

Effective Date 9-30-98

INFORMATION ONLY

Holder # 1242

ANNUNCIATOR RESPONSE

AR-304

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ESD ANNUNCIATOR RESPONSE

APPROVED BY: Procedure Owner

Ronald W. ... FOR MA TRUMP
(SIGNATURE ON FILE)

DATE: 9/29/98

PROCEDURE OWNER: Manager, Nuclear Plant Operations
Support

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
<u>1.0 PURPOSE</u>	1
<u>2.0 REFERENCES</u>	1
<u>2.1 IMPLEMENTING REFERENCES</u>	1
<u>2.2 DEVELOPMENTAL REFERENCES</u>	1
<u>3.0 PERSONNEL INDOCTRINATION</u>	1
<u>4.0 INSTRUCTIONS</u>	1
<u>5.0 FOLLOW-UP ACTIONS</u>	1
<u>ENCLOSURE</u>	
1 Annunciator Response.....	2

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
- 2.2.3 PT-169B, Decay Heat Removal/Building Spray Instrumentation Train "B"
- 2.2.4 SP-132, Engineered Safeguards Channel Calibration

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	ES-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>HPI BI-STABLES WILL TRIP AT ≤ 1540 PSIG AS SENSED BY RC-3B-PT3</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-31</p>
<p>SENSING ELEMENT: 63-Z1A/RC-1, RC-2, RC-3, ES ACTUATION RELAY RC-3B-PT3</p>

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

EVENT POINT 1023

INDICATED CONDITION:

- o LOADING SEQUENCE BLOCK 2 ACTUATION "B"

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 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

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO EOP

DISCUSSION:

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

REFERENCES: DRAWING 208-028 SHEET ESB-25

SENSING ELEMENT: 62X1/RC-1, RC-2, RC-3, ES ACTUATION RELAYS

ESD ANNUNCIATOR RESPONSE	ES-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	ES-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 OR HPI RECIRC VALVES TO RB SUMP (MUV-543, 544, 545, & 546) ARE OPEN PER AP-404, EOP-4, OR EOP-13
<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	ES-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 SENSED BY RC-3A-PS4
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o DHV-6 INDICATION o 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	ES-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. LPI BI-STABLES WILL TRIP AT ≤ 560 PSIG AS SENSED BY RC-3B-PT3</p>
<p>REFERENCES: DRAWING 208-028 SHEET ESB-42</p>
<p>SENSING ELEMENT: 6323 ES ACTUATION RELAY, RC-3B-PT3</p>

ESD ANNUNCIATOR RESPONSE	ES-JH1-05-01	D-05-01
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RC LOOP B
VENT VLVS
OPEN

EVENT POINT 1877

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o BOTH "B" LOOP VENT VALVES, RCV-163 AND RCV-164 ARE ENERGIZED.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o LOOP VENT VALVE POSITION INDICATION IS OPEN ON MCBo LOOP VENT VALVE FLOW WHITE INDICATING LIGHT IS ONo RCS PRESSURE DECREASING
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none">o CLOSE THE OPEN VENT VALVE IF NECESSARY
<p>DISCUSSION:</p> <p>THE LOOP VENT VALVES ARE MOUNTED IN SERIES SO OPENING ONE VALVE SHOULD NOT CAUSE AN RCS LEAK.</p>
<p>REFERENCES: DRAWING 208-047 SHEET RC-33</p>
<p>SENSING ELEMENT: POSITION SWITCH ON VALVES (33)</p>

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

EVENT POINT 0400

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o AHF-15B DISCHARGE DUCT TEMPERATURE IS >135°F AS SENSED BY AH-410-TS
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none">o AHF-15B TRIPSo AHF-15B WHITE PERMISSIVE LIGHT ON CONTROL STATION IS OFF
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <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
<p>DISCUSSION:</p> <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>
<p>REFERENCES: DRAWING 208-005 SHEET AH-43</p>
<p>SENSING ELEMENT: AH-410-TS</p>

ESD ANNUNCIATOR RESPONSE	ES-JH1-06-04	D-06-04
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DH RW PUMP B
OUT OF SERVICE

EVENT POINT 0016

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none">o RWP-3B 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 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 RWP-3B BREAKER CLOSED
<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 RW-05</p>
<p>SENSING ELEMENT: RELAY 27C LOCATED INSIDE BREAKER CUBICLE FOR RWP-3B</p>

