

DOCUMENT TRANSMITTAL FORM 90477
FOR DOCUMENTS TRANSMITTED TO DC DESK (NRC)*

DATE: 28 Apr 1993
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AR 302

13

24

INSTRUCTIONS TO THE ADDRESSEE

COMPLETE EACH OF THE INSTRUCTIONS BELOW WHICH ARE MARKED WITH AN " X "

- ☒ (1) VERIFY THE DOCUMENTS RECEIVED AGREE WITH THE ABOVE DESCRIPTION
- ☒ (2) INCORPORATE THE TRANSMITTED DOCUMENTS INTO YOUR FILES
- ☒ (3) DESTROY DOCUMENTS OR PORTIONS OF DOCUMENTS SUPERSEDED BY THE ABOVE
- ☒ (4) SIGN AND DATE IN THE SPACES BELOW INDICATING THAT YOU COMPLETED THESE INSTRUCTIONS.
- ☐ (5) SIGN BELOW INDICATING THAT YOU HAVE READ AND UNDERSTOOD THE CHANGES AS IDENTIFIED
- ☒ (6) RETURN TO DOCUMENT CONTROL, CRYSTAL RIVER UNIT 3, MAC# NA1C
NR2A ☒ SA1G FLORIDA POWER CORP., P.O. BOX 219
CRYSTAL RIVER FLA. 32623
- ☐ (7) QUALITY PROGRAMS PERSONNEL HAVE READ AND UNDERSTOOD THE CHANGES TO THE AFFECTED QAP'S

SIGNATURE OF ADDRESSEE

DATE

INDEPENDENT VERIFICATION

DATE

(OPS)

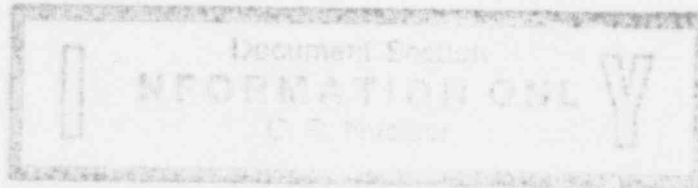
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ADCK 9/1

Rev. 13 04/23/93

Effective Date

4/28/93



ANNUNCIATOR RESPONSE

AR-302

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ESB ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall

DATE:

4/27/93

INTERPRETATION CONTACT: Manager, Nuclear Plant Operations

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1 Annunciator Response	2

1.0 PURPOSE

- 1.1 Establish a reference document for each Annunciator Window on the ES (A)-KW2 Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ES (A)-KW2 Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ES(A)-KW2 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

- 2.1.1 AP-380 - Engineered Safeguards Actuation
- 2.1.2 AP-360 - Loss of Decay Heat Removal
- 2.1.3 OP-608 - OTSG's and Main Steam
- 2.1.4 OP-402 - Makeup and Purification
- 2.1.5 AP-790 - Station Blackout
- 2.1.6 AR-901 - DG 'A' Annunciator Response
- 2.1.7 OP-401 - Core Flood System

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(A)-KW2 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-01	B-01-01
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RB SPRAY
ES A
ACTUATION

EVENT POINT 0935

INDICATED CONDITION:

- o REACTOR BUILDING PRESSURE IS >30 PSIG COINCIDENT WITH A RB SPRAY PERMIT

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o BLUE ES STATUS LIGHTS FOR RB SPRAY
- o BUILDING SPRAY PUMP IS RUNNING
- o RB PRESSURE CONTROL BOARD INDICATOR BS-90-PI, BS-16-PI
- o COMPUTER POINT P-254

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-380

DISCUSSION:

- o HPI ACTUATION THROUGH BLOCK 5 WILL GIVE A BUILDING SPRAY PERMIT.

REFERENCES: DRAWING 208-028 SHEET ESA-70

SENSING ELEMENT: 63-Z1/RB-4,RB-5,RB-6 ES ACTUATION RELAYS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-02	B-01-02
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RB SPRAY PP A
TRIP

EVENT POINT 0044

INDICATED CONDITION:

- BSP-1A BREAKER IS OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT ON WITH A RED FLAG ON BSP-1A CONTROL STATION
- AMBER ES STATUS LIGHT

OPERATOR ACTIONS FOR A VALID ALARM:

- DETERMINE CAUSE OF BREAKER TRIP
- CHECK BREAKER FOR DROP TARGET INDICATORS

DISCUSSION:

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-009 SHEET BS-01

SENSING ELEMENT: CS/SC, CS/O (CONTROL SWITCH CONTACTS) 52S, 52H

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-03	B-01-03
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RB SPRAY PP A
MOTOR
OVERLOAD

EVENT POINT 0059

INDICATED CONDITION:

- MOTOR AMPS $\geq 115\%$ RATED LOAD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH BUILDING SPRAY FLOW AS SEEN ON BS-1-F11
- HIGH MOTOR AMPS
- BSP-1A TRIP

OPERATOR ACTIONS FOR A VALID ALARM:

- REDUCE BS FLOW BY THROTTLING BSV-3 CLOSED
- HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS
- IF LOAD REMAINS HIGH ON BSP-1A CONSIDER TRIPPING BSP-1A

DISCUSSION:

THIS ALARM INDICATES THAT EITHER THE TIMED OVER CURRENT 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 208-009 SHEET BS-01

SENSING ELEMENT: 51-IOC(INSTANTANEOUS) 51-TOC(TIMED) BREAKER CONTACTS

ESB ANNUNCIATOR RESPONSE	ESA-KV2-01-04	B-01-04
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RB SPRAY PP A
OUT OF SERVICE

EVENT POINT 0043

INDICATED CONDITION:

- BSP-1A BREAKER IS RACKED OUT

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO INDICATING LIGHTS ON CONTROL STATION
- NO ES STATUS INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE FOR BREAKER BEING RACKED OUT

DISCUSSION:

ADDRESS STS ADMINISTRATIVE REQUIREMENTS CONCERNING THIS CONDITION

REFERENCES: DRAWING 208-009 SHEET BS-01

SENSING ELEMENT: 52-H BREAKER CONTACT

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-04	B-01-04
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RB SPRAY PP A
OUT OF SERVICE

EVENT POINT 0061

INDICATED CONDITION:

- BSP-1A BREAKER HAS NO DC CONTROL POWER

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO INDICATING LIGHTS ON CONTROL STATION
- ES STATUS LIGHTS INDICATE BREAKER POSITION

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BSP-1A BREAKER DC KNIFE SWITCH IS CLOSED
- VERIFY DPDP-5A SWITCH 10 IS CLOSED

DISCUSSION:

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.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-009 SHEET BS-01

SENSING ELEMENT: 27C BREAKER RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-05	B-01-05
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RB SPRAY A
FLOW
HIGH/LOW

EVENT POINT 0047

INDICATED CONDITION:

- BUILDING SPRAY FLOW IS <1400 GPM AS MEASURED BY BS-1-FS1 FOR 30 SEC. COINCIDENT WITH AN ES ACTUATION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RB SPRAY FLOW INDICATOR BS-1-F11 OR INDICATOR ON BSV-3

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY PROPER OPERATION OF BSV-3, OPEN BSV-3 AS REQUIRED
- VERIFY BSP-1A NOT TRIPPED

DISCUSSION:

THE NORMAL BUILDING SPRAY PUMP FLOW DURING AN ES ACTUATION IS 1550 GPM. TAKING LOCAL/AUTO CONTROL OF BSV-3 WILL ALLOW THE OPERATOR TO USE THE THUMBWHEEL ON THE VALVE CONTROLLER TO SET THE FLOW RATE. IF THIS DOES NOT WORK, THEN MANUAL CONTROL OF THE VALVE SHOULD BE ATTEMPTED FROM THE CONTROL BOARD STATION.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT BS-1-FS1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-05	B-01-05
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RB SPRAY A
FLOW
HIGH/LOW

EVENT POINT 0049

INDICATED CONDITION:

- BUILDING SPRAY FLOW IS >1700 GPM AS MEASURED BY BS-1-FS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RB SPRAY FLOW INDICATOR BS-1-FI1 OR INDICATOR ON BSV-3

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY PROPER OPERATION OF BSV-3, THROTTLE BSV-3 AS REQUIRED TO REDUCE FLOW

DISCUSSION:

THE NORMAL BUILDING SPRAY PUMP FLOW DURING AN ES ACTUATION IS 1550 GPM. TAKING LOCAL/AUTO CONTROL OF BSV-3 WILL ALLOW THE OPERATOR TO USE THE THUMBWHEEL ON THE VALVE CONTROLLER TO SET THE FLOW RATE. IF THIS DOES NOT WORK THEN MANUAL CONTROL OF THE VALVE SHOULD BE ATTEMPTED FROM THE CONTROL BOARD STATION.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-1-FS1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-05	B-01-05
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RB SPRAY A
FLOW
HIGH/LOW

EVENT POINT 0063

INDICATED CONDITION:

- o BUILDING SPRAY FLOW IS <1100 GPM AS MEASURED BY BS-81-FIS WITH DHV-42 OPEN

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RB SPRAY FLOW INDICATOR BS-1-F11 OR INDICATOR ON BSV-3 CONTROLLER

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER OPERATION OF BSV-3, OPEN BSV-3 AS REQUIRED
- o VERIFY BSP-1A NOT TRIPPED

DISCUSSION:

THE NORMAL BUILDING SPRAY PUMP FLOW WHILE TAKING A SUCTION FROM THE RB SUMP IS 1200 GPM, THIS IS TO ENSURE ADEQUATE NET POSITIVE SUCTION HEAD FOR THE BUILDING SPRAY PUMP. OPERATION IN THIS MODE IS TAKING LOCAL/AUTO CONTROL OF BSV-3, THIS WILL ALLOW THE OPERATOR TO USE THE THUMBWHEEL ON THE VALVE CONTROLLER TO SET THE FLOW RATE. IF THIS DOES NOT WORK, THEN MANUAL CONTROL OF THE VALVE SHOULD BE ATTEMPTED FROM THE CONTROL BOARD STATION.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-81-FIS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-01-05	B-01-05
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RB SPRAY A
FLOW
HIGH/LOW

EVENT POINT 0065

INDICATED CONDITION:

- o BUILDING SPRAY FLOW IS >1300 GPM AS MEASURED BY BS-81-FIS WITH DHV-42 OPEN

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RB SPRAY FLOW INDICATOR BS-1-F11 OR INDICATOR ON BSV-3

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER OPERATION OF BSV-3, THROTTLE BSV-3 AS REQUIRED TO REDUCE FLOW

DISCUSSION:

THE NORMAL BUILDING SPRAY PUMP FLOW WHILE TAKING A SUCTION FROM THE RB SUMP IS 1200 GPM, THIS IS TO INSURE ADEQUATE NET POSITIVE SUCTION HEAD FOR THE BUILDING SPRAY PUMP. OPERATION IN THIS MODE IS TAKING LOCAL/AUTO CONTROL OF BSV-3, THIS WILL ALLOW THE OPERATOR TO USE THE THUMBWHEEL ON THE VALVE CONTROLLER TO SET THE FLOW RATE. IF THIS DOES NOT WORK, THEN MANUAL CONTROL OF THE VALVE SHOULD BE ATTEMPTED FROM THE CONTROL BOARD STATION.

REFERENCES: DRAWING 208-009 SHEET BS-11

SENSING ELEMENT: BS-81-FIS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-01	B-02-01
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RB FAN A
HIGH SPEED
TRIP

EVENT POINT 0348

INDICATED CONDITION:

- o AHF-1A CONTROL HANDLE PUSHED IN, IN NORMAL AFTER START, AND HIGH SPEED WINDINGS NOT ENERGIZED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN HIGH SPEED LIGHT WITH A RED FLAG ON CONTROL STATION, AND CONTROL HANDLE PUSHED IN.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF FAN TRIP

DISCUSSION:

THIS ALARM WILL OCCUR IF THE FAN IS RUNNING IN HIGH SPEED AND AN ES ACTUATION OCCURS. THIS WILL TRIP THE FAN IN HIGH SPEED AND START THE FAN IN SLOW SPEED

SOME THINGS TO CHECK AFTER A FAN TRIP ARE: FAN AND MOTOR TEMPS AS READ ON AH-1003-TIR ON THE BACK OF THE CONTROL BOARD OR FAN VIBRATION ALARMS.

REFERENCES: DRAWING 208-005 SHEET AH-28

SENSING ELEMENT: CS/IN, CS/SC, CS/O, 42/1F RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-02	B-02-02
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RB FAN A
LOW SPEED
TRIP

EVENT POINT 0349

INDICATED CONDITION:

- o AHF-1A CONTROL HANDLE PULLED OUT, IN NORMAL AFTER START, AND SLOW SPEED WINDINGS NOT ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LOW SPEED LIGHT WITH A RED FLAG ON CONTROL STATION, AND THE CONTROL HANDLE PULLED OUT

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF FAN TRIP

DISCUSSION:

SOME THINGS TO CHECK AFTER A FAN TRIP ARE: FAN AND MOTOR TEMPS AS READ ON AH-1003-TIR ON THE BACK OF THE CONTROL BOARD OR FAN VIBRATION ALARMS

REFERENCES: DRAWING 208-005 SHEET AH-28

SENSING ELEMENT: CS/OUT, CS/SC, CS/O, 42/1S RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-03	B-02-03
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RB FAN A
AIR FLOW
LOW

EVENT POINT 0350

INDICATED CONDITION:

- o AHF-1A CONTROL HANDLE PUSHED IN AND IN NORMAL AFTER START AND LOW AIR FLOW IS SENSED BY AH-17-DPS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING TEMPS ARE INCREASING AS SEEN ON AH-536-TIR

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF CONDITION CANNOT BE CORRECTED THEN CONSIDERATION SHOULD BE MADE TO SECURE THE FAN

DISCUSSION:

THIS ALARM MAY BE IN WHEN AN ES ACTUATION HAS STARTED A PREVIOUSLY RUNNING FAN IN SLOW SPEED. PLACING THE CONTROL HANDLE IN THE PULL OUT NORMAL AFTER START POSITION SHOULD CLEAR THE ALARM. ALSO IF THE FAN TRIPS THIS ALARM SHOULD ACTUATE.

REFERENCES: DRAWING 208-005 SHEET AH-28

SENSING ELEMENT: AH-17-DPS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-04	B-02-04
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RB FAN A
VIBRATION
HIGH

EVENT POINT 0351

INDICATED CONDITION:

- o AHF-1A HIGH VIBRATION CONDITION IS SENSED BY AH-18-ME1/2

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FAN AND MOTOR TEMPS INCREASING ON AH-1003-TIR ON BACK OF CONTROL BOARD
- o IF FAN IS RUNNING IN SLOW SPEED THEN CURRENT ON THE FAN MAY BE OSCILLATING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ATTEMPT TO RESET ALARM BY DEPRESSING RESET PUSHBUTTON ON CONTROL BOARD
- o IF CONDITION CANNOT BE CORRECTED THEN CONSIDERATION SHOULD BE MADE TO SECURE THE FAN

DISCUSSION:

IF REACTOR BUILDING ENTRY IS POSSIBLE CONSIDERATION SHOULD BE MADE TO ENTER RB AND INVESTIGATE HIGH VIBRATION CONDITION.

REFERENCES: DRAWING 208-005 SHEET AH-132

SENSING ELEMENT: AH-18-ME1, AH-18-ME2

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-05	B-02-05
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THIS AR IS ONLY USED WHEN COLD LEG NOZZLE DAMS ARE INSTALLED PER MP-110C

[illegible]

RCSG-1A
NOZZLE DAM
PROBLEM

EVENT POINT 1697

INDICATED CONDITION:

- 0 "A" SIDE NOZZLE DAM CONTROL CONSOLE IS IN ALARM

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NOZZLE DAM PRESSURE >9 PSIG ON EITHER SEAL
- o NOZZLE DAM PRESSURE <6.5 PSIG ON EITHER SEAL
- o NOZZLE DAM AIR FLOW >9 SCFH
- o LOSS OF POWER TO THE CONTROL PANEL

OPERATOR ACTIONS FOR A VALID ALARM:

- o IMMEDIATELY INVESTIGATE SOURCE OF ALARM
- o REFER TO AP-360

DISCUSSION:

THIS ALARM INDICATES POSSIBLE NOZZLE DAM SEAL DEGRADATION. IF THE SEAL FAILS, A REACTOR COOLANT LEAK WOULD DEVELOP, FLOODING THE PRIMARY SIDE OF THE STEAM GENERATORS WHERE PERSONNEL MAY BE AT WORK.

THIS EVENT POINT IS ONLY IN USE ON A TEMPORARY BASIS WHEN NOZZLE DAMS ARE INSTALLED. THE WINDOW "RB FAN A CONDENSATE HIGH" IS REMOVED FROM THE ANNUNCIATOR PANEL WHEN THIS EVENT POINT IS IN EFFECT.

REFERENCES: MP-110C

SENSING ELEMENT: INTERNAL ALARM CIRCUITS INSIDE NOZZLE DAM CONTROL CONSOLE

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-06	B-02-06
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[illegible]

ES A ACTUATION TROUBLE

EVENT POINT 1230

INDICATED CONDITION:

- 0 "A" ES ACTUATION SIGNAL ON ONE OR MORE ES CHANNELS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES STATUS LIGHTS
- o ES BISTABLE TRIP INDICATORS

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-380

DISCUSSION:

THIS ALARM INDICATES THAT AT LEAST ONE OF THREE CHANNELS OF "A" ES HAS ACTUATED. ANY HPI OR LPI BISTABLE TRIPPED WITH ES NOT BYPASSED, OR ANY 4 PSIG ES PRESSURE SWITCH ACTUATED WILL GIVE THIS ALARM. PLACING THE RC PRESSURE TEST MODULE IN "TEST" DEFEATS THIS ALARM FROM LPI OR HPI. WHEN THE 4 PSIG TEST SWITCHES ARE IN THE "TEST" POSITION THIS ALARM IS DEFEATED FROM A 4 PSIG ACTUATION.

REFERENCES: DRAWING 208-028 SHEET AS-AB-05

SENSING ELEMENT: VARIOUS ES ACTUATION CONTACTS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-01	B-03-01
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RB FAN C
HIGH SPEED
TRIP

EVENT POINT 0356

INDICATED CONDITION:

- o AHF-1C CONTROL HANDLE PUSHED IN, IN NORMAL AFTER START WITH THE FAST SPEED WINDINGS NOT ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN HIGH SPEED LIGHT ON WITH A RED FLAG ON CONTROL STATION AND CONTROL HANDLE PUSHED IN

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF FAN TRIP

DISCUSSION:

THIS ALARM WILL OCCUR IF THE FAN IS RUNNING IN HIGH SPEED AND AN ES ACTUATION OCCURS. THIS WILL TRIP THE FAN IN HIGH SPEED AND START THE FAN IN SLOW SPEED

SOME THINGS TO CHECK AFTER A FAN TRIP ARE: FAN AND MOTOR TEMPS AS READ ON AH-1003-TIR ON THE BACK OF THE CONTROL BOARD OR FAN VIBRATION ALARMS

REFERENCES: DRAWING 208-005 SHEET AH-30

SENSING ELEMENT: CS/IN, CS/SC, CS/O, 42/1F

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-02	B-03-02
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RB FAN C
LOW SPEED
TRIP

EVENT POINT 0357

INDICATED CONDITION:

- o AHF-1C CONTROL HANDLE PULLED OUT, IN NORMAL AFTER START, AND THE SLOW SPEED WINDINGS ARE NOT ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LOW SPEED LIGHT ON WITH A RED FLAG ON CONTROL STATION, AND CONTROL HANDLE PULLED OUT

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF FAN TRIP

DISCUSSION:

SOME THINGS TO CHECK AFTER A FAN TRIP ARE: FAN AND MOTOR TEMPS AS READ ON AH-1003-TIR ON THE BACK OF THE CONTROL BOARD OR FAN VIBRATION ALARMS

REFERENCES: DRAWING 208-005 SHEET AH-30

SENSING ELEMENT: CS/OUT, CS/SC, CS/O, 42/1S RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-03	B-03-03
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RB FAN C
AIR FLOW
LOW

EVENT POINT 0358

INDICATED CONDITION:

- o AHF-1C CONTROL HANDLE PUSHED IN, IN NORMAL AFTER START AND LOW AIR FLOW AS SENSED BY AH-21-DPS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING TEMPS ARE INCREASING AS SEEN ON AH-536-TIR

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF CONDITION CANNOT BE CORRECTED THEN CONSIDERATION SHOULD BE MADE TO SECURE THE FAN

DISCUSSION:

THIS ALARM MAY BE IN WHEN AN ES ACTUATION HAS STARTED A PREVIOUSLY RUNNING FAN IN SLOW SPEED. PLACING THE CONTROL HANDLE IN THE PULL OUT NORMAL AFTER START POSITION SHOULD CLEAR THE ALARM. ALSO IF THE FAN TRIPS THIS ALARM SHOULD ACTUATE.

REFERENCES: DRAWING 208-005 SHEET AH-30

SENSING ELEMENT: AH-21-DPS, CS/OUT, CS/SC, CS/O, 42/1S RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-04	B-03-04
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RB FAN C
VIBRATION
HIGH

EVENT POINT 0359

INDICATED CONDITION:

- o AHF-1C HIGH VIBRATION CONDITION IS SENSED BY AH-22-ME1/2

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FAN AND MOTOR TEMPS INCREASING ON AH-1003-TIR ON BACK OF CONTROL BOARD
- o IF FAN IS RUNNING IN SLOW SPEED THEN CURRENT ON THE FAN MAY BE OSCILLATING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ATTEMPT TO RESET ALARM BY DEPRESSING RESET PUSHBUTTON ON CONTROL BOARD
- o IF CONDITION CANNOT BE CORRECTED THEN CONSIDERATION SHOULD BE MADE TO SECURE THE FAN

DISCUSSION:

IF REACTOR BUILDING ENTRY IS POSSIBLE CONSIDERATION SHOULD BE MADE TO ENTER RB AND INVESTIGATE HIGH VIBRATION CONDITION.

REFERENCES: DRAWING 208-005 SHEET AH-132

SENSING ELEMENT: AH-22-ME1, AH-22-ME2

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-05	B-03-05
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RB FAN C
CONDENSATE
HIGH

EVENT POINT 1699

INDICATED CONDITION:

- o AHF-1C CONDENSATE FLOW IS >1133 CC PER MINUTE AS SENSED BY AH-658-FIS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING SUMP RATE OF RISE IS INCREASING AS SEEN ON BS-93-PIR

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE SOURCE OF CONDENSATE

DISCUSSION:

SOME SOURCES OF HIGH CONDENSATION ARE:

RCS LEAK IN CONTAINMENT - CHECK PZR LEVEL AND MAKE UP TANK LEVEL TRENDS;

FEEDWATER/MAIN STEAM LEAK IN CONTAINMENT - CHECK FEEDWATER FLOWRATES;

RB FAN COOLER SW LEAKS - CHECK SW SURGE TANK LEVEL IF ON SW, OR CI SURGE TANK LEVELS IF ON CI.

REFERENCES: DRAWING 208-005 SHEET AH-131

SENSING ELEMENT: AH-658-FIS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-06	B-03-06
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[illegible]

RB FAN C
POWER SUPPLY
MISALIGN

EVENT POINT 0799

INDICATED CONDITION:

- 0 AHF-1C SELECTED FOR "A" ES START ESMCC-3AB IS BEING POWERED FROM ES 480V
BUS 3B

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SWITCH IN ES ACTUATION RELAY CABINET 4D IS SELECTED TO "AHF-1C"
- o ESMCC-3AB POWER SOURCE STATUS LAMP INDICATES ABT IS SELECTED TO ES 480V BUS 3B

OPERATOR ACTIONS FOR A VALID ALARM:

- o SELECT AHF-1A FOR ES START ON ES "A" ACTUATION OR
- o SELECT ESMCC-3AB TO 480V ES BUS 3A POWER SOURCE

DISCUSSION:

THIS CONDITION VIOLATES REQUIREMENTS FOR ES TRAIN SEPARATION. OPERABILITY CONCERNS MUST BE ADDRESSED WHILE THIS CONDITION EXISTS. REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-005 SHEET AH-30

SENSING ELEMENT: MTXS-1,SS-BY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-03-06	B-03-06
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[illegible]

RB FAN C
POWER SUPPLY
MISALIGN

EVENT POINT 0801

INDICATED CONDITION:

- 0 AHF-1C SELECTED FOR "B" ES START, AND ES-MCC-3AB IS BEING POWERED FROM ES 480V BUS 3A

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SWITCH IN ES ACTUATION RELAY CABINET 5D IS SELECTED TO "AHF-1C"
- o ES-MCC-3AB POWER SOURCE STATUS LAMP INDICATES ABT IS SELECTED TO ES 480V BUS 3A

OPERATOR ACTIONS FOR A VALID ALARM:

- o SELECT AHF-1B FOR ES START ON ES "B" ACTUATION
OR
- o SELECT ES-MCC-3AB TO 480V ES BUS 3B POWER SOURCE

DISCUSSION:

THIS CONDITION VIOLATES REQUIREMENTS FOR ES TRAIN SEPARATION. OPERABILITY CONCERNS MUST BE ADDRESSED WHILE THIS CONDITION EXISTS. *

REFERENCES: DRAWING 208-005 SHEET AH-30

SENSING ELEMENT: MTXS-1,SS-BY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-01	B-04-01
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MAKEUP PP A
TRIP

EVENT POINT 1035

INDICATED CONDITION:

- BREAKER 4S OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION
- AMBER ES STATUS LIGHT

OPERATOR ACTIONS FOR A VALID ALARM:

- CLOSE MUV-16, AND MUV-31 AND MINIMIZE LETDOWN FLOW
- INVESTIGATE MUP-1A BREAKER FOR DROPPED TARGETS
- START ANOTHER MAKE-UP PUMP PER OP-402 IF CAUSE OF THIS TRIP WILL NOT TRIP ANOTHER PUMP

DISCUSSION:

EXERCISE CARE WHEN STARTING ALTERNATE MU PUMPS. ENSURE ANY FAILURES SUCH AS IMPROPER FLOWPATH, WHICH MAY HAVE DIRECTLY OR INDIRECTLY HAVE CAUSED THIS PUMP TO TRIP DO NOT CAUSE ALTERNATE PUMPS TO TRIP AFTER THEY ARE STARTED.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-01

SENSING ELEMENT: CS/SC, CS/O, 52H/B, 52S/B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-02	B-04-02
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MAKEUP PP A
GEAR OIL PRESS
LOW

EVENT POINT 1057

INDICATED CONDITION:

- MUP-1A BREAKER CLOSED ≥ 20 SECONDS WITH GEAR OIL PRESS ≤ 7 PSIG AS SENSED BY MU-88-PS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BACK UP GEAR OIL PUMP AUTO STARTS
- COMPUTER POINT X-067

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY MUP-5A DC BACK UP GEAR OIL PUMP STARTED
- MONITOR MUP-1A VIA COMPUTER GROUP 70

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE UP PUMPS PER OP-402

REFERENCES: DRAWING 208-041 SHEET MU-49

SENSING ELEMENT: MU-88-PS, CS/SC, CS/O, 52H/B, 52S/B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-03	B-04-03
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MAKEUP PP A
MOTOR
OVERLOAD

EVENT POINT 1033

INDICATED CONDITION:

- MOTOR AMPS \geq 115% RATED LOAD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH MOTOR AMPS
- MUP-1A TRIP
- HIGH FLOWRATES THROUGH MUP-1A

OPERATOR ACTIONS FOR A VALID ALARM:

- THROTTLE MAKEUP FLOW TO MAINTAIN <540 GPM FLOW PER AP-380.
- HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS

DISCUSSION:

THIS ALARM INDICATES THAT EITHER THE TIMED OVER CURRENT 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 208-041 SHEET MU-49

SENSING ELEMENT: 51 RELAY INSIDE BREAKER CUBICLE

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-04	B-04-04
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MAKEUP PP A
LUBE OIL PUMP
TRIP

EVENT POINT 1048

INDICATED CONDITION:

- MUP-2A CONTROL HANDLE IN NORMAL AFTER START POSITION AND MOTOR NOT ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION
- LOW LUBE OIL PRESSURE ALARM
- MUP-3A BACK-UP LUBE OIL PUMP AUTO START

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE MUP-3A BACK-UP LUBE OIL PUMP STARTED

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 70. CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE-UP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-05

SENSING ELEMENT: CS/SC, CS/O, 42B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-04	B-04-04
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MAKEUP PP A
LUBE OIL PUMP
TRIP

EVENT POINT 1052

INDICATED CONDITION:

- MUP-3A CONTROL HANDLE IN THE NORMAL AFTER START POSITION AND MOTOR IS NOT ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION
- MAKEUP PUMP OIL PRESSURE LOW ALARM
- COMPUTER POINT X070

OPERATOR ACTIONS FOR A VALID ALARM:

- MONITOR MUP-1A BEARING OIL TEMPERATURES

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 70. CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE-UP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-30

SENSING ELEMENT: CS/SC, CS/O, CR1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-04-06	B-04-06
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AUX STEAM ISO
(ASV-195)
BYPASSED

EVENT POINT 1960

INDICATED CONDITION:

- CONTROL SWITCH FOR ASV-195 AUX STEAM SOLENOID VALVE IS THE OPEN/BYPASS POSITION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- ASV-195 SELECTOR SWITCH POSITION

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-608

DISCUSSION:

THIS ALARM INDICATES THAT THE AUTOMATIC CLOSURE OF ASV-195 ON HIGH OR LOW AUX STEAM PRESSURE IS DISABLED. THIS IS A HIGH ENERGY LINE BREAK CONCERN.

REFERENCES: DRAWING 208-008 SHEET AS-05

SENSING ELEMENT: CS/NC

ESB ANNUNCIATOR RESPONSE	ESA-KW2-05-02	B-05-02
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MAKEUP PP A
LUBE OIL PRESS
LOW

EVENT POINT 1031

INDICATED CONDITION:

- ES START SELECTOR SWITCH FOR MUP 1A/1B IS SELECTED TO MUP-1A AND LUBE OIL PRESS AS SENSED BY MU-42-PS3 IS <3 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- MUP-1A ES START SELECT WHITE INDICATING LIGHT ON
- MUP-3A BACK UP LUBE OIL PUMP AUTO STARTS

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE MUP-3A HAS STARTED

DISCUSSION:

THIS ALARM INDICATES THAT THERE IS INADEQUATE LUBRICATION FOR MUP-1A. IF THE PUMP IS RUNNING THEN IT SHOULD BE SECURED AND AN ALTERNATE MAKEUP PUMP STARTED, REFER TO OP-402 FOR DIRECTIONS ON STARTING MAKEUP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-01

SENSING ELEMENT: CS/3A, MU-42-PS3

ESB ANNUNCIATOR RESPONSE	ESA-KW2-05-03	B-05-03
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MAKEUP PP A
LUBE OIL PUMP
AUTO START

EVENT POINT 1051

INDICATED CONDITION:

- o MUP-3A CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION AND MOTOR IS ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A GREEN FLAG ON MUP-3A CONTROL STATION
- o COMPUTER POINT X071

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE MUP-3A IS RUNNING

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 71. CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE-UP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-31

SENSING ELEMENT: CS/ST, CS/ST, CS/O, CR1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-05-04	B-05-04
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MAKEUP PP A
OUT OF SERVICE

EVENT POINT 1032

INDICATED CONDITION:

- MUP-1A BREAKER HAS NO DC CONTROL POWER

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO RED OR GREEN INDICATING LIGHTS ON CONTROL STATION
- ES STATUS LIGHTS SHOW BREAKER POSITION

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY CLOSED DPDP-5A SWITCH 10
- VERIFY DC KNIFE SWITCH FOR MUP-1A BREAKER CLOSED

DISCUSSION:

THIS CONDITION DISABLES REMOTE BREAKER OPERATION AND PROTECTIVE RELAYING.
REFER TO OP-703 FOR INSTRUCTIONS ON LOCAL BREAKER OPERATION.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-01

SENSING ELEMENT: RELAY 27C LOCATED INSIDE BREAKER CUBICLE FOR MUP-1A

ESB ANNUNCIATOR RESPONSE	ESA-KW2-05-04	B-05-04
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MAKEUP PP A
OUT OF SERVICE

EVENT POINT 1034

INDICATED CONDITION:

- MUP-1A BREAKER IS RACKED OUT AND IS SELECTED FOR ES START

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO INDICATING LIGHTS ON CONTROL STATION
- NO ES STATUS INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE FOR BREAKER BEING RACKED OUT

DISCUSSION:

TWO PUMPS SHOULD BE SELECTED FOR ES START.
REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-01

SENSING ELEMENT: 43/3A CUBICLE 3A9, 52H/b CUBICLE 3A9 FOR MUP-1A

ESB ANNUNCIATOR RESPONSE	ESA-KW2-05-06	B-05-06
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[illegible]

AUX STEAM ISO
(ASV-195)
AUTO CLOSED

EVENT POINT 1815

INDICATED CONDITION:

- o CONTROL SWITCH FOR ASV-195 AUX STEAM SOLENOID VALVE IS IN THE AUTO POSITION AND THE VALVE IS CLOSED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ASV-195 SELECTOR SWITCH IN AUTO
- o GREEN INDICATOR LIGHT ON SELECTOR SWITCH

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-608

DISCUSSION:

THIS ALARM INDICATES THAT THE AUTOMATIC CLOSURE OF ASV-195 ON EITHER LOW AUX STEAM PRESSURE OR HIGH AUX STEAM PRESSURE HAS OCCURRED. A LOW PRESSURE ACTUATION OCCURS AT <100 PSIG AND A HIGH PRESSURE ISOLATION OCCURS AT >250 PSIG AUX STEAM HEADER PRESSURE IN THE AUX BUILDING.

REFERENCES: DRAWING 208-008 SHEET AS-05

SENSING ELEMENT: 3ASV-195-SV-1, 33C/ASV-195-SV, AS-36-PS1, AS-36-PS-3

ESB ANNUNCIATOR RESPONSE	ESA-KW2-06-01	B-06-01
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MAKEUP PP B
TRIP

EVENT POINT 1041

INDICATED CONDITION:

- MUP-1B 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 MUP-1B CONTROL STATION
- AMBER ES STATUS LIGHT

OPERATOR ACTIONS FOR A VALID ALARM:

- CLOSE MUV-16, AND MUV-31 AND MINIMIZE LETDOWN FLOW
- INVESTIGATE MUP-1B BREAKER FOR DROPPED TARGETS
- START ANOTHER MAKE-UP PUMP PER OP-402 IF CAUSE OF THIS TRIP WILL NOT TRIP ANOTHER PUMP

DISCUSSION:

EXERCISE CARE WHEN STARTING ALTERNATE MU PUMPS. ENSURE ANY FAILURES SUCH AS IMPROPER FLOWPATH, WHICH MAY HAVE DIRECTLY OR INDIRECTLY CAUSED THIS PUMP TO TRIP DO NOT CAUSE ALTERNATE PUMPS TO TRIP AFTER THEY ARE STARTED.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-02

SENSING ELEMENT: CS/SC, CS/O, 52H/B, 52S/B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-06-02	B-06-02
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MAKEUP PP B
GEAR OIL PRESS
LOW

EVENT POINT 1058

INDICATED CONDITION:

- MUP-1B BREAKER CLOSED ≥ 20 SECONDS WITH GEAR OIL PRESS ≤ 7 PSIG AS SENSED BY MU-89-PS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- MUP-5B BACK UP GEAR OIL PUMP AUTO STARTS
- COMPUTER POINT X068

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY MUP-5B BACK UP GEAR OIL PUMP STARTED
- MONITOR MUP-1B VIA COMPUTER GROUP 71

DISCUSSION:

THIS ALARM INDICATES THAT THERE MAY BE INADEQUATE LUBRICATION FOR THE SPEED INCREASER GEAR BOX, CONSIDERATION SHOULD BE GIVEN TO TRANSFERRING TO ANOTHER MAKEUP PUMP PER OP-402.

REFERENCES: DRAWING 208-041 SHEET MU-50

SENSING ELEMENT: CS/SC, CS/O, 52H/B, 52C/A, MU-89-PS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-06-03	B-06-03
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MAKEUP PP B
MOTOR
OVERLOAD

EVENT POINT 1039

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> ◦ MOTOR AMPS >115% RATED LOAD
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> ◦ HIGH MOTOR AMPS ◦ >540 GPM TOTAL INDICATED FLOW THROUGH MUP-1B ◦ MUP-1B TRIP
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> ◦ THROTTLE MAKEUP FLOW TO MAINTAIN <540 GPM FLOW PER AP-380 ◦ HAVE BREAKER CUBICLE CHECKED FOR DROPPED TARGETS
<p>DISCUSSION:</p> <p>THIS ALARM INDICATES THAT EITHER THE TIMED OVER CURRENT 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 208-041 SHEET MU-02</p>
<p>SENSING ELEMENT: 51 RELAY INSIDE BREAKER CUBICLE</p>

ESB ANNUNCIATOR RESPONSE	ESA-KW2-06-04	B-06-04
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MAKEUP PP B
LUBE OIL PUMP
TRIP

EVENT POINT 1049

INDICATED CONDITION:

- MUP-2B MOTOR IS NOT ENERGIZED WITH THE CONTROL HANDLE IN NORMAL AFTER START POSITION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION
- LOW LUBE OIL PRESSURE ALARM
- MUP-3B BACK-UP LUBE OIL PUMP AUTO START

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE MUP-3B BACK-UP LUBE OIL PUMP STARTED

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 71. CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE-UP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-05

SENSING ELEMENT: CS/SC, CS/O, 42B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-06-04	B-06-04
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MAKEUP PP B
LUBE OIL PUMP
TRIP

EVENT POINT 1054

INDICATED CONDITION:

- MUP-3B MOTOR IS NOT ENERGIZED WITH THE CONTROL HANDLE IN THE NORMAL AFTER START POSITION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT WITH A RED FLAG ON CONTROL STATION
- MAKEUP PUMP OIL PRESSURE LOW ALARM
- COMPUTER POINT X071

OPERATOR ACTIONS FOR A VALID ALARM:

- MONITOR MUP-1B PUMP TEMPS

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 71. CONSIDERATION SHOULD BE GIVEN TO SWAPPING MAKE-UP PUMPS.

