SWP-1B, SECURE SWP-1C, INVESTIGATE CAUSE OF OVERLOAD.

DISCUSSION:

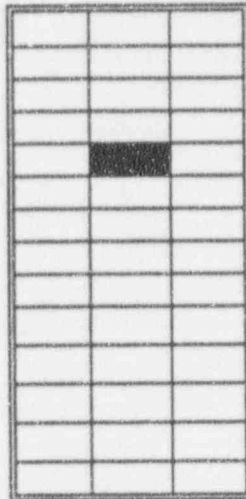
THIS ALARM INDICATES THAT EITHER THE TIMED OVERCURRENT OR INSTANTANEOUS OVERCURRENT PROTECTIVE DEVICES HAVE ACTUATED. INSTANTANEOUS OVERCURRENT PROTECTIVE RELAY ACTUATION WILL TRIP THE BREAKER.

IT IS POSSIBLE TO HAVE THIS ALARM PRIOR TO THE BREAKER TRIP.

REFERENCES: DRAWING 208-056 SHEET SW-01

SENSING ELEMENT: 51 RELAY (INSIDE 4160V BREAKER CUBICLE)

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-05	C-02-05
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SW SYSTEM  
PRESS  
LOW

EVENT POINT 1823

INDICATED CONDITION:

- SW SYSTEM HEADER PRESSURE <110 PSIG AS SENSED BY SW-151-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- SWP TRIP ALARM ON RUNNING SW PUMP.
- HIGH MOTOR AMPS ON RUNNING SW PUMP.
- SW SURGE TANK PRESS LOW.

OPERATOR ACTION FOR A VALID ALARM:

- ENSURE SWP-1B OR SWP-1A HAS STARTED.
- MONITOR SW SURGE TANK LEVEL FOR ADEQUATE INVENTORY.
- CHECK SW SYSTEM FOR LEAKS.
- CHECK FOR PROPER VALVE ALIGNMENT FOR RUNNING SW PUMP.

DISCUSSION:

REFERENCES: DRAWING 208-056 SHEET SW-03

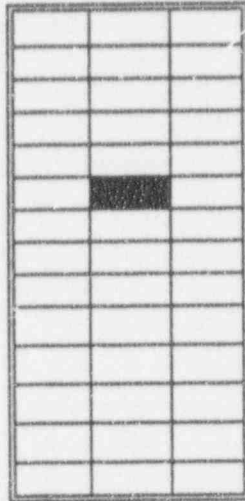
SENSING ELEMENT: SW-151-PS



ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-06

C-02-06



SW SYSTEM  
TEMP  
HIGH

EVENT POINT 1839

INDICATED CONDITION:

- SW PUMP SUCTION TEMP >105°F AS SENSED BY SW-5-TS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- SCREEN WASH TROUBLE.
- RW PUMP TRIP, OR ABNORMAL CURRENT.
- SW PUMP TRIP, OR ABNORMAL CURRENT

OPERATOR ACTION FOR A VALID ALARM:

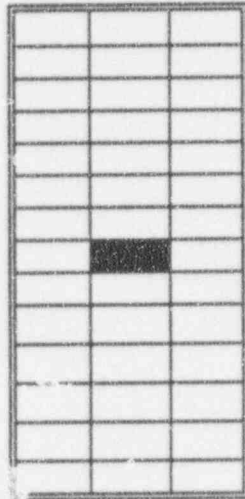
- REFER TO AP-330.
- PLACE ALL SW HEAT EXCHANGERS IN SERVICE IF REQUIRED.
- CHECK INTAKE SCREENS AND RWP'S TO ENSURE RAW WATER FLOW TO HEAT EXCHANGERS.
- MINIMIZE HEAT LOADS ON SW SYSTEM.
- CHECK SW HEAT EXCHANGERS DIFFERENTIAL TEMPERATURES FOR INDICATIONS OF FOULING.
- CHECK FOR PROPER VALVE ALIGNMENT FOR RUNNING SW PUMP AND SW HEAT EXCHANGERS.

DISCUSSION:

REFERENCES: DRAWING 208-056 SHEET SW-31

SENSING ELEMENT: SW-5-TS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-08	C-02-08
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NA OH TANK  
LEVEL  
HIGH/LOW

EVENT POINT 0051

INDICATED CONDITION:

- SODIUM HYDROXIDE TANK LEVEL >34.5 FT AS SENSED BY BS-3-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- TANK LEVEL INDICATION READING HIGH.

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF HIGH LEVEL.

DISCUSSION:

BST-1 HAS BEEN ISOLATED AND REACTOR BUILDING pH IS CONTROLLED DURING REACTOR BUILDING SPRAY ACTUATIONS THROUGH THE USE OF TRISODIUM PHOSPHATE DISPENSED IN BASKETS LOCATED IN THE REACTOR BUILDING.

MAR 88-5-1-2 WILL REMOVE THIS INSTRUMENTATION AT A LATER TIME.

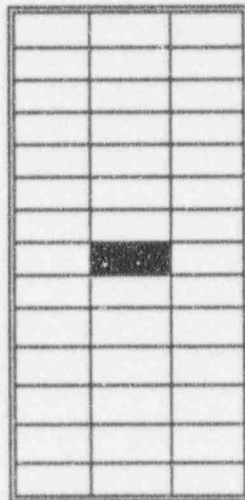
CONSIDERATION SHOULD BE GIVEN TO CONTROLLING A HIGH LEVEL CONDITION, SO AS NOT TO CREATE ANY CONDITION THAT MAY INADVERTENTLY SPILL SODIUM HYDROXIDE.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-3-LS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-08	C-02-08
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NA OH TANK  
LEVEL  
HIGH/LOW

EVENT POINT 0052

INDICATED CONDITION:

- 0 SODIUM HYDROXIDE TANK LEVEL <33.3 FT AS SENSED BY BS-3-LS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 0 TANK LEVEL INDICATION READING LOW.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW LEVEL.

