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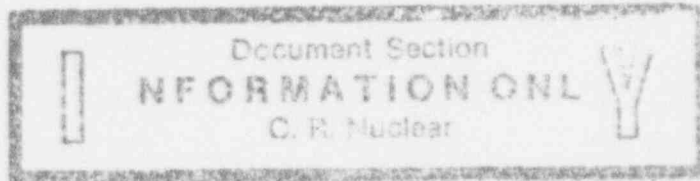
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PDR

Flow 7/1

Rev. 9 08/12/93

Effective Date 8/23/93



ANNUNCIATOR RESPONSE

AR-502

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ICS J ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

In lieu for Bill Marshall

DATE:

8/23/93

INTERPRETATION CONTACT: Manager, Nuclear Plant Operations

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1.0 PURPOSE

- 1.1 Establish a reference document for each Annunciator Window on the ICS-CY2 Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ICS-CY2 Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ICS-CY2 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

- 2.1.1 OP-301, Reactor Coolant System
- 2.1.2 OP-502, Control Rod Drive System
- 2.1.3 OP-503, Plant Computer
- 2.1.4 OP-507, Infrequent Operations of the ES and Reactor Protective Systems
- 2.1.5 AP-545, Plant Runback
- 2.1.6 EOP, Emergency Operating Procedure

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 ICS-CY2 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-01	J-01-01
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[illegible]

DSS
CHANNEL
TRIP

EVENT POINT 1306

INDICATED CONDITION:

- o DSS CHANNEL "A" TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE >2450 PSIG AS SENSED BY RC-158-PT.
- o RED TRIP LIGHT ON DSS MODULE IN ATWS LOGIC CABINET IN C EFIC ROOM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO EOP-02.

DISCUSSION:

BOTH CHANNELS OF DSS ARE REQUIRED TO BE TRIPPED TO ACTUATE DSS.
UPON DSS ACTUATION ROD GROUPS 5,6,7 AND ANY RODS ON THE AUX POWER SUPPLY
WILL DROP INTO THE CORE.
TO RESET THIS CONDITION THE RESET PUSHBUTTON MUST BE DEPRESSED.

REFERENCES: DRAWING 208-074 SHEET SP-01

SENSING ELEMENT: DSS K-1 RELAYS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-01	J-01-01
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DSS
CHANNEL
TRIP

EVENT POINT 1318

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o DSS CHANNEL "B" TRIPPED.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE >2450 PSIG AS SENSED BY RC-159-PT. o RED TRIP LIGHT ON DSS MODULE IN ATWS LOGIC CABINET IN C EFIC ROOM.
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO EOP-02.
<p>DISCUSSION:</p> <p>BOTH CHANNELS OF DSS ARE REQUIRED TO BE TRIPPED TO ACTUATE DSS. UPON DSS ACTUATION ROD GROUPS 5,6,7 AND ANY RODS ON THE AUX POWER SUPPLY WILL DROP INTO THE CORE. TO RESET THIS CONDITION THE RESET PUSHBUTTON MUST BE DEPRESSED.</p>
<p>REFERENCES: DRAWING 208-074 SHEET SP-02</p>
<p>SENSING ELEMENT: DSS K-1 RELAYS</p>

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-02	J-01-02
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DSS
CHANNEL
IN TEST

EVENT POINT 1201

INDICATED CONDITION:

- o DSS SYSTEM "A" IN TEST.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED "TEST" LIGHT IS ON, LOCATED ON THE SYSTEM MONITORING CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY DSS SYSTEM "A" REQUIRED TO BE IN TEST.

DISCUSSION:

DSS IS A TWO OUT OF TWO ACTUATION SYSTEM, WITH ONE DSS SYSTEM IN TEST THE DSS SYSTEM CANNOT ACTUATE.

REFERENCES: DRAWING 208-074 SHEET SP-01

SENSING ELEMENT: KA-1 RELAY

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-02	J-01-02
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DSS
CHANNEL
IN TEST

EVENT POINT 1234

INDICATED CONDITION:

- o DSS SYSTEM "B" IN TEST.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED "TEST" LIGHT IS ON, LOCATED ON THE SYSTEM MONITORING CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY DSS SYSTEM "B" REQUIRED TO BE IN TEST.

DISCUSSION:

DSS IS A TWO OUT OF TWO ACTUATION SYSTEM, WITH ONE DSS SYSTEM IN TEST THE DSS SYSTEM CANNOT ACTUATE.

REFERENCES: DRAWING 208-074 SHEET SP-02

SENSING ELEMENT: KB-1

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-03	J-01-03
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ATWS
TROUBLE

EVENT POINT 1505

INDICATED CONDITION:

- o ATWS CHANNEL "A" POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NO ALARM OR INDICATING LIGHTS ON ATWS CHANNEL A.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY ACDP-64 BREAKER 8 CLOSED.
- o NOTIFY I & C SHOP TO INVESTIGATE LOSS OF POWER.

DISCUSSION:

ATWAS IS AN ENERGIZE TO ACTUATE SYSTEM, AND WILL NOT FUNCTION IN THIS CONDITION.

ATWAS IS COMPRISED OF TWO SUBSYSTEMS:

DSS - TRIPS ROD GROUPS 5, 6, AND 7 IF RCS PRESSURE EXCEEDS 2450 PSIG.

AMSAC- TRIPS THE TURBINE AND INITIATES EFIC IF: FEEDWATER FLOW IS <17% ON BOTH MAIN AND STARTUP FLOW TRANSMITTERS, AND REACTOR POWER IS >25% ON NI-15/14 ATWS (NI-15 ATWS CHANNEL A, NI-14 ATWS CHANNEL B).

REFERENCES: DRAWING 208-074 SHEET SP-03

SENSING ELEMENT: AT-008 FS (POWER SENSING RELAY)

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-03	J-01-03
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ATWS
TROUBLE

EVENT POINT 1506

INDICATED CONDITION:

- o ATWS CHANNEL "B" POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NO ALARM OR INDICATING LIGHTS ON ATWS CHANNEL B.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY ACDP-64 BREAKER 16 CLOSED.
- o NOTIFY I & C SHOP TO INVESTIGATE LOSS OF POWER.

DISCUSSION:

ATWS IS AN ENERGIZE TO ACTUATE SYSTEM, AND WILL NOT FUNCTION IN THIS CONDITION.

ATWS IS COMPRISED OF TWO SUBSYSTEMS:

DSS - TRIPS ROD GROUPS 5, 6, AND 7 IF RCS PRESSURE EXCEEDS 2450 PSIG.

AMSAC- TRIPS THE TURBINE AND INITIATES EFIC IF: FEEDWATER FLOW IS <17% ON BOTH MAIN AND STARTUP FLOW TRANSMITTERS, AND REACTOR POWER IS >25% ON NI-15/14 ATWS (NI-15 ATWS CHANNEL A, NI-14 ATWS CHANNEL B).

REFERENCES: DRAWING 208-074 SHEET SP-03

SENSING ELEMENT: AT-008 FS (POWER SENSING RELAY)

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-03	J-01-03
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ATWS
TROUBLE

EVENT POINT 1507

INDICATED CONDITION:

- o ATWS POWER ON BATTERY BACKUP.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY ACDP-64 BREAKER 16 AND 8 CLOSED.
- o NOTIFY I & C SHOP TO INVESTIGATE LOSS OF POWER.

DISCUSSION:

ATWS BATTERY PROVIDES 30 MINUTES OF POWER TO THE CABINET, AND IS LOCATED IN THE "B" EFIC ROOM ATWS CABINET.

ATWS IS AN ENERGIZE TO ACTUATE SYSTEM, AND WILL NOT FUNCTION WHEN THE BATTERY HAS COMPLETELY DISCHARGED.

ATWS IS COMPRISED OF TWO SUBSYSTEMS:

DSS - TRIPS ROD GROUPS 5, 6, AND 7 IF RCS PRESSURE EXCEEDS 2450 PSIG.

AMSAC- TRIPS THE TURBINE AND INITIATES EFIC IF: FEEDWATER FLOW IS <17% ON BOTH MAIN AND STARTUP FLOW TRANSMITTERS, AND REACTOR POWER IS >25% ON NI-15/14 ATWS (NI-15 ATWS CHANNEL A, NI-14 ATWS CHANNEL B).

REFERENCES: DRAWING 208-074 SHEET SP-03

SENSING ELEMENT: AT-008 FS (POWER SENSING RELAY)

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-01-05	J-01-05
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CORE POWER
DISTRIBUTION
TROUBLE

EVENT POINT 1986

INDICATED CONDITION:

- o QUADRANT POWER TILT >3.329%
- o QUADRANT POWER TILT >8%
- o CONTROL ROD GROUP POSITION VIOLATES ROD INDEX LIMITS.
- o POWER IMBALANCE EXCEEDS LIMITS.
- o REACTOR POWER >102% RTP.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o POWER DISTRIBUTION INDICATIONS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO CORE OPERATING LIMITS REPORT, COLR.
- o REFER TO STS FOR OPERATIONAL ACTIONS REQUIRED.
- o CONTACT THE REACTOR ENGINEER.

DISCUSSION:

THIS ALARM INDICATES THE PLANT COMPUTER SENSES CORE CONDITIONS OUTSIDE NORMAL BOUNDARIES.

REFERENCES:

SENSING ELEMENT: COMPUTER POINTS M-142, M-143, M-144, M-145, M-146

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-01	J-02-01
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RCS
PRESS
LOW-LOW

EVENT POINT 1363

INDICATED CONDITION:

- o RCS LOOP "A" PRESSURE <1550 PSIG AS SENSED BY RC-3A-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS WIDE RANGE PRESSURE INDICATORS AND RECORDERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF PRESSURE DECREASE.
- o CONTROL RCS PRESSURE USING MAKE/UP, LETDOWN, AND PRESSURIZER HEATERS.

DISCUSSION:

THIS ALARM INDICATES ES ACTUATION IS ABOUT TO OCCUR IF NOT BYPASSED.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-3A-PS2

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-02	J-02-02
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ROD HOLD
STARTUP RATE
HIGH

EVENT POINT 0961

INDICATED CONDITION:

- o HIGH STARTUP RATE OF >2 DPM ON NI-1 OR NI-2, OR >3 DPM ON NI-3 OR NI-4.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH SUR ON STARTUP RATE INDICATORS NI-1-DNI, NI-2-DNI, NI-3-DNI, NI-4-DNI.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INSERT CONTROL RODS TO REDUCE STARTUP RATE.
- o VERIFY NO POSITIVE REACTIVITY ADDITIONS IN PROGRESS.
- o REFER TO EOP.

DISCUSSION:

THIS ALARM INDICATES THE CONTROL ROD WITHDRAWAL HAS BEEN INHIBITED.
THIS ALARM WILL CLEAR WHEN STARTUP RATE DROPS TO 1 DPM.

WHEN THE SOURCE RANGE REENERGIZES FOLLOWING A REDUCTION IN POWER TO THE
SOURCE RANGE THE VOLTAGE SPIKE OF NI-1 AND NI-2 WILL FLASH THIS ALARM.

REFERENCES: CONTROL ROD DRIVE LOGIC DRAWINGS

SENSING ELEMENT: CONTROL ROD DRIVE RELAYS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-03	J-02-03
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CRD
OUT
INHIBIT

EVENT POINT 1235

INDICATED CONDITION:

ANY ONE OF THE FOLLOWING:

- SOURCE RANGE STARTUP RATE >2 DPM
- INTERMEDIATE RANGE STARTUP RATE >3 DPM
- ICS IN AUTO WITH RX PWR $>60\%$ AND EITHER:
SAFETY RODS NOT ON THE OUT LIMIT OR AN ASYMMETRIC ROD PATTERN EXISTS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OUT INHIBIT AMBER INDICATION ON DIAMOND CONTROL PANEL.
- o ROD POSITION INDICATION ON DIAMOND CONTROL PANEL.
- o STARTUP RATE INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF AN ASYMMETRIC CONDITION EXISTS REFER TO AP-545.
- o STOP POSITIVE REACTIVITY ