

Effective Date 7/7/97

INFORMATION ONLY

ANNUNCIATOR RESPONSE

AR-304

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ESD ANNUNCIATOR RESPONSE

APPROVED BY: Interpretation Contact

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DATE: 7/7/97

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1.0 PURPOSE

- 1.1 Establish a reference document for each Annunciator Window on the ES (B)-JH1 Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ES (B)-JH1 Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ES(B)-JH1 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

- 2.1.1 EOP, Emergency Operating Procedure
- 2.1.2 OP-404, Decay Heat Removal System
- 2.1.3 OP-703, Plant Distribution System
- 2.1.4 AP-880, Fire Protection

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 ES(B)-JH1 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-01	D-01-01
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**HPI
ES B
ACTUATION**

EVENT POINT 0923

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o HPI ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE <1500 PSIG o RCS PRESSURE <500 PSIG o RB PRESSURE >4 PSIG o MANUAL ACTUATION OF HPI o ES STATUS LIGHTS FOR AFFECTED CHANNELS CHANGE STATE
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES HPI HAS ACTUATED, OR SHOULD HAVE ACTUATED BY EITHER 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4 PSIG REACTOR BUILDING PRESSURE. UPON RECEIPT OF THIS ALARM ES SHOULD BLOCK LOAD.</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-31</p>
<p>SENSING ELEMENT: 63-Z1A/RC-1,RC-2,/RC-3, ES ACTUATION RELAYS</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-02	D-01-02
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LOAD SEQUENCE
BLOCK 2
ACTUATION B

EVENT POINT 1023

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOADING SEQUENCE BLOCK 2 ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o ES CHANNEL STATUS INDICATION o LOSS OF POWER TO AN ES ACTUATION CHANNEL CABINET o FAILURE OF AN ES CHANNEL SENSING ELEMENT o ES CHANNEL TESTING IN PROGRESS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>HPI HAS ACTUATED EITHER BY 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4# RB PRESSURE AND ES EQUIPMENT STARTS OR ONLY ONE OF THE HPI ACTUATION RELAYS HAS ACTUATED, AN ES CABINET HAS LOST POWER OR A SENSING ELEMENT HAS FAILED AND ES EQUIPMENT IS NOT STARTING</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-25</p>
<p>SENSING ELEMENT: 62X1/RC-1, RC-2, RC-3, ES ACTUATION RELAYS</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-03	D-01-03
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LOAD SEQUENCE
BLOCK 3
ACTUATION B

EVENT POINT 1025

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOADING SEQUENCE BLOCK 3 ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o ES CHANNEL STATUS INDICATION o LOSS OF POWER TO AN ES ACTUATION CHANNEL CABINET o FAILURE OF AN ES CHANNEL SENSING ELEMENT o ES CHANNEL TESTING IN PROGRESS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>HPI HAS ACTUATED EITHER BY 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4# RB PRESSURE AND ES EQUIPMENT STARTS OR ONLY ONE OF THE HPI ACTUATION RELAYS HAS ACTUATED, AN ES CABINET HAS LOST POWER OR A SENSING ELEMENT HAS FAILED AND ES EQUIPMENT IS NOT STARTING</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-25</p>
<p>SENSING ELEMENT: 62X2B/RC-1, RC-2, RC-3 ES ACTUATION RELAY</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-04	D-01-04
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LOAD SEQUENCE
BLOCK 4
ACTUATION B

EVENT POINT 1026

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOADING SEQUENCE BLOCK 4 ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o ES CHANNEL STATUS INDICATION o LOSS OF POWER TO AN ES ACTUATION CHANNEL CABINET o FAILURE OF AN ES CHANNEL SENSING ELEMENT o ES CHANNEL TESTING IN PROGRESS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>HPI HAS ACTUATED EITHER BY 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4# RB PRESSURE AND ES EQUIPMENT STARTS OR ONLY ONE OF THE HPI ACTUATION RELAYS HAS ACTUATED, AN ES CABINET HAS LOST POWER OR A SENSING ELEMENT HAS FAILED AND ES EQUIPMENT IS NOT STARTING TO RESET A BLOCK 4 ACTUATION THE HPI SEAL-IN RESET PUSH-BUTTON MUST BE DEPRESSED.</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-25</p>
<p>SENSING ELEMENT: 62X3/RC-1, RC-2, RC-3 ES ACTUATION RELAYS</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-05	D-01-05
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LOAD SEQUENCE
BLOCK 5
ACTUATION B

EVENT POINT 0853

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOADING SEQUENCE BLOCK 5 ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o ES CHANNEL STATUS INDICATION o LOSS OF POWER TO AN ES ACTUATION CHANNEL CABINET o FAILURE OF AN ES CHANNEL SENSING ELEMENT o ES CHANNEL TESTING IN PROGRESS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>HPI HAS ACTUATED EITHER BY 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4# RB PRESSURE AND ES EQUIPMENT STARTS OR ONLY ONE OF THE HPI ACTUATION RELAYS HAS ACTUATED, AN ES CABINET HAS LOST POWER OR A SENSING ELEMENT HAS FAILED AND ES EQUIPMENT IS NOT STARTING</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-25</p>
<p>SENSING ELEMENT: 62X4/RC1, 62X4/RC2, 62X4/RC3</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-01-06	D-01-06
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**LOAD SEQUENCE
BLOCK 6
ACTUATION B**

EVENT POINT 1019

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOADING SEQUENCE BLOCK 6 ACTUATION "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o ES CHANNEL STATUS INDICATION o LOSS OF POWER TO AN ES ACTUATION CHANNEL CABINET o FAILURE OF AN ES CHANNEL SENSING ELEMENT o ES CHANNEL TESTING IN PROGRESS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>HPI HAS ACTUATED EITHER BY 2 OUT OF 3 HPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM LPI OR 4# RB PRESSURE AND ES EQUIPMENT STARTS OR ONLY ONE OF THE HPI ACTUATION RELAYS HAS ACTUATED, AN ES CABINET HAS LOST POWER OR A SENSING ELEMENT HAS FAILED AND ES EQUIPMENT IS NOT STARTING TO RESET A BLOCK 6 ACTUATION THE HPI SEAL-IN RESET PUSH-BUTTON MUST BE DEPRESSED.</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-25</p>
<p>SENSING ELEMENT: 62X5 ES ACTUATION RELAY</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-01	D-02-01
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**DIVERSE
CONTAINMENT
ISOLATION B**

EVENT POINT 1114

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o PARTIAL CONTAINMENT ISOLATION "B" 																					
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o AUTOMATIC ACTUATION HPI "B" 																					
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP 																					
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES A PARTIAL CONTAINMENT ISOLATION HAS OCCURRED. THE FOLLOWING VALVES SHOULD CLOSE:</p> <table style="width: 100%; border: none;"> <tr> <td>LRV-71</td> <td>LRV-73</td> <td>CAV-2</td> <td>CAV-6</td> <td>CAV-7</td> <td>CAV-431</td> <td>CFV-25</td> </tr> <tr> <td>CFV-26</td> <td>CFV-27</td> <td>CFV-28</td> <td>CFV-29</td> <td>CFV-42</td> <td>MUV-49</td> <td>MSV-130</td> </tr> <tr> <td>MSV-148</td> <td>WDV-4</td> <td>WDV-61</td> <td>WDV-62</td> <td>WDV-405</td> <td>DWV-160</td> <td>MUV-27</td> </tr> </table>	LRV-71	LRV-73	CAV-2	CAV-6	CAV-7	CAV-431	CFV-25	CFV-26	CFV-27	CFV-28	CFV-29	CFV-42	MUV-49	MSV-130	MSV-148	WDV-4	WDV-61	WDV-62	WDV-405	DWV-160	MUV-27
LRV-71	LRV-73	CAV-2	CAV-6	CAV-7	CAV-431	CFV-25															
CFV-26	CFV-27	CFV-28	CFV-29	CFV-42	MUV-49	MSV-130															
MSV-148	WDV-4	WDV-61	WDV-62	WDV-405	DWV-160	MUV-27															
<p>REFERENCES: DRAWING 208-028 SHEET ESB-55</p>																					
<p>SENSING ELEMENT: 63Z-4B ES ACTUATION RELAY</p>																					

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-02	D-02-02
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**HPI B
FLOW
HIGH/LOW**

EVENT POINT 1069

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOOP B1 HPI FLOW IS >263 GPM AS SENSED BY MU-23-FS1
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o HPI WIDE RANGE FLOW METER, MU-23-FI1
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP-13 FOR HPI THROTTLING REQUIREMENTS o THROTTLE MUV-25 AS REQUIRED
<p>DISCUSSION:</p> <p>RUNOUT CONDITIONS FOR A MAKEUP PUMP MAY BE VERIFIED BY OBSERVING MAKE UP PUMP CURRENT INDICATION FOR FLUCTUATIONS. ALSO FLOW OSCILLATIONS MAY OCCUR DURING HIGH FLOW CONDITIONS. IF ANY OF THESE SYMPTOMS ARE EVIDENT ON OPERATING MAKE UP PUMPS CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE MAKE UP PUMP.</p>
<p>REFERENCES: DRAWING 208-041 SHEET MU-047</p>
<p>SENSING ELEMENT: MU-23-FS1</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-02	D-02-02
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HPI B
FLOW
HIGH/LOW

EVENT POINT 1070

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOOP B2 HPI FLOW IS >263 GPM AS SENSED BY MU-23-FS3
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o HPI WIDE RANGE FLOW METER, MU-23-FI3
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP-13 FOR HPI THROTTLING REQUIREMENTS o THROTTLE MUV-26 AS REQUIRED
<p>DISCUSSION:</p> <p>RUNOUT CONDITIONS FOR A MAKEUP PUMP MAY BE VERIFIED BY OBSERVING MAKE UP PUMP CURRENT INDICATION FOR FLUCTUATIONS. ALSO FLOW OSCILLATIONS MAY OCCUR DURING HIGH FLOW CONDITIONS. IF ANY OF THESE SYMPTOMS ARE EVIDENT ON OPERATING MAKE UP PUMPS CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE MAKE UP PUMP.</p>
<p>REFERENCES: DRAWING 208-041 SHEET MU-047</p>
<p>SENSING ELEMENT: MU-23-FS3</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-02	D-02-02
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HPI B
FLOW
HIGH/LOW