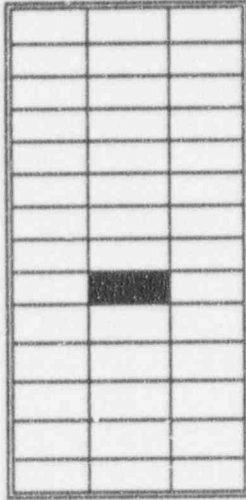
DISCUSSION:

BST-1 HAS BEEN ISOLATED AND REACTOR BUILDING pH IS CONTROLLED DURING REACTOR BUILDING SPRAY ACTUATIONS THROUGH THE USE OF TRISODIUM PHOSPHATE DISPENSED IN BASKETS LOCATED IN THE REACTOR BUILDING.  
MAR 88-5-1-2 WILL REMOVE THIS INSTRUMENTATION AT A LATER TIME.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-3-LS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-09	C-02-09
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NA OH TANK  
TEMP  
HIGH/LOW

EVENT POINT 0055

INDICATED CONDITION:

- o SODIUM HYDROXIDE TANK TEMPERATURE  $>110^{\circ}\text{F}$  AS SENSED BY BS-7-TS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 0 TANK TEMPERATURE INDICATION READING HIGH.

OPERATOR ACTION FOR A VALID ALARM:

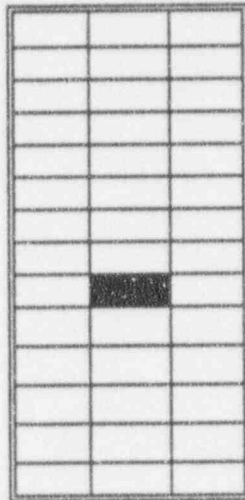
- o CHECK HEAT TRACING FOR PROPER OPERATION.

DISCUSSION:

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-7-TS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-09	C-02-09
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NA OH TANK  
TEMP  
HIGH/LOW

EVENT POINT 0056

INDICATED CONDITION:

- SODIUM HYDROXIDE TANK TEMPERATURE <50°F AS SENSED BY BS-7-TS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- TANK TEMPERATURE INDICATION READING LOW.

OPERATOR ACTION FOR A VALID ALARM:

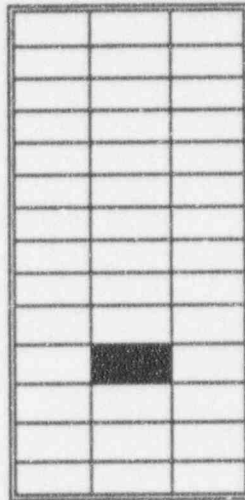
- CHECK HEAT TRACING FOR PROPER OPERATION.

DISCUSSION:

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-7-TS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-11	C-02-11
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REACTOR BLDG  
FLOOD LEVEL  
HIGH

EVENT POINT 1510

INDICATED CONDITION:

- REACTOR BUILDING WATER LEVEL >2.6' ABOVE RB FLOOR ( >97'7" elevation)

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH RB WATER LEVEL AS INDICATED ON WD-303-LI AND WD-304-LI.
- HIGH SUMP WATER LEVEL ON WD-222-LI.
- HIGH SUMP WATER LEVEL ON BS-65-PR.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO EOP.

DISCUSSION:

LEAKAGE INTO SUMP MAY BE FROM ONE OR MORE OF THE FOLLOWING: REACTOR COOLANT SYSTEM, SECONDARY SYSTEM, RC PUMP OIL, DEMIN WATER, SW LEAKS, COOLING WATER LINES CONDENSING HUMID AIR, REFUELING CANAL DRAINS.

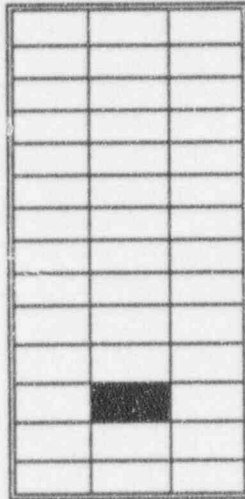
REFER TO SP-317 AND OP-301 TO DETERMINE IF RCS WATER IS BEING LOST TO THE RB SUMP.

ENSURE ANY RECENT CHANGES TO SYSTEM LINEUPS THAT MAY HAVE CAUSED THIS HIGH LEVEL CONDITION ARE INVESTIGATED.

REFERENCES: DRAWING 208-060 SHEET WD-137

SENSING ELEMENT: WD-303-LY,WD-304-LY LEVEL TRANSMITTERS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-12	C-02-12
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REACTOR BLDG  
SUMP LEVEL  
HIGH

EVENT POINT 1509

INDICATED CONDITION:

- REACTOR BUILDING SUMP LEVEL >4' ABOVE SUMP BOTTOM (>88'6" elevation).

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH SUMP WATER LEVEL ON WD-222-LI.
- HIGH SUMP WATER LEVEL ON BS-65-PR.

OPERATOR ACTION FOR A VALID ALARM:

- CHECK FOR INDICATIONS OF RCS LEAKAGE.
- NOTIFY PRIMARY PLANT OPERATOR TO INVESTIGATE.
- REFER TO EOP.

DISCUSSION:

LEAKAGE INTO SUMP MAY BE FROM ONE OR MORE OF THE FOLLOWING: REACTOR COOLANT SYSTEM, SECONDARY SYSTEM, RC PUMP OIL, DEMIN WATER, SW LEAKS, COOLING WATER LINES CONDENSING HUMID AIR, REFUELING CANAL DRAINS.

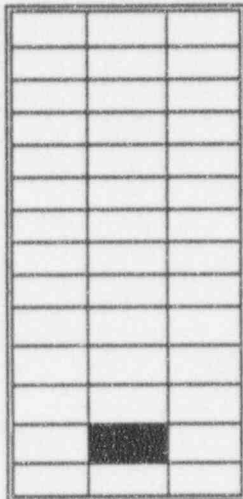
REFER TO SP-317 AND OP-301 TO DETERMINE IF RCS WATER IS BEING LOST TO THE RB SUMP.

ENSURE ANY RECENT CHANGES TO SYSTEM LINEUPS THAT MAY HAVE CAUSED THIS HIGH LEVEL CONDITION ARE INVESTIGATED.

REFERENCES: DRAWING 208-060 SHEET WD-137

SENSING ELEMENT: WD-301-LY, WD-302-LY LEVEL TRANSMITTERS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-13	C-02-13
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REACTOR BLDG  
SUMP PUMP  
TROUBLE

EVENT POINT 1585

INDICATED CONDITION:

- o RB SUMP PUMP A OR B AUTO START AT 12".
- o RB SUMP PUMP A OR B TRIP.
- o RB SUMP LEVEL >18".
- o WASTE DISPOSAL PANEL FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RBS PUMP C/S GREEN LIGHT ON AND SWITCH IN NORM AFTER START.
- o HIGH SUMP LEVEL ON WD-222-LI.
- o HIGH SUMP WATER LEVEL ON BS-65-PR.

OPERATOR ACTION FOR A VALID ALARM:

- o IF PUMP AUTO START, OBSERVE LEVEL DECREASE.
- o IF PUMP TRIP, INVESTIGATE REASON FOR PUMP TRIP.
- o NOTIFY PRIMARY PLANT OPERATOR TO INVESTIGATE FAN FAILURE AT WASTE DISPOSAL PANEL, AND SELECT ALTERNATE FAN IF REQUIRED.

DISCUSSION:

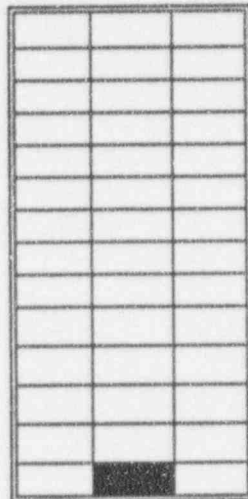
THIS ALARM SHOULD CLEAR WHEN AUTO PUMP SHUTDOWN OCCURS AT 2".

REFERENCES: DRAWING 208-060 SHEET WD-07, WD-134, WD-148

SENSING ELEMENT: WD-122-LS, LEVEL TRANSMITTER



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 0530

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO CIV-34 <80 PSIG AS SENSED BY CI-411-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- CIV-34 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO CIV-34.

DISCUSSION:

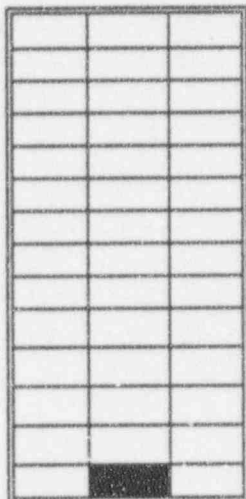
ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-077 SHEET CI-20

SENSING ELEMENT: CI-411-PS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 0531

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO CIV-35 <80 PSIG AS SENSED BY CI-412-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- CIV-35 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO CIV-35.

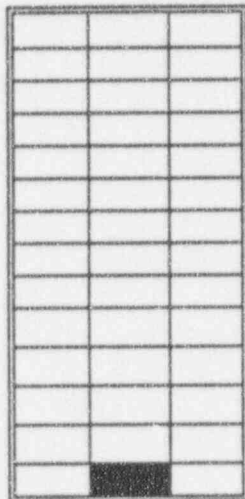
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-077 SHEET CI-21

SENSING ELEMENT: CI-412-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 0532

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO CIV-40 <80 PSIG AS SENSED BY CI-413-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- CIV-40 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO CIV-40.

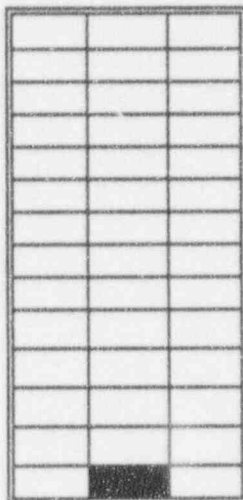
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-077 SHEET CI-22

SENSING ELEMENT: CI-413-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 0533

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO CIV-41 <80 PSIG AS SENSED BY CI-414-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- CIV-41 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO CIV-41.

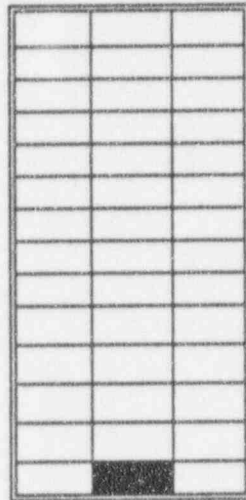
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-077 SHEET CI-23

SENSING ELEMENT: CI-414-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1855

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-12 <80 PSIG AS SENSED BY SWV-12-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-12 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-12.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

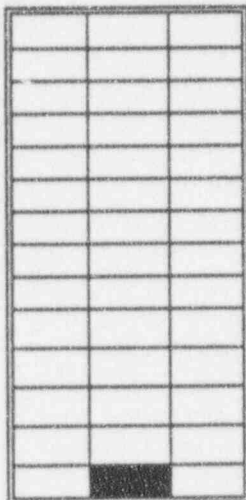
REFERENCES: DRAWING 208-056 SHEET SW-06

SENSING ELEMENT: SW-12-PS

ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1856

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-35 <80 PSIG AS SENSED BY SWV-35-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-35 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-35.

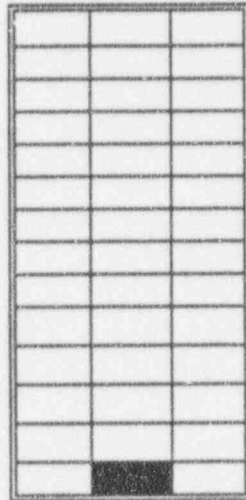
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-06

SENSING ELEMENT: SW-35-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1857

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-37 <80 PSIG AS SENSED BY SWV-37-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-37 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-37.

DISCUSSION:

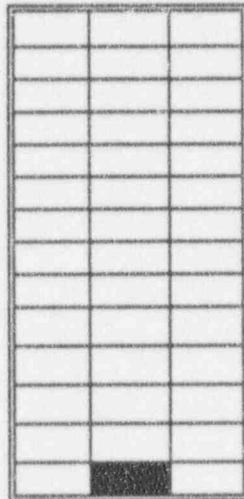
ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-07

SENSING ELEMENT: SW-37-PS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1858

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-39 <80 PSIG AS SENSED BY SWV-39-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-39 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-39.

DISCUSSION:

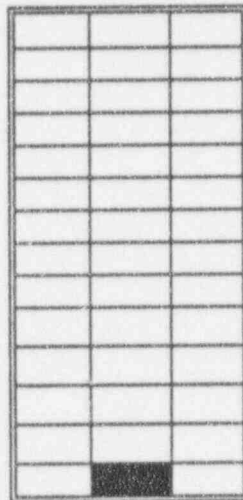
ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-07

SENSING ELEMENT: SW-39-PS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1859

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-41 <80 PSIG AS SENSED BY SWV-41-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-41 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-41.

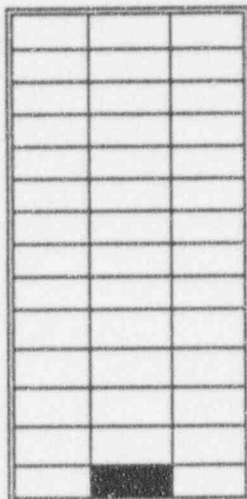
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-08

SENSING ELEMENT: SW-41-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1860

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-43 <80 PSIG AS SENSED BY SWV-43-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-43 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-43.

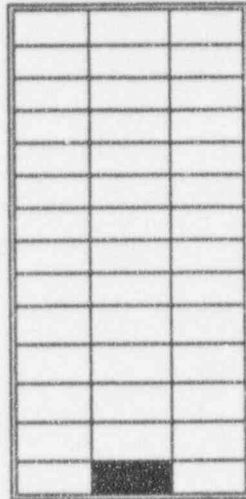
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-08

SENSING ELEMENT: SW-43-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1861

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-45 <80 PSIG AS SENSED BY SWV-45-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-45 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-45.

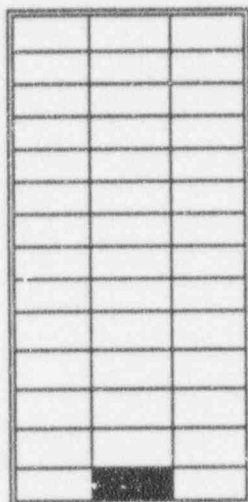
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-09

SENSING ELEMENT: SW-45-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1862

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-79 <80 PSIG AS SENSED BY SWV-79-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-79 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-79.

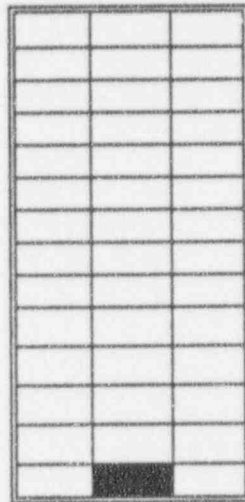
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-14

SENSING ELEMENT: SW-79-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1863

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-80 <80 PSIG AS SENSED BY SWV-80-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-80 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-80.

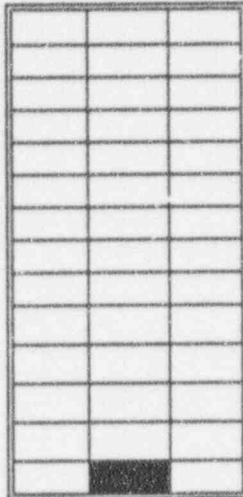
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-15

SENSING ELEMENT: SW-80-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1864

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-81 <80 PSIG AS SENSED BY SWV-81-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-81 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-81.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

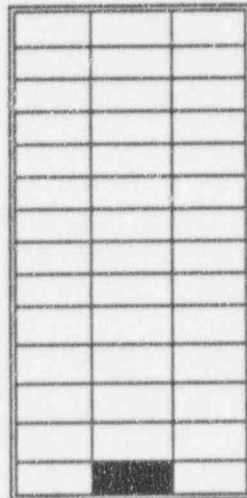
REFERENCES: DRAWING 208-056 SHEET SW-16

SENSING ELEMENT: SW-81-PS

ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1865

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-82 <80 PSIG AS SENSED BY SWV-82-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-82 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-82.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-17

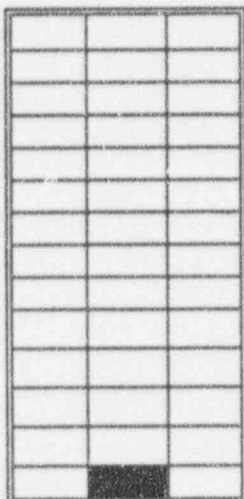
SENSING ELEMENT: SW-82-PS



ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1866

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-83 <80 PSIG AS SENSED BY SWV-83-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-83 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-83.

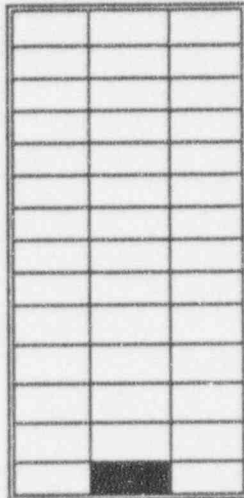
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-18

SENSING ELEMENT: SW-83-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1867

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-84 <80 PSIG AS SENSED BY SWV-84-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-84 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-84.

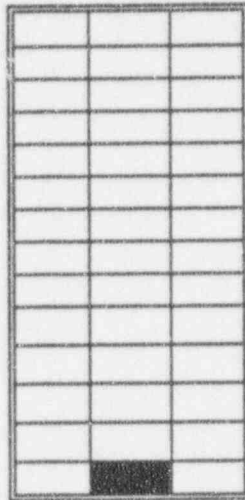
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-19

SENSING ELEMENT: SW-84-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1868

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-85 <80 PSIG AS SENSED BY SWV-85-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-85 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-85.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

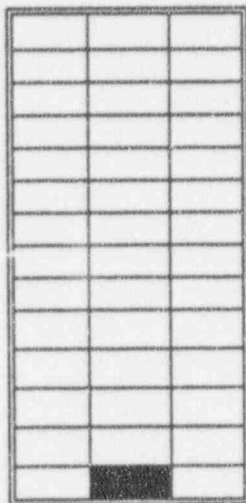
REFERENCES: DRAWING 208-056 SHEET SW-20

SENSING ELEMENT: SW-85-PS

ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1869

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-86 <80 PSIG AS SENSED BY SWV-8-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-86 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-86.

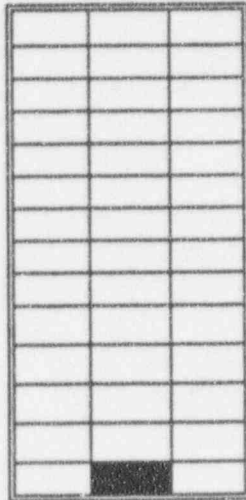
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-21

SENSING ELEMENT: SW-86-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

**EVENT POINT 1870**

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-109 <80 PSIG AS SENSED BY SWV-109-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-109 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-109.

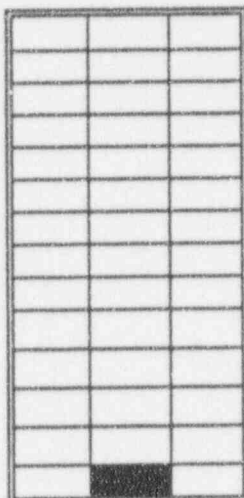
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-22

SENSING ELEMENT: SW-109-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1871

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-110 <80 PSIG AS SENSED BY SWV-110-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-110 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-110.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-23

SENSING ELEMENT: SW-110-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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[illegible]

SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1872

INDICATED CONDITION:

- 0 SUPPLY AIR PRESSURE TO SWV-353 <80 PSIG AS SENSED BY SWV-353-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INSTRUMENT AIR PRESSURE INDICATING LOW.
- o SWV-353 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- o REFER TO AP-470.
- o INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-353.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-24

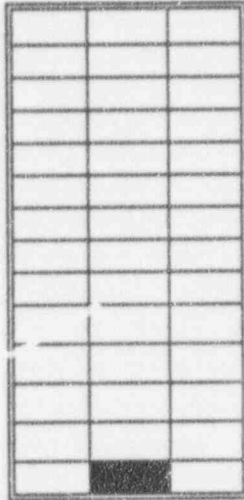
SENSING ELEMENT: SW-353-PS



ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1873

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-354 <80 PSIG AS SENSED BY SWV-354-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-354 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-354.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

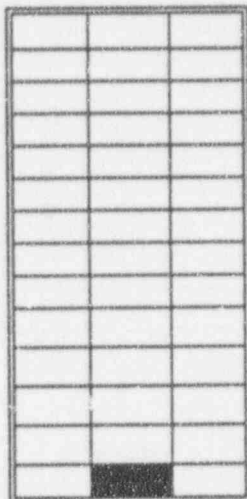
REFERENCES: DRAWING 208-056 SHEET SW-25

SENSING ELEMENT: SW-354-PS

ESAB-A ANNUNCIATOR RESPONSE

ESAB-A-02-14

C-02-14



SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1874

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-355 <80 PSIG AS SENSED BY SWV-355-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-355 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-355.

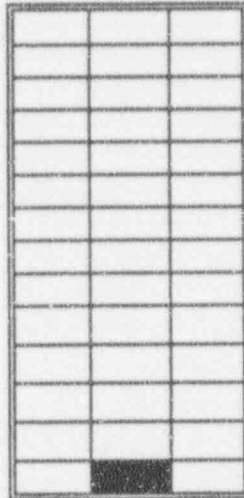
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-26

SENSING ELEMENT: SW-355-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1875

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-151 <80 PSIG AS SENSED BY SWV-151-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-151 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-151.

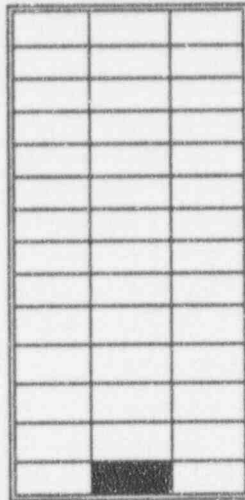
DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-29

SENSING ELEMENT: SW-151-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-02-14	C-02-14
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SW ISO VALVE  
AIR  
FAILURE

EVENT POINT 1876

INDICATED CONDITION:

- SUPPLY AIR PRESSURE TO SWV-152 <80 PSIG AS SENSED BY SWV-152-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INSTRUMENT AIR PRESSURE INDICATING LOW.
- SWV-152 VALVE POSITION INDICATING MID POSITION.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO AP-470.
- INVESTIGATE CAUSE OF LOW PRESSURE TO SWV-152.

DISCUSSION:

ENCLOSURE 1 OF AP-470 LISTS AIR OPERATED VALVES AND THEIR FAILED POSITION.

REFERENCES: DRAWING 208-056 SHEET SW-30

SENSING ELEMENT: SW-152-PS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-01	C-03-01
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[illegible]

RC-3  
HIGH PRESS  
BISTABLE TRIP

EVENT POINT 0939

INDICATED CONDITION:

- RCS PRESSURE <1500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-3 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #3 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- 0 REFER TO EOP

DISCUSSION:

THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 HPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESA-24

SENSING ELEMENT: BT-3 ES ACTUATION RELAY

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-02	C-03-02
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[illegible]

RC-6  
LOW PRESS  
BISTABLE TRIP

EVENT POINT 0926

INDICATED CONDITION:

- RCS PRESSURE <500 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHT RC-6 'BISTABLE TRIPPED' INDICATES BLUE.
- o ACTUATION CHANNEL CABINET #3 BISTABLE OUTPUT STATE LIGHT 'BRIGHT'.

OPERATOR ACTION FOR A VALID ALARM:

- REFER TO EOP

DISCUSSION:

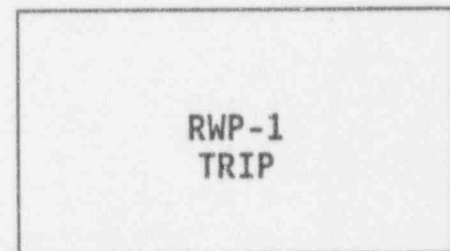
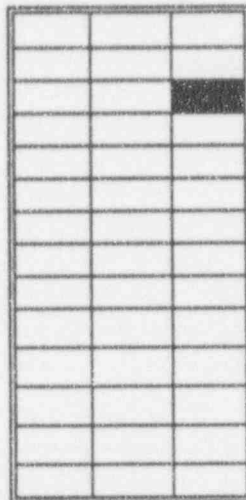
THIS ALARM INDICATES ONE CHANNEL TRIPPED IN A 2 OUT OF 3 LPI LOGIC.

REFERENCES: DRAWING 208-028 SHEET ESB-39

SENSING ELEMENT: BT-9 ES ACTUATION RELAY



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-03	C-03-03
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**EVENT POINT 0001**

**INDICATED CONDITION:**

- RWP-1 BREAKER IS OPEN WITH CONTROL HANDLE IN NORMAL AFTER START POSITION.

**REDUNDANT INDICATION WHICH WILL VERIFY ALARM:**

- GREEN LIGHT ON WITH A RED FLAG ON CONTROL STATION.
- RWP-2B AUTO START.
- RW-23-PI SW RW SUPPLY PRESSURE LOW.

**OPERATOR ACTION FOR A VALID ALARM:**

- ENSURE RWP-2B START.
- INVESTIGATE CAUSE OF PUMP TRIP.
- CHECK BREAKER FOR DROPPED RELAY TARGETS.

**DISCUSSION:**

RWP-2B STARTS ON DECREASING HEADER PRESSURE AT 7 PSIG.

**REFERENCES:** DRAWING 208-050 SHEET RW-01

**SENSING ELEMENT:** RWP-1 CONTROL SWITCH CONTACTS CS/SC, CS/O, RW-63-PS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-04	C-03-04
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[illegible]

SW RW PUMP  
MOTOR  
OVERLOAD

EVENT POINT 0002

INDICATED CONDITION:

- o RWP-1 MOTOR AMPS >115% RATED LOAD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH MOTOR AMPS.
- RW-23-PI SW RW SUPPLY PRESSURE LOW.

OPERATOR ACTION FOR A VALID ALARM:

- o START RWP-2A OR RWP-2B, SECURE RWP-1.
- o INVESTIGATE CAUSE OF OVERLOAD.

DISCUSSION:

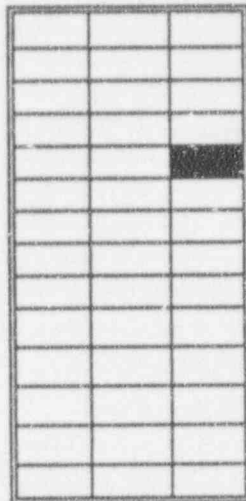
THIS ALARM INDICATES EITHER THE TIMED OVERCURRENT OR INSTANTANEOUS OVERCURRENT PROTECTIVE DEVICES HAVE ACTUATED. INSTANTANEOUS OVERCURRENT RELAY ACTUATION WILL TRIP THE BREAKER.

IT IS POSSIBLE TO HAVE THIS ALARM PRIOR TO THE BREAKER TRIP.

REFERENCES: DRAWING 208-050 SHEET RW-01

SENSING ELEMENT: 51 RELAY (INSIDE 4160V BREAKER CUBICLE)

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-05	C-03-05
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SW RW SYSTEM  
PRESS  
LOW

EVENT POINT 0007

INDICATED CONDITION:

- NUCLEAR SERVICES RAW WATER HEADER PRESS <7 PSIG AS SENSED BY RW-63-PS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RWP-2B AUTO START.
- POSSIBLE RW PUMP TRIP.

OPERATOR ACTION FOR A VALID ALARM:

- ENSURE RWP-2B AUTO START.
- INVESTIGATE CAUSE OF LOW PRESSURE.
- CHECK INTAKE AREA AND INTAKE SCREENS FOR OBSTRUCTIONS TO FLOW.
- CHECK FOR PROPER VALVE ALIGNMENT FOR RUNNING RW PUMP.

DISCUSSION:

REFERENCES: DRAWING 208-050 SHEET RW-03

SENSING ELEMENT: RW-63-PS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-06	C-03-06
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[illegible]

RWP AND  
SW RW PP  
RUNNING

EVENT POINT 0024

INDICATED CONDITION:

- o RWP-1 AND RWP-2A AND/OR RWP-2B RUNNING AT THE SAME TIME.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INDICATION OF MORE THAN ONE PUMP RUNNING.
- RW SYSTEM HEADER PRESSURE HIGH.
- RWP-2B AUTO START ALARM.

OPERATOR ACTION FOR A VALID ALARM:

- o SECURE RW PUMP(S) NOT REQUIRED.

DISCUSSION:

IF RWP-1 IS RUNNING WITH EITHER RWP-2A AND/OR RWP-2B, THEN RWP-1 WILL TRIP AFTER 15 SECONDS.

REFERENCES: DRAWING 208-050 SHEET RW-01

SENSING ELEMENT: 52S/A RELAY (RWP-1,RWP-2A,RWP-2B 4160V BREAKER CUBICLES)

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-07	C-03-07
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[illegible]

RW SW  
TEMP  
HIGH

EVENT POINT 0054

INDICATED CONDITION:

- RAW WATER SUPPLY TO SW HEAT EXCHANGERS TEMPERATURE IS  $>92^{\circ}$  F AS SENSED BY RW-19-TS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RW TEMPERATURE INDICATION RW-19-TI

OPERATOR ACTION FOR A VALID ALARM:

- NOTIFY AUXILIARY BUILDING OPERATOR TO SHUTDOWN RW PIT RECIRC BY FAILING CLOSED RWV-150 OR CLOSING RWV-149.
- ENSURE SW RW TEMPERATURE CONTROL SURVEILLANCE KEY SWITCH IS IN THE NORMAL POSITION.

DISCUSSION:

RWV-150 IS THE SW TEMPERATURE CONTROL VALVE AND RECIRCULATES "B" SIDE SW RW BACK TO THE "B" SIDE RW PIT AS NECESSARY TO MAINTAIN SW SYSTEM TEMPERATURE AT 85° F (WHEN GULF OF MEXICO/RAW WATER TEMPERATURE IS BELOW 80° F).

RWV-150 IS A SPRING CLOSE/AIR TO OPEN CONTROL VALVE AND FAILS CLOSED ON:  
LOSS OF DC POWER TO CONTROL VALVE SOLENOID, LOSS OF AIR SUPPLY PRESSURE,  
AND RWP-2B AUTO START, RWP-3B AUTO START.

REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 210-583, MAR 86-12-02-04

SENSING ELEMENT: RW-19-IS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-08	C-03-08
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[illegible]

BWST  
LEVEL  
HIGH/LOW

EVENT POINT 0157

INDICATED CONDITION:
◦ BWST LEVEL <45' AS SENSED BY DH-11-LS
REDUNDANT INDICATION WHICH WILL VERIFY ALARM:
◦ DH-7-LI ◦ DH-37-LI ◦ DH-7-LIR ◦ COMPUTER POINT X335
OPERATOR ACTION FOR A VALID ALARM:
◦ INVESTIGATE CAUSE OF DECREASING LEVEL.
DISCUSSION:
REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.
REFERENCES: DRAWING 208-021 SHEET DH-22
SENSING ELEMENT: DH-11-LS



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-08	C-03-08
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[illegible]

BWST  
LEVEL  
HIGH/LOW

EVENT POINT 0233

INDICATED CONDITION:

o BWST LEVEL >47' AS SENSED BY DH-11-LS.

- BWST LEVEL >47' AS SENSED BY DH-11-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DH-7-LI
- o DH-37-LI
- o DH-7-LIR
- o COMPUTER POINT X335

- o DH-7-LI
- o DH-37-LI
- o DH-7-LIR
- o COMPUTER POINT X335

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF INCREASING LEVEL.

- o INVESTIGATE CAUSE OF INCREASING LEVEL.

DISCUSSION:

REFERENCES: DRAWING 208-021 SHEET DH-22

SENSING ELEMENT: DH-11-LS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-08	C-03-08
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[illegible]

BWST  
LEVEL  
HIGH/LOW

EVENT POINT 0234

INDICATED CONDITION:

- BWST LEVEL <25' AS SENSED BY DH-7-LS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DH-7-LI
- o DH-37-LI
- o DH-7-LIR
- o COMPUTER POINT X335

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF DECREASING LEVEL.
- ALIGN ONLY ONE MUP PER BWST SUCTION. REFER TO DIRECT'NG EMERGENCY/ABNORMAL OPERATING PROCEDURE.

DISCUSSION:

REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-021 SHEET DH-24

SENSING ELEMENT: DH-7-LS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-08	C-03-08
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[illegible]

BWST  
LEVEL  
HIGH/LOW

EVENT POINT 0235

INDICATED CONDITION:

- BWST LEVEL <2' 3-3/8" AS SENSED BY DH-7-LS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DH-7-LI
- o DH-37-LI
- o DH-7-LIR
- o COMPUTER POINT X335

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF DECREASING LEVEL.
- o REFER TO OP-402 AND OP-404 FOR STEPS NECESSARY TO PRECLUDE DAMAGE TO MU AND DH SYSTEMS PUMPS DUE TO INADEQUATE NPSH.

### DISCUSSION:

REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-021 SHEET DH-24

SENSING ELEMENT: DH-7-LS1

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-09	C-03-09
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[illegible]

BWST  
TEMP  
HIGH/LOW

EVENT POINT 0236

INDICATED CONDITION:
o BWST TEMPERATURE >110°F AS SENSED BY DH-9-TTS.
REDUNDANT INDICATION WHICH WILL VERIFY ALARM:
o DH-10-TI o DH-9-TI o COMPUTER POINT X336
OPERATOR ACTION FOR A VALID ALARM:
o INVESTIGATE CAUSE OF INCREASING TEMPERATURE. o ENSURE BWST HEATER(S) NOT IN OPERATION.
DISCUSSION:
REFERENCES: DRAWING 208-021 SHEET DH-22
SENSING ELEMENT: DH-9-TTS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-09	C-03-09
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[illegible]

BWST  
TEMP  
HIGH/LOW

EVENT POINT 0237

INDICATED CONDITION:

- BWST TEMPERATURE < 60°F AS SENSED BY DH-10-TTS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DH-10-TI
- o DH-9-TI
- o COMPUTER POINT X336

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF DECREASING TEMPERATURE.
- ENSURE BWST HEATER(S) IN OPERATION.

DISCUSSION:

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-021 SHEET DH-22

SENSING ELEMENT: DH-10-TTS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-11	C-03-11
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[illegible]

DH TO PZR  
SPRAY VALVE  
OPEN

EVENT POINT 0240

INDICATED CONDITION:

- o DHV-91 NOT FULL CLOSED AND RCS PRESSURE >284 PSIG AS SENSED BY RC-3A-PS7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DHV-91 VALVE POSITION INDICATION.
- RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF INCREASING PRESSURE.
- o CLOSE DHV-91 IF RCS PRESSURE >284 PSIG.

### DISCUSSION:

REFERENCES: DRAWING 208-021 SHEET DH-16

SENSING ELEMENT: RC-3A-PS7



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-11	C-03-11
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[illegible]

DH TO PZR  
SPRAY VALVE  
OPEN

EVENT POINT 1316

INDICATED CONDITION:

- o RCV-53 NOT FULL CLOSED AND RCS PRESSURE >200 PSIG AS SENSED BY RC-3A-PS7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RCV-53 VALVE POSITION INDICATION.
- RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

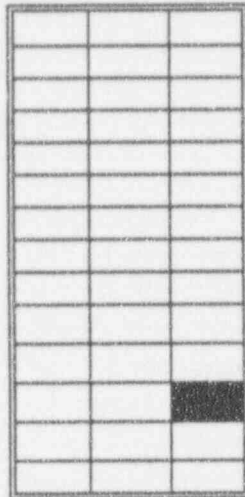
- o INVESTIGATE CAUSE OF INCREASING PRESSURE.
- o CLOSE RCV-53 IF RCS PRESSURE >200 PSIG.

### DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-16

SENSING ELEMENT: RC-3A-PS7

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-12	C-03-12
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DH VALVE  
ACI SYSTEM  
TROUBLE

EVENT POINT 1233

INDICATED CONDITION:

- ACI SUBSYSTEM 1 OR 2 BYPASS KEY IN BYPASS POSITION.
- ACI SUBSYSTEM 1 OR 2 MODULE REMOVED.
- DHV-3 OR DHV-4 NOT FULL CLOSED AND RCS PRESSURE >284 PSIG.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DHV-3 VALVE POSITION INDICATION.
- DHV-4 VALVE POSITION INDICATION.
- RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE CAUSE OF INCREASING PRESSURE.
- CLOSE DHV-3 AND/OR DHV-4 IF RCS PRESSURE >284 PSIG.

DISCUSSION:

- DHV-3 ACI USES RC-147-PT FOR RCS PRESSURE AND CAN BE SEEN ON THE REMOTE SHUTDOWN PANEL.
- DHV-4 ACI USES RC-132-PT FOR RCS PRESSURE AND CAN BE SEEN IN ES CABINET #3.

REFERENCES: DRAWING 208-028 SHEET ESAB-6

SENSING ELEMENT: BT-13,BT-14 ES ACTUATION RELAYS

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-13	C-03-13
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[illegible]

DH DROPLINE  
VALVES  
OPEN

EVENT POINT 0214

INDICATED CONDITION:

- o DHV-3 NOT CLOSED AND RCS PRESSURE >200 PSIG AS SENSED BY 3RC-3A-PS8.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DHV-3 VALVE POSITION INDICATION.
- o RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- CLOSE DHV-3 IF RCS PRESSURE >284 PSIG.

DISCUSSION:

REFERENCES: DRAWING 208-021 SHEET DH-03

SENSING ELEMENT: 3RC-3A-PS8

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-13	C-03-13
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[illegible]

DH DROP LINE  
VALVES  
OPEN

EVENT POINT 0215

INDICATED CONDITION:

- o DHV-4 NOT CLOSED AND RCS PRESSURE >200 PSIG AS SENSED BY 3RC-3A-PS9.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DHV-4 VALVE POSITION INDICATION.
- RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- o CLOSE DHV-4 IF RCS PRESSURE >284 PSIG.

DISCUSSION:

REFERENCES: DRAWING 208-021 SHEET DH-04

SENSING ELEMENT: 3RC-3A-PS9

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-13	C-03-13
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[illegible]

DH DROP LINE  
VALVES  
OPEN

EVENT POINT 0216

INDICATED CONDITION:

- o DHV-41 NOT CLOSED AND RCS PRESSURE >200 PSIG AS SENSED BY 3RC-3A-PS4.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DHV-41 VALVE POSITION INDICATION.
- RCS PRESSURE INDICATION.

OPERATOR ACTION FOR A VALID ALARM:

- o CLOSE DHV-41 IF RCS PRESSURE >284 PSIG.

DISCUSSION:

REFERENCES: DRAWING 208-021 SHEET DH-13

SENSING ELEMENT: 3RC-3A-PS4

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-14	C-03-14
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[illegible]

## SEISMIC SYSTEM TROUBLE

EVENT POINT 1709

INDICATED CONDITION:

- 0 SEISMIC EVENT OCCURRED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INDICATION AT SEISMIC PANEL.
- NOTIFICATION OF SEISMIC EVENT.

OPERATOR ACTION FOR A VALID ALARM:

- o CHECK SEISMIC PANEL FOR CAUSE OF ALARM.
- o REFER TO AP-961.

DISCUSSION:

I&C SHOP PERFORMS ALL SURVEILLANCE PROCEDURES AND MAGNETIC TAPE REPLACEMENT WHEN REQUIRED.

#### REFERENCES:

SENSING ELEMENT: SEISMIC INSTRUMENT PANEL.



ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-14	C-03-14
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[illegible]

## SEISMIC SYSTEM TROUBLE

EVENT POINT 1710

INDICATED CONDITION:

- o SEISMIC PANEL LOSS OF POWER

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATION AT SEISMIC PANEL.

OPERATOR ACTION FOR A VALID ALARM:

- INVESTIGATE SEISMIC PANEL FOR CAUSE OF LOSS OF POWER ALARM.
- REFER TO OP-700C.

DISCUSSION:

POWER SUPPLY IS ACDP-52 BREAKER 31

#### REFERENCES:

SENSING ELEMENT: SEISMIC INSTRUMENT PANEL.

ESAB-A ANNUNCIATOR RESPONSE	ESAB-A-03-14	C-03-14
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[illegible]

## SEISMIC SYSTEM TROUBLE

EVENT POINT 1711

INDICATED CONDITION:

- 0 SEISMIC RECORDER END OF TAPE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATION AT SEISMIC PANEL.

OPERATOR ACTION FOR A VALID ALARM:

- o INVESTIGATE SEISMIC PANEL RECORDER, IF AT THE END OF TAPE, GENERATE A WORK REQUEST TO REPLACE MAGNETIC TAPE(S).

DISCUSSION:

I&C SHOP PERFORMS ALL SURVEILLANCE PROCEDURES AND MAGNETIC TAPE REPLACEMENT WHEN REQUIRED.

#### REFERENCES:

SENSING ELEMENT: SEISMIC INSTRUMENT PANEL.