REFERENCES: DRAWING 208-041 SHEET MU-31

SENSING ELEMENT: CS/SC, CS/O, CR1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-07-02	8-07-02
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MAKEUP PP B
LUBE OIL PRESS
LOW

EVENT POINT 1037

INDICATED CONDITION:

- o ES START SELECTOR SWITCH FOR MUP 1A/1B IS SELECTED TO MUP-1B AND THE OIL PRESS AS SENSED BY MU-45-PS3 IS <3 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o MUP-1B ES START SELECT WHITE INDICATING LIGHT ON
- o MUP-3B BACK UP LUBE OIL PUMP AUTO STARTS

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE MUP-3B HAS STARTED

DISCUSSION:

THIS ALARM INDICATES THAT THERE IS INADEQUATE LUBRICATION FOR MUP-1B. IF MUP-1B IS RUNNING THEN IT SHOULD BE SECURED AND AN ALTERNATE MAKEUP PUMP STARTED PER OP-402.

REFERENCES: DRAWING 208-041 SHEET MU-02

SENSING ELEMENT: 43CS/3B7-3B, MU-45-PS3

ESB ANNUNCIATOR RESPONSE	ESA-KW2-07-03	B-07-03
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MAKEUP PP B
LUBE OIL PUMP
AUTO START

EVENT POINT 1053

INDICATED CONDITION:

- MUP-3B CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION AND MOTOR IS ENERGIZED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT ON WITH A GREEN FLAG ON MUP-3B CONTROL STATION
- COMPUTER POINT X071

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE MUP-3A IS RUNNING

DISCUSSION:

THIS ALARM IS AN INDICATION OF INADEQUATE LUBRICATION TO THE MAKE-UP PUMP. MONITOR THE MAKE-UP PUMP VIA COMPUTER GROUP 71. CONSIDERATION SHOULD BE GIVEN TO STARTING ANOTHER MAKE-UP PUMP.

REFERENCES: DRAWING 208-041 SHEET MU-31

SENSING ELEMENT: CS/ST, CS/ST, CS/O, CR1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-07-04	B-07-04
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[illegible]

MAKEUP PP B
OUT OF SERVICE

EVENT POINT 1038

INDICATED CONDITION:

- o MUP-1B BREAKER HAS NO DC CONTROL POWER

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NO INDICATING LIGHTS ON CONTROL STATION
- o ES STATUS LIGHTS INDICATE BREAKER POSITION

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY CLOSED DPDP-5B SWITCH 10
- o VERIFY DC KNIFE SWITCH FOR MUP-1B BREAKER CLOSED

DISCUSSION:

THIS CONDITION DISABLES REMOTE BREAKER OPERATION AND PROTECTIVE RELAYING
REFER TO OP-703 FOR LOCAL BREAKER OPERATION. THIS IS AN EXPECTED ALARM FOR
BREAKER TAGGING OPERATIONS.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-02

SENSING ELEMENT: RELAY 27C LOCATED INSIDE BREAKER CUBICLE FOR MUP-1B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-07-04	B-07-04
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MAKEUP PP B
OUT OF SERVICE

EVENT POINT 1040

INDICATED CONDITION:

- MUP-1B BREAKER IS RACKED OUT AND MUP-1B IS SELECTED FOR ES START

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO INDICATING LIGHTS ON CONTROL STATION
- NO ES STATUS INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE FOR BREAKER BEING RACKED OUT

DISCUSSION:

TWO PUMPS SHOULD BE SELECTED FOR ES START.
REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-041 SHEET MU-021

SENSING ELEMENT: 43/3B ON CUBICLE 3A10, 52H/b IN CUBICLE 3A9 FOR MUP-1B

ESB ANNUNCIATOR RESPONSE	ESA-KW2-02-05	B-02-05
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[illegible]

RB FAN A
CONDENSATE
HIGH

EVENT POINT 1697

INDICATED CONDITION:

- 0 AHF-1A CONDENSATE FLOW IS >1133 CC PER MINUTE AS SENSED BY AH-656-FIS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING SUMP RATE OF RISE IS INCREASING AS SEEN ON BS-93-PIR

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE SOURCE OF CONDENSATE

DISCUSSION:

SOME SOURCES OF HIGH CONDENSATION ARE:

RCS LEAK IN CONTAINMENT - CHECK PZR LEVEL AND MAKE UP TANK LEVEL TRENDS;

FEEDWATER/MAIN STEAM LEAK IN CONTAINMENT - CHECK FEEDWATER FLOWRATES;

RB FAN COOLER SW LEAKS - CHECK SW SURGE TANK LEVEL IF ON SW, OR CI SURGE TANK LEVELS IF ON CI.

REFERENCES: DRAWING 208-005 SHEET AH-131

SENSING ELEMENT: AH-656-FIS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-07-07	B-07-07
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[illegible]

H2 SAMPLING
PANEL A
TROUBLE

EVENT POINT 0080

INDICATED CONDITION:

- o PASS RB H2 ANALYZER "A" MALFUNCTION
- o HIGH RB H2 CONCENTRATION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOSS OF POWER TO PANEL
- o OVERPRESSURE TO PANEL AT >4 PSIG
- o LOW FLOW TO PANEL AT <1 SCFH
- o THERMO ELECTRIC COOLER <0.1 AMPS
- o RB H2 CONCENTRATION >3%

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER VALVE LINEUP PER OP-417
- o NOTIFY I&C SUPERVISION OF H2 ANALYZER MALFUNCTION

DISCUSSION:

THIS ALARM INDICATES EITHER THE POST ACCIDENT H2 CONCENTRATION INSIDE THE RB IS HIGH, OR THE PASS H2 ANALYZER IS MALFUNCTIONING. STS ADMINISTRATIVE CONSIDERATION SHOULD BE MADE PRIOR TO REMOVING BOTH H2 SAMPLERS FROM SERVICE

REFERENCES: DRAWING 208-062 SHEET WS-04

SENSING ELEMENT: VARIOUS FLOW/PRESSURE/CURRENT SWITCHES INSIDE THE SAMPLER

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-01	B-08-01
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DIESEL GEN A
FAILED
TO START

EVENT POINT 1204

INDICATED CONDITION:

- o "A" EGDG HAS A START COMMAND AND LUBE OIL PRESSURE AS SENSED BY DL-9-PS IS <6 PSIG AFTER 7 SECONDS OR
- o "A" EGDG HAS A START COMMAND AND ENGINE SPEED AS SENSED BY EG-19-SS IS <250 RPM AFTER 7 SECONDS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o EGDG-1A TRIPS
- o CONTROL BOARD "CRANK" LIGHT GOES OUT AND WHITE "READY" LIGHT DOES NOT COME ON
- o EGDG-1A STARTING AIR PRESSURE LOW ALARM ANNUNCIATES

OPERATOR ACTIONS FOR A VALID ALARM:

- o INSPECT EGDG-1A FOR CAUSE OF FAILURE TO START
- o RESET PUSHBUTTON MUST BE DEPRESSED ON EGDG GAUGE BOARD PRIOR TO EGDG RESTART

DISCUSSION:

THIS ALARM INDICATES THE DIESEL TRIED TO START AND DID NOT. SOME POSSIBLE CAUSES OF THIS ARE: PROBLEMS WITH DIESEL FUEL SYSTEM, LUBE OIL SYSTEM PROBLEMS OR DIESEL SPEED SENSOR PROBLEMS.
THIS ALARM IS STILL ACTIVE WITH AN ES SIGNAL PRESENT BUT WILL NOT DE-ENERGIZE THE STARTING AIR SOLENOIDS, SO THE DIESEL WILL CRANK UNTIL IT EITHER STARTS OR RUNS OUT OF AIR.

REFERENCES: DRAWING 208-027 SHEET EG-17, EG-03, EG-01, EG-05

SENSING ELEMENT: DL-9-PS DL-19-SS, START FAIL RELAY

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-01	B-08-01
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DIESEL GEN A
FAILED
TO START

EVENT POINT 1214

INDICATED CONDITION:

- o "A" EGDG HAS TRIPPED IT'S PHASE DIFFERENTIAL CURRENT RELAY
- o "A" EGDG TRIPS AND BREAKER 3209 OPENS
- o "A" EGDG 86 LOCKOUT RELAY HAS ACTUATED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ES 4160V BUS 3A DE-ENERGIZES
- o CONTROL BOARD "RUN" LIGHT GOES OUT

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-790
- o INSPECT EGDG-1A FOR CAUSE OF DIFFERENTIAL CURRENT CONDITION
- o LOCKOUT RELAY MUST BE MANUALLY RESET ONCE PROBLEM IS RESOLVED.

DISCUSSION:

THIS ALARM INDICATES THE DIESEL GENERATOR HAS EITHER, A PHASE TO PHASE SHORT OR A PHASE TO GROUND SHORT. THIS CONDITION WILL TRIP THE DIESEL AND PREVENT IT FROM STARTING. THE CAUSE OF THIS PROBLEM MUST BE RESOLVED PRIOR TO ANY ATTEMPT BEING MADE TO RESTART AND RELOAD THE DIESEL GENERATOR.

REFERENCES: DRAWING 208-027 SHEET EG-15

SENSING ELEMENT: 86-DG-3A, 87A, 87B, 87C DIFFERENTIAL CURRENT RELAYS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-02	B-08-02
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DIESEL GEN A
TROUBLE

EVENT POINT 1202

INDICATED CONDITION:

- "A" EGDG LUBE OIL TEMP AS SENSED BY DL-11-TS IS <110° F 03
- "A" EGDG JACKET COOLANT TEMP AS SENSED BY DJ-28-TS <115° F

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- LOCAL TEMP INDICATION FOR LUBE OIL OR JACKET COOLANT TEMPS LOW
- DIESEL GENERATOR ALARM PANEL DROP TARGET FOR LOW LUBE OIL/JACKET COOLANT TEMP.

OPERATOR ACTIONS FOR A VALID ALARM:

- INSURE PROPER OPERATION OF LUBE OIL HEATERS DLHE-3
- INSURE PROPER OPERATION OF JACKET COOLANT HEATER DJHE-1
- REFER TO OP-707

DISCUSSION:

EGDG LUBE OIL TEMP MUST BE MAINTAINED >110° F
REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS

REFERENCES: DRAWING 208-027 SHEET EG-07

SENSING ELEMENT: DL-11-TS, DJ-28-TS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-02	B-08-02
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DIESEL GEN A
TROUBLE

EVENT POINT 1205

INDICATED CONDITION:

- "A" EGDG LOCAL ALARM PANEL HAS A DROPPED TARGET

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INFORMED BY THE PRIMARY PLANT OPERATOR OF EGDG-1A LOCAL ALARM PANEL DROP TARGET.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY PRIMARY PLANT OPERATOR TO INVESTIGATE CAUSE OF DROP TARGET.
- REFER TO AR-901

DISCUSSION:

THIS ALARM INDICATES A DIESEL GENERATOR LOCAL ANNUNCIATOR DROP TARGET HAS DROPPED. IMMEDIATE INVESTIGATION OF ALARM CAUSE SHOULD BE INITIATED.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-027 SHEET EG-17

SENSING ELEMENT: VARIOUS SENSORS ASSOCIATED WITH LOCAL ALARM PANEL

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-03	B-08-03
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DIESEL GEN A
OUT OF SERVICE

EVENT POINT 1195

INDICATED CONDITION:

- o "A" EGDG HAS HAD A LOSS OF DC CONTROL POWER

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o EGDG-1A STARTS WITH NO AUTO START SIGNAL
- o EGDG-1A CONTROL CIRCUIT INDICATOR LIGHTS ON MAIN CONTROL BOARD OR INSIDE THE DIESEL GENERATOR ROOM ARE OFF

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY DPDP-6A SWITCHES 12 AND 14 ARE CLOSED
- o CHECK EGDG-1A CONTROL POWER FUSES

DISCUSSION:

A LOSS OF DC CONTROL POWER WILL EFFECT THE DIESEL DIFFERENTLY DEPENDING ON WHICH CIRCUIT LOSES POWER. IF ALL DC POWER IS LOST THE DIESEL WILL START AND YOU WILL ONLY BE ABLE TO SHUT IT DOWN LOCALLY BY TRIPPING THE FUEL RACKS. IF OTHER FUSES ARE BLOWN THE EFFECT WILL VARY FROM LOSS OF GOVERNOR CONTROL TO A LOSS OF PROTECTIVE RELAYING ASSOCIATED WITH THE DIESEL. THE CAUSE OF THIS ALARM SHOULD BE INVESTIGATED IMMEDIATELY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-027 SHEET EG-17, EG-03, EG-09, EG-05, EG-15

SENSING ELEMENT: A,B,C,D,E, LOSS OF POWER RELAYS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-03	B-08-03
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DIESEL GEN A
OUT OF SERVICE

EVENT POINT 1206

INDICATED CONDITION:

- o "A" EGDG START AIR AS SENSED BY EG-11-PS IS <225 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW AIR PRESSURE
- o VERIFY EGDG-1A AIR COMPRESSOR, EGP-1A RUNNING
- o CHECK EGDG-1A FOR AIR LEAKS

DISCUSSION:

A LOSS OF STARTING AIR WILL EVENTUALLY CAUSE THE DIESEL TO START WHEN PRESSURE IS NO LONGER HIGH ENOUGH TO HOLD THE AUTO START VALVES CLOSED. IF EGP-1A IS OUT OF SERVICE THEN CONSIDERATION SHOULD BE GIVEN TO CROSS CONNECTING THE DIESEL START AIR SYSTEMS BY OPENING EGV-25 AND EGV-26.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-027 SHEET EG-17, EG-07

SENSING ELEMENT: EG-11-PS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-03	B-08-03
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DIESEL GEN A
OUT OF SERVICE

EVENT POINT 1207

INDICATED CONDITION:

- o ANY "A" EGDG AUTO/MANUAL CONTROL SWITCH NOT IN THE AUTO POSITION

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NOTIFIED BY PRIMARY PLANT OPERATOR EGDG-1A CONTROL SWITCH NOT IN AUTO

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY PRIMARY PLANT OPERATOR TO RETURN CONTROL SWITCH TO AUTO

DISCUSSION:

THE FOLLOWING SWITCHES NOT IN AUTO WILL GIVE YOU THIS ALARM:

JACKET COOLING PUMP	JACKET COOLANT HEATER	STANDBY LUBE OIL PUMP
DC FUEL OIL PUMP	DC FUEL OIL XFER PUMP	AC FUEL OIL XFER PUMP
AC AIR COMPRESSOR	DIESEL AUTO/MAN (MCB)	

NORMAL/AT ENGINE SWITCH ON DIESEL GAUGE BOARD IN "AT ENGINE"

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-027 SHEET EG-17, EG-07

SENSING ELEMENT: VARIOUS EGDG-1A CONTROL SWITCH CONTACTS

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-04	B-08-04
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CF TANK A
LEVEL
HIGH/LOW

EVENT POINT 0109

INDICATED CONDITION:

- o CFT-1A LEVEL AS SENSED BY CF-2-LS1 IS >13.2 FEET

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-2-LI1 OR CF-2-LI2
- o COMPUTER POINT P200

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL LEVEL
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

A HIGH CORE FLOOD TANK LEVEL MAY INDICATE CORE FLOOD CHECK VALVES OR CORE FLOOD ADDITION VALVES ARE LEAKING BY. OBSERVE MAKEUP TANK LEVEL AND PRESSURIZER LEVEL TO VERIFY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-2-LS1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-04	B-08-04
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CF TANK A
LEVEL
HIGH/LOW

EVENT POINT 0110

INDICATED CONDITION:

- o CFT-1A LEVEL AS SENSED BY CF-2-LS2 IS >13.2 FEET

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-2-LI1 OR CF-2-LI2
- o COMPUTER POINT P200

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL LEVEL
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

HIGH CORE FLOOD TANK LEVEL MAY INDICATE CORE FLOOD CHECK VALVES OR CORE FLOOD ADDITION VALVES LEAKING BY. OBSERVE MAKEUP TANK LEVEL AND PRESSURIZER LEVEL TO VERIFY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-2-LS2

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-04	B-08-04
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CF TANK A
LEVEL
HIGH/LOW

EVENT POINT 0111

INDICATED CONDITION:

- o CFT-1A LEVEL AS SENSED BY CF-2-LS1 IS <12.8 FEET

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-2-LI1 OR CF-2-LI2
- o COMPUTER POINT P200

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL LEVEL
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

A LOW CORE FLOOD TANK LEVEL MAY INDICATE CORE FLOOD ISOLATION VALVES OR CFT SAMPLE ISOLATION VALVES ARE LEAKING BY. OBSERVE MAKEUP TANK LEVEL AND PRESSURIZER LEVEL TO VERIFY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-2-LS1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-04	B-08-04
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CF TANK A
LEVEL
HIGH/LOW

EVENT POINT 0112

INDICATED CONDITION:

- o CFT-1A LEVEL AS SENSED BY CF-2-LS2 IS <12.8 FEET

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-2-LI1 OR CF-2-LI2
- o COMPUTER POINT P200

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL LEVEL

DISCUSSION:

A LOW CORE FLOOD TANK LEVEL MAY INDICATE CORE FLOOD ISOLATION VALVES OR CFT SAMPLE ISOLATION VALVES ARE LEAKING BY. OBSERVE MAKEUP TANK LEVEL AND PRESSURIZER LEVEL TO VERIFY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-2-LS2

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-05	B-08-05
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[illegible]

CF TANK A
PRESS
HIGH/LOW

EVENT POINT 0105

INDICATED CONDITION:

- 0 CFT-1A PRESSURE AS SENSED BY CF-1-PS1 IS >615 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-1-PI1 OR CF-1-PI2

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL PRESSURE
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

INCREASING REACTOR BUILDING TEMPERATURES, NITROGEN VALVE LEAKBY FROM N2 BOTTLES, OR INCREASING CFT WATER LEVEL MAY CAUSE CORE FLOOD TANK PRESSURES TO RISE.

PRESSURE LIMITS ARE ESTABLISHED PER STS, REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-1-PSI

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-05	B-08-05
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[illegible]

CF TANK A
PRESS
HIGH/LOW

EVENT POINT 0106

INDICATED CONDITION:

- Q CFT-1A PRESSURE AS SENSED BY CF-1-PS2 IS >615 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-1-PI1 OR CF-1-PI2

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL PRESSURE
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

INCREASING REACTOR BUILDING TEMPERATURES, NITROGEN VALVE LEAKBY FROM N2 BOTTLES OR INCREASING CFT WATER LEVEL MAY CAUSE CORE FLOOD TANK PRESSURES TO RISE.

PRESSURE LIMITS ARE ESTABLISHED PER STS, REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-1-PS2

ESB ANNUNCIATOR RESPONSE

ESA-KW2-08-05

B-08-05

[illegible]

CF TANK A
PRESS
HIGH/LOW

EVENT POINT 0107

INDICATED CONDITION:

- o CFT-1A PRESSURE AS SENSED BY CF-1-PS1 IS <585 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-1-PI1 OR CF-1-PI2

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL PRESSURE
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

DECREASING REACTOR BUILDING TEMPERATURES OR DECREASING CORE FLOOD TANK LEVELS MAY CAUSE CORE FLOOD TANK PRESSURE TO DECREASE.

PRESSURE LIMITS ARE ESTABLISHED PER STS, REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-1-PS1

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-05	8-08-05
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CF TANK A
PRESS
HIGH/LOW

EVENT POINT 0108

INDICATED CONDITION:

- o CFT-1A PRESSURE AS SENSED BY CF-1-PS2 IS <585 PSIG

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATORS CF-1-PI1 OR CF-1-PI2

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RETURN CORE FLOOD TANK TO NORMAL PRESSURE
- o REFER TO OP-401 FOR THIS CONDITION

DISCUSSION:

DECREASING REACTOR BUILDING TEMPERATURES OR DECREASING CORE FLOOD TANK LEVELS MAY CAUSE CORE FLOOD TANK PRESSURE TO DECREASE.

PRESSURE LIMITS ARE ESTABLISHED PER STS, REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: CF-1-PS2

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-06	B-08-06
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[illegible]

CF TANK A
DISCH VALVE
OPEN/CLOSED

EVENT POINT 0101

INDICATED CONDITION:

- o RCS PRESSURE AS SENSED BY RC-3A-PS3 IS <700 PSIG AND CFV-5 IS NOT FULL CLOSED

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o CONTROL BOARD INDICATOR RC-158-PI2 AND CFV-5 POSITION INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- 0 CLOSE CFV-5 OR STOP RCS PRESSURE DECREASE

DISCUSSION:

CFV-5 MOTOR IS NORMALLY DE-ENERGIZED. THE BREAKER WILL HAVE TO BE CLOSED AT ES MCC 3AB PRIOR TO VALVE OPERATION.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: RC-3A-PS3, 33C VALVE CLOSED CONTACT

ESB ANNUNCIATOR RESPONSE	ESA-KW2-08-06	B-08-06
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CF TANK A
DISCH VALVE
OPEN/CLOSED

EVENT POINT 0102

INDICATED CONDITION:

- RCS PRESSURE AS SENSED BY RC-3A-PS3 IS >715 PSIG AND CFV-5 IS NOT FULL OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- CONTROL BOARD INDICATOR RC-158-PI2 AND CFV-5 POSITION INDICATION

OPERATOR ACTIONS FOR A VALID ALARM:

- OPEN CFV-5 OR STOP RCS PRESSURE INCREASE

DISCUSSION:

CFV-5 MOTOR IS NORMALLY DEENERGIZED. THE BREAKER WILL HAVE TO BE CLOSED AT ES MCC 3AB PRIOR TO VALVE OPERATION.

REFERENCES: DRAWING 208-013 SHEET CF-13

SENSING ELEMENT: RC-3A-PS3, 33 VALVE OPEN CONTACT