EVENT POINT 1073

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOOP B1 HPI FLOW IS <75 GPM AS SENSED BY MU-23-FS1 COINCIDENT WITH A HPI ACTUATION SIGNAL
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o HPI LOW RANGE FLOW METER, MU-23-FI5-1
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP-13 FOR HPI THROTTLING REQUIREMENTS o VERIFY PROPER MAKE UP PUMP OPERATION o ENSURE EITHER, >200 GPM TOTAL HPI FLOW PER RUNNING MAKEUP PUMP OR BOTH MAKE UP PUMP RECIRC VALVES, MUV-53 AND MUV-257 ARE OPEN.
<p>DISCUSSION:</p> <p>LOW FLOW CONDITIONS FOR AN OPERATING MAKE UP PUMP CAN RESULT IN MAKE UP PUMP DAMAGE. DURING PERIODS OF LOW FLOW THE MAKE UP PUMP RECIRC VALVES MUST BE OPEN.</p>
<p>REFERENCES: DRAWING 208-041 SHEET MU-047</p>
<p>SENSING ELEMENT: MU-23-FS1</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-02	D-02-02
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HPI B
FLOW
HIGH/LOW

EVENT POINT 1074

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOOP B2 HPI FLOW IS <75 GPM AS SENSED BY MU-23-FS3 COINCIDENT WITH A HPI ACTUATION SIGNAL
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o HPI LOW RANGE FLOW METER, MU-23-FI7-1
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP-13 FOR HPI THROTTLING REQUIREMENTS o VERIFY PROPER MAKE UP PUMP OPERATION o ENSURE EITHER, >200 GPM TOTAL HPI FLOW PER RUNNING MAKEUP PUMP OR BOTH MAKE UP PUMP RECIRC VALVES, MUV-53 AND MUV-257 ARE OPEN.
<p>DISCUSSION:</p> <p>LOW FLOW CONDITIONS FOR AN OPERATING MAKE UP PUMP CAN RESULT IN MAKE UP PUMP DAMAGE. DURING PERIODS OF LOW FLOW THE MAKE UP PUMP RECIRC VALVES MUST BE OPEN.</p>
<p>REFERENCES: DRAWING 208-041 SHEET MU-047</p>
<p>SENSING ELEMENT: MU-23-FS3</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-03	D-02-03
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LPI
(DHV-6)
OPEN

EVENT POINT 0218

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o DHV-6 NOT FULL CLOSED AND RCS PRESSURE >200 PSIG AS SENS'D BY RC-3A-PS4
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o DHV-6 INDICATIONo RCS PRESSURE INDICATION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o REFER TO EOP-08 IF ON LPI.o IF ON DECAY HEAT REMOVAL THEN ENSURE PROPER DH FLOW PATH.o REFER TO OP-404 FOR MINIMUM FLOW LIMITATIONS.
<p>DISCUSSION:</p> <p>THIS ALARM MAY INDICATE THE ACI SETPOINT IS BEING APPROACHED (ABOUT 250#) IF THIS IS OCCURRING THEN THE OPERATOR SHOULD REDUCE RCS PRESSURE. CARE SHOULD BE TAKEN AS TO NOT OVERPRESSURIZE THE DECAY HEAT SYSTEM. WHILE ON LPI THIS ALARM WOULD INDICATE A LOW FLOW CONDITION ON THE OPERATING DECAY HEAT PUMP.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-06</p>
<p>SENSING ELEMENT: RC-3A-PS4 AND 33 AC (CLOSED LIMIT SWITCH FOR DHV-6)</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-04	D-02-04
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LPI B
FLOW
HIGH/LOW

EVENT POINT 0228

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o DHP-1A FLOW >3750 GPM AS SENSED BY DH-1-FS2
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o DECAY HEAT FLOW INDICATOR, DH-1-FI-2 INDICATES HIGH FLOW
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o REFER TO OP-404 FOR MAXIMUM DECAY HEAT FLOW LIMITATIONSo VERIFY PROPER OPERATION OF DHV-111, "B" DECAY HEAT CONTROL VALVE.o REDUCE FLOW BY EITHER THROTTLING DHV-111 OR DHV-6, CLOSED.
<p>DISCUSSION:</p> <p>THIS ALARM MAY INDICATE THE DECAY HEAT PUMP IS EXCEEDING ITS MAXIMUM FLOW. IF THIS OCCURS PUMP DAMAGE MAY RESULT FROM CAVITATION INDUCED BY PUMP RUNOUT. IF INDICATIONS OF CAVITATION EXIST THEN CONSIDERATION SHOULD BE GIVEN TO SECURING THE DECAY HEAT PUMP.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-24</p>
<p>SENSING ELEMENT: DH-1-FS2</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-04	D-02-04
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LPI B
FLOW
HIGH/LOW

EVENT POINT 0230

INDICATED CONDITION: <ul style="list-style-type: none"> o DHP-1B FLOW <2800 GPM AS SENSED BY DH-1-FS2 FOR >5 SEC COINCIDENT WITH LPI ACTUATION "B"
REDUNDANT INDICATION WHICH WILL VERIFY ALARM: <ul style="list-style-type: none"> o DECAY HEAT FLOW INDICATOR, DH-1-FI2 INDICATES LOW FLOW
OPERATOR ACTIONS FOR A VALID ALARM: <ul style="list-style-type: none"> o REFER TO EOP o VERIFY PROPER OPERATION OF DHP-1B o VERIFY PROPER OPERATION OF DHV-111, "B" DECAY HEAT CONTROL VALVE. o INCREASE FLOW BY EITHER THROTTLING DHV-111 OR DHV-6, OPEN.
DISCUSSION:
REFERENCES: DRAWING 208-021 SHEET DH-24
SENSING ELEMENT: DH-1-FS2

ESD ANNUNCIATOR RESPONSE	ESD-JH1-02-06	D-02-06
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**ES B
ACTUATION
NOT RESET**

EVENT POINT 0928

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o RCS PRESSURE >1640 PSIG AND HPI NOT RESET o RCS PRESSURE >750 PSIG AND LPI NOT RESET
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE INDICATION o ES STATUS LIGHTS INDICATE ES NOT RESET
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o IF DIRECTED BY AN APPROVED PROCEDURE AND WITH THE CONCURRENCE OF THE NSS/ANSS, THEN RESET HPI AND/OR LPI AS REQUIRED.
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES THE ES SYSTEMS ARE STILL BYPASSED AND RCS PRESSURE IS INCREASING. IF HPI/LPI RC PRESSURE BI-STABLES ARE NOT RESET PRIOR TO EXCEEDING 1750 PSIG (HPI) OR 900 PSIG (LPI), HPI AND LPI WILL ACTUATE WHEN THE ACTUATION CIRCUIT BYPASS BI-STABLE AUTOMATICALLY RESETS AND REMOVES THE CHANNEL FROM BYPASS.</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESAB-06</p>
<p>SENSING ELEMENT: RC-3A-PS5, RC-3A-PS6</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-01	D-03-01
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LPI
ES B
ACTUATION

EVENT POINT 0924

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o RCS PRESSURE IS <500 PSIG o REACTOR BUILDING PRESSURE >4 PSIG o MANUAL ACTUATION OF LPI "B"
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE INDICATION o RB PRESSURE INDICATION o ES STATUS LIGHTS FOR AFFECTED CHANNELS CHANGE STATE
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES LPI HAS ACTUATED OR SHOULD HAVE ACTUATED BY EITHER 2 OUT OF 3 LPI BI-STABLES TRIPPED OR BY THE CASCADE ACTUATION FROM 4 PSIG REACTOR BUILDING PRESSURE OR THAT A MANUAL LPI ACTUATION HAS OCCURRED.</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-42</p>
<p>SENSING ELEMENT: 63Z3 ES ACTUATION RELAY</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-02	D-03-02
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DH PUMP B
TRIP

EVENT POINT 0220

INDICATED CONDITION:

- o DHP-1B BREAKER IS OPEN WITH THE CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN INDICATOR LIGHT IS ON WITH A RED FLAG ON DHP-1B CONTROL STATION
- o AMBER ES STATUS LIGHT FOR DHP-1B

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO EOP-11, LOSS OF DECAY HEAT REMOVAL
- o PLACE "A" DECAY HEAT TRAIN IN SERVICE PER OP-404
- o INVESTIGATE CAUSE OF PUMP TRIP

DISCUSSION:

IF CAUSE OF PUMP TRIP IS NOT APPARENT CARE SHOULD BE EXERCISED IN STARTING DHP-1A PUMP. SUCTION AND DISCHARGE FLOW PATHS SHOULD BE VERIFIED PRIOR TO ALTERNATE DECAY HEAT TRAIN STARTUP.

REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-021 SHEET ESB-42

SENSING ELEMENT: DHP-1B CONTROL SWITCH CONTACTS CS/SC AND CS/O

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-03	D-03-03
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**DH PUMP B
MOTOR
OVERLOAD**

EVENT POINT 0224

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DHP-1B MOTOR AMPS >115% RATED LOAD
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o DHP-1B HIGH MOTOR AMPS o DHP-1B TRIPS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REDUCE DHP-1B LOAD BY THROTTLING DHV-111 OR DHV-6 o IF LOAD REMAINS HIGH ON DHP-1B CONSIDER ALTERNATING DECAY HEAT TRAINS PER OP-404 o HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES THAT EITHER THE TIMED OVERCURRENT OR INSTANTANEOUS OVERCURRENT PROTECTIVE DEVICES HAVE ACTUATED. INSTANTANEOUS OVERCURRENT PROTECTIVE RELAY ACTUATION WILL TRIP THE BREAKER.</p> <p>IT IS POSSIBLE TO HAVE THIS ALARM PRIOR TO THE BREAKER TRIP.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-02</p>
<p>SENSING ELEMENT: DHP-1B OVERCURRENT DEVICES (51 IOC OR 51 TOC)</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-04	D-03-04
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DH PUMP B
OUT OF SERVICE

EVENT POINT 0222

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DHP-1B BREAKER IS RACKED OUT
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o NO INDICATING LIGHTS ON CONTROL STATION o NO ES STATUS INDICATION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o INVESTIGATE THE CAUSE FOR BREAKER BEING RACKED OUT
<p>DISCUSSION:</p> <p>ADDRESS TS REQUIREMENTS CONCERNING THIS CONDITION</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-02</p>
<p>SENSING ELEMENT: DHP-1B BREAKER RELAY (52 H)</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-04	D-03-04
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DH PUMP B
OUT OF SERVICE

EVENT POINT 0243

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o DHP-1B BREAKER HAS NO DC CONTROL POWER.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o NO INDICATING LIGHTS ON DHP-1B CONTROL STATIONo ES STATUS LIGHTS INDICATE BREAKER POSITION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o VERIFY CLOSED DPDP-5B SWITCH 10o VERIFY DC KNIFE SWITCH FOR DHP-1B IS CLOSED
<p>DISCUSSION:</p> <p>THIS CONDITION DISABLES REMOTE BREAKER OPERATION AND PROTECTIVE RELAYING. REFER TO OP-703 FOR INSTRUCTIONS ON LOCAL BREAKER OPERATION.</p> <p>REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-02</p>
<p>SENSING ELEMENT: DHP-1B BREAKER RELAY (27C)</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-05	D-03-05
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DH PUMP B
SUCTION TEMP
HIGH

EVENT POINT 0232

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o DHP-1B SUCTION TEMP IS >280°F AS SENSED BY DH-6-TS2
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o DHP-1B SUCTION TEMP. INDICATOR, DH-6-TI2 INDICATES HIGH
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o VERIFY PROPER "B" DC SYSTEM OPERATION BY CHECKING DC SURGE TANK LEVEL, DC PUMP RUNNING AND DC CONTROL VALVES SETPOINT NORMAL.o VERIFY PROPER DC RAW WATER OPERATION BY CHECKING RWP-3B RUNNING, RWP-3B DISCHARGE PRESSURE GOOD AND DC RAW WATER TEMP NORMALo INCREASE DC COOLING TO THE DC HEAT EXCHANGER BY INCREASING SETPOINTo IF RCS TEMPERATURE CONTINUES TO RISE CONSIDER ALTERNATING DECAY HEAT TRAINS PER OP-404.
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES A LOSS OF COOLING TO THE RCS IS OCCURRING. CORE COOLING MUST BE REGAINED AS SOON AS POSSIBLE.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-24</p>
<p>SENSING ELEMENT: DH-6-TS2</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-03-06	D-03-06
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DH PUMP B
FLOW
LOW

EVENT POINT 0226

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DHP-1B FLOW RATE <1500 GPM AS SENSED BY DH-1-FS4 WITH THE DHP-1B CONTROL HANDLE IN NORMAL AFTER START. OR o DHP-1B RUNNING AND MOTOR AMPERAGE IS BELOW THE OPERATOR ADJUSTED SETPOINT.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o DECAY HEAT FLOW INDICATOR, DH-1-FI2 INDICATES LOW FLOW o DHP-1B CONTROL STATION AMP METER
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o INCREASE DHP-1B FLOW BY THROTTLING OPEN DHV-111 OR DHV-6 o REFER TO OP-404 CONCERNING DECAY HEAT PUMP LOW FLOW OPERATION. o READJUST DHP-1B AMP MONITOR, DH-57-IR, LOCATED INSIDE MCB ON HVC SECTION, IF NECESSARY PER OP-404 o IF DH FLOW CANNOT BE RECOVERED THEN CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404.
<p>DISCUSSION:</p> <p>OPERATION AT LOW FLOW RATES MAY REDUCE DH PUMP LIFE, AND SHOULD BE AVOIDED.</p> <p>DHP-1B AMP MONITOR CAN BE ADJUSTED TO ALARM AT SLIGHTLY LESS THAN DHP STEADY STATE OPERATION.</p>
<p>REFERENCES: DRAWING 208-021 SHEET DH-02</p>
<p>SENSING ELEMENT: DH-1-FS4, DHP-1B CONTROL HANDLE CONTACTS AND DH-57-IR</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-02	D-04-02
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DC PUMP B
TRIP

EVENT POINT 0203

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DCP-1B BREAKER OPEN AND CONTROL HANDLE IN NORMAL AFTER START
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o GREEN INDICATOR LIGHT WITH A RED FLAG ON DCP-1B CONTROL STATION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o IF DH SYSTEM IS OPERATING, CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404 o INVESTIGATE DCP-1B PUMP, MOTOR, AND BREAKER
<p>DISCUSSION:</p> <p>DCP-1B TRIP REMOVES COOLING FOR THE DH PUMP, BS PUMP, DC RW PUMP AND THE DC COOLED MAKE UP PUMP. ANY OF THESE PUMPS RUNNING WHEN THE DC PUMP TRIPS SHOULD BE SECURED AS SOON AS POSSIBLE. WITH THE EXCEPTION OF THE MAKE UP PUMP WHICH SHOULD BE SWAPPED OVER TO SW COOLING, PER OP-408.</p> <p>REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.</p>
<p>REFERENCES: DRAWING 208-019 SHEET DC-02</p>
<p>SENSING ELEMENT: CS/SC, CS/O, R/B (CONTROL STATION CONTACTS)</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-03	D-04-03
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DC PUMP B
MOTOR
OVERLOAD

EVENT POINT 0201

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DCP-1B MOTOR AMPS >115% RATED LOAD
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o DCP-1B HIGH MOTOR AMPS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o INSPECT PUMP AND MOTOR FOR PROPER OPERATION o IF INSPECTION REVEALS MOTOR OR PUMP MALFUNCTION CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DH TRAINS PER OP-404
<p>DISCUSSION:</p> <p>THE LOSS OF A DC PUMP REMOVES COOLING FOR THE DH PUMP, BS PUMP, DC RW PUMP AND THE DC COOLED MAKE UP PUMP. ANY OF THESE PUMPS RUNNING WHEN THE DC PUMP TRIPS SHOULD BE SECURED AS SOON AS POSSIBLE. WITH THE EXCEPTION OF THE MAKE UP PUMP WHICH SHOULD BE SWAPPED OVER TO SW COOLING. IF DC PUMP HAS TO BE TRIPPED AFTER AN ES ACTUATION, HPI SEAL-IN RESET MUST BE DEPRESSED BEFORE THE PUMP CAN BE SECURED.</p>
<p>REFERENCES: DRAWING 208-019 SHEET DC-02</p>
<p>SENSING ELEMENT: 49X RELAY IN BREAKER CUBICLE</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-04	D-04-04
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DC PUMP B
 OUT OF SERVICE

EVENT POINT 0211

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DCP-1B BREAKER IS RACKED OUT
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o NO INDICATING LIGHTS ON DCP-1B CONTROL STATION o NO ES STATUS INDICATION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o INVESTIGATE THE CAUSE FOR DCP-1B BREAKER BEING RACKED OUT
<p>DISCUSSION:</p> <p>ADDRESS TS REQUIREMENTS CONCERNING THIS CONDITION. THIS IS AN EXPECTED ALARM FOR BREAKER TAGGING OPERATIONS.</p>
<p>REFERENCES: DRAWING 208-019 SHEET DC-02</p>
<p>SENSING ELEMENT: B/P CONTACTS IN THE DC PUMP BREAKER CUBICLE</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-04	D-04-04
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DC PUMP B
OUT OF SERVICE

EVENT POINT 0213

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DCP-1B BREAKER HAS NO DC CONTROL POWER
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o NO INDICATING LIGHTS ON DCP-1B CONTROL STATION o ES STATUS LIGHTS INDICATE BREAKER POSITION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o VERIFY CLOSED DPDP-5B SWITCH 9 o VERIFY DC CONTROL POWER TOGGLE SWITCH ON DCP-1B BREAKER IS "ON"
<p>DISCUSSION:</p> <p>THIS CONDITION DISABLES REMOTE BREAKER OPERATION AND PROTECTIVE RELAYING. REFER TO OP-703 FOR INSTRUCTIONS ON LOCAL BREAKER OPERATION.</p> <p>REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.</p>
<p>REFERENCES: DRAWING 208-019 SHEET DC-02</p>
<p>SENSING ELEMENT: 27C RELAY IN BREAKER CUBICLE</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-05	D-04-05
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DC PUMP B
DISCH PRESS
LOW

EVENT POINT 0202

INDICATED CONDITION:

- o DCP-1B DISCHARGE PRESSURE IS <30 PSIG FOR > 5 SEC. AS SENSED BY DC-56-PS, WITH DCP-1B BREAKER CLOSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DCP-1B DISCHARGE PRESSURE INDICATOR, DC-6-PI
- o DCP-1B CURRENT INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY DC SURGE TANK IS >8.5 FEET, IF NOT, NOTIFY AUX BLDG OPERATOR TO MANUALLY FILL DCT-1B
- o IF DISCHARGE PRESSURE CANNOT BE RECOVERED THEN CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404

DISCUSSION:

THE LOSS OF A DC PUMP REMOVES COOLING FOR THE DH PUMP, BS PUMP, DC RAW PUMP AND THE DC COOLED MAKE UP PUMP. ANY OF THESE PUMPS RUNNING WHEN THE DC PUMP IS LOST SHOULD BE SECURED AS SOON AS POSSIBLE, WITH THE EXCEPTION OF THE MAKE UP PUMP, WHICH SHOULD BE SWAPPED OVER TO SW COOLING. IF DC PUMP HAS TO BE TRIPPED AFTER AN ES ACTUATION, HPI SEAL-IN RESET MUST BE DEPRESSED BEFORE THE PUMP CAN BE SECURED.

REFERENCES: DRAWING 208-019 SHEET DC-02

SENSING ELEMENT: DC-56-PS

ESD ANNUNCIATOR RESPONSE	ESD-JH1-04-06	D-04-06
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DC TANK B
LEVEL
HIGH/LOW

EVENT POINT 0207

INDICATED CONDITION: <ul style="list-style-type: none">o "B" DC SURGE TANK LEVEL IS >11'4" AS SENSED BY DC-52-LS
REDUNDANT INDICATION WHICH WILL VERIFY ALARM: <ul style="list-style-type: none">o DC SURGE TANK LEVEL INDICATION, DC-54-LIo LOCAL SURGE TANK LEVEL INDICATIONo DECREASING RCS LEVEL WHILE ON DECAY HEAT
OPERATOR ACTIONS FOR A VALID ALARM: <ul style="list-style-type: none">o VERIFY AUTOMATIC DC SURGE TANK FILL VALVE, DCV-12 IS CLOSED IF NOT THEN MANUALLY ISOLATE DCV-12 BY CLOSING DCV-60o VERIFY "B"DC SYSTEM RADIATION MONITOR, RML-6 READING IS NORMALo IF ON DECAY HEAT REFER TO EOP-11o CONSIDERATION SHOULD BE GIVEN TO ALTERNATE DH TRAINS FER OP-404
DISCUSSION: <p>IF THE HIGH SURGE TANK LEVEL IS DUE TO A DH TO DC LEAK THEN THE DC SURGE TANK MAY CONTINUE TO FILL. THE DC SURGE TANK VENTS TO THE AUX BLDG VENT HEADER SO CONSIDERATION SHOULD BE GIVEN TO DRAINING DC TO THE AUX BLDG SUMP TO PREVENT OVERFLOWING THE TANK TO THE VENT DUCT AND ALIGNING THE DC SURGE TANK VENT TO THE WASTE GAS SYSTEM.</p> <p>DC SURGE TANK FILL VALVE, DCV-12 SHOULD OPEN AT 8'6" AND CLOSE AT 11'3"</p>
REFERENCES: DRAWING 208-019 SHEET DC-02
SENSING ELEMENT: DC-52-LS

ESD ANNUNCIATOR RESPONSE	ESD-JH1-05-03	D-05-03
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AH FAN 15B
TROUBLE

EVENT POINT 0398

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o AHF-15B BREAKER OPEN AND CONTROL HANDLE IN THE NORMAL AFTER START POSITION.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o GREEN LIGHT WITH A RED FLAG ON CONTROL STATIONo AMBER ES STATUS LIGHT
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o START AHF-15Ao INVESTIGATE CAUSE OF AIR HANDLING FAN TRIP.
<p>DISCUSSION:</p> <p>AHF-15B IS THE COOLING FAN FOR DCP-1A AND DCP-1B. THE PUMPS NORMALLY OPERATE WITHOUT EITHER AIR HANDLING FAN IN OPERATION BUT ARE REQUIRED DURING ACCIDENT SCENARIOS WHEN HEAT LOAD IN THE SEA WATER ROOM IS HIGH.</p>
<p>REFERENCES: DRAWING 208-005 SHEET AH-43</p>
<p>SENSING ELEMENT: CS/SC, CS/O, 42/B RELAY</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-05-03	D-05-03
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AH FAN 15B
TROUBLE

EVENT POINT 0399

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o AHF-15B AIR FLOW IS <0.058" WATER AS SENSED BY AH-408-DPS AND THE CONTROL HANDLE IS IN NORMAL AFTER START.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p>
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o START AHF-15A o INVESTIGATE CAUSE OF LOW AIR FLOW.
<p>DISCUSSION:</p> <p>AHF-15B IS THE COOLING FAN FOR DCP-1A AND DCP-1B. THE PUMPS NORMALLY OPERATE WITHOUT EITHER AIR HANDLING FAN IN OPERATION BUT ARE REQUIRED DURING ACCIDENT SCENARIOS WHEN HEAT LOAD IN THE SEA WATER ROOM IS HIGH. PRIMARY PLANT OPERATOR MAY CHECK LOCAL DIFFERENTIAL PRESSURE GAUGES AH-597-DPI (AHF-15A) AND AH-598-DPI (AHF-15B) TO DETERMINE FILTER AIR FLOW CONDITIONS.</p>
<p>REFERENCES: DRAWING 208-005 SHEET AH-43</p>
<p>SENSING ELEMENT: CS/SC, CS/O, AH-408-DPS</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-05-03	D-05-03
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AH FAN 15B
TROUBLE

EVENT POINT 0400

INDICATED CONDITION: <ul style="list-style-type: none">o AHF-15B DISCHARGE DUCT TEMPERATURE IS >135°F AS SENSED BY AH-410-TS
REDUNDANT INDICATION WHICH WILL VERIFY ALARM: <ul style="list-style-type: none">o AHF-15B TRIPSo AHF-15B WHITE PERMISSIVE LIGHT ON CONTROL STATION IS OFF
OPERATOR ACTIONS FOR A VALID ALARM: <ul style="list-style-type: none">o INVESTIGATE CAUSE OF HIGH DUCT TEMPERATUREo DO NOT ATTEMPT A START OF AH-15A UNTIL CAUSE OF HIGH TEMP IS DETERMINED
DISCUSSION: <p>THIS CONDITION MAY INDICATE A FIRE IN THE EXHAUST DUCTWORK OF AHF-15B. IF A FIRE CONDITION DOES EXIST REFER TO AP-880 FOR FURTHER GUIDANCE.</p>
REFERENCES: DRAWING 208-005 SHEET AH-43
SENSING ELEMENT: AH-410-TS

ESD ANNUNCIATOR RESPONSE	ESD-JH1-05-05	D-05-05
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DC PUMP B
SUCTION TEMP
HIGH

EVENT POINT 0209

INDICATED CONDITION: <ul style="list-style-type: none">o DCP-1B SUCTION TEMPERATURE IS >105°F AS SENSED BY DC-58-TS
REDUNDANT INDICATION WHICH WILL VERIFY ALARM: <ul style="list-style-type: none">o DCP-1B SUCTION TEMP INDICATION, DC-39-TIo DC RAW WATER TEMPERATURE INDICATOR RW-12-TI OR RW-32-TIo DH COOLER TEMPERATURE INDICATORS DH-2-TI2 OR DH-6-TI2
OPERATOR ACTIONS FOR A VALID ALARM: <ul style="list-style-type: none">o ENSURE RWP-3B RUNNINGo VERIFY RAW WATER DELTA TEMP FOR DHCC HEAT EXCHANGER IS <10°o IF "B" DC TRAIN TEMPERATURE CANNOT BE REDUCED THEN CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404.
DISCUSSION: <p>THIS CONDITION MAY INDICATE A FOULED DC HEAT EXCHANGER. INDICATIONS ARE: HIGH RWP-3B DISCHARGE PRESSURE, HIGH RW DIFFERENTIAL TEMP OR LOW DC DIFFERENTIAL TEMP ACROSS THE DC HEAT EXCHANGER. ALSO VENTING THE DC HEAT EXCHANGER SHOULD BE CONSIDERED. IF DC PUMP HAS TO BE TRIPPED AFTER AN ES ACTUATION, HPI SEAL-IN RESET MUST BE DEPRESSED BEFORE THE PUMP CAN BE SECURED.</p>
REFERENCES: DRAWING 208-019 SHEET DC-03
SENSING ELEMENT: DC-58-TS

ESD ANNUNCIATOR RESPONSE	ESD-JH1-06-02	D-06-02
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DH RW PUMP B
TRIP

EVENT POINT 0018

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o RWP-3B BREAKER IS OPEN WITH THE CONTROL HANDLE IN THE NORMAL AFTER START POSITION
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o GREEN LIGHT WITH RED FLAG ON RWP-3B CONTROL STATION o AMBER ES STATUS LIGHT
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404
<p>DISCUSSION:</p> <p>THE AMOUNT OF DECAY HEAT LOAD AND THE INITIAL TEMPERATURE OF SYSTEM WILL DETERMINE HOW FAST THE DECAY HEAT TRAINS SHOULD BE TRANSFERRED.</p> <p>REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.</p>
<p>REFERENCES: DRAWING 208-050 SHEET RW-05</p>
<p>SENSING ELEMENT: 52S/B, 52H/A, CS/SC, CS/O</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-06-03	D-06-03
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DH RW PUMP B
MOTOR
OVERLOAD

EVENT POINT 0017

<p>INDICATED CONDITION</p> <ul style="list-style-type: none"> o RWP-3B MOTOR AMPS \geq115% RATED LOAD.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o HIGH RWP-3B MOTOR AMPS o RWP-3B TRIPS
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS o CONSIDERATION SHOULD BE GIVEN TO ALTERNATING DECAY HEAT TRAINS PER OP-404
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES THAT EITHER THE TIMED OVERCURRENT OR THE INSTANTANEOUS OVERCURRENT PROTECTIVE DEVICES HAVE ACTUATED. INSTANTANEOUS OVERCURRENT PROTECTIVE RELAY ACTUATION WILL TRIP THE BREAKER.</p> <p>IT IS POSSIBLE TO HAVE THIS ALARM PRIOR TO THE BREAKER TRIP.</p>
<p>REFERENCES: DRAWING 208-050 SHEET RW-05</p>
<p>SENSING ELEMENT: RELAY 51</p>

ESB ANNUNCIATOR RESPONSE	ESD-JH1-07-04	D-07-04
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SW PUMP B
OUT OF SERVICE

EVENT POINT 1854

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o SWP-1B BREAKER HAS NO DC CONTROL POWER.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o NO INDICATING LIGHTS ON SWP-1B CONTROL STATION o ES STATUS LIGHTS INDICATE BREAKER POSITION
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o VERIFY DC KNIFE SWITCH FOR SWP-1B BREAKER CLOSED. o VERIFY CLOSED DPDP-5B SWITCH 10.
<p>DISCUSSION:</p> <p>THIS CONDITION DISABLES REMOTE BREAKER OPERATION AND PROTECTIVE RELAYING. REFER TO OP-703 FOR INSTRUCTIONS ON LOCAL BREAKER OPERATION. THIS IS AN EXPECTED ALARM FOR BREAKER TAGGING OPERATIONS.</p> <p>REFER TO TS FOR ADMINISTRATIVE REQUIREMENTS.</p>
<p>REFERENCES: DRAWING 208-050 SHEET SW-03</p>
<p>SENSING ELEMENT: RELAY 27C LOCATED INSIDE BREAKER CUBICLE FOR SWP-1B</p>

ESD ANNUNCIATOR RESPONSE	ESD-JH1-08-03	D-08-03
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SW RW PUMP B
MOTOR
OVERLOAD

EVENT POINT 0009

INDICATED CONDITION <ul style="list-style-type: none">o RWP-2B MOTOR AMPS >115% RATED LOAD
REDUNDANT INDICATION WHICH WILL VERIFY ALARM: <ul style="list-style-type: none">o HIGH MOTOR AMPS ON RWP-2B CONTROL STATIONo RWP-2B TRIP
OPERATOR ACTIONS FOR A VALID ALARM: <ul style="list-style-type: none">o START RWP-2Ao HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS
DISCUSSION: <p>THIS ALARM INDICATES THAT EITHER THE TIMED OVERCURRENT OR THE INSTANTANEOUS OVERCURRENT PROTECTIVE DEVICES HAVE ACTUATED. INSTANTANEOUS OVERCURRENT PROTECTIVE RELAY ACTUATION WILL TRIP THE BREAKER.</p> <p>IT IS POSSIBLE TO HAVE THIS ALARM PRIOR TO THE BREAKER TRIP.</p>
REFERENCES: DRAWING 208-050 SHEET RW-03
SENSING ELEMENT: RELAY 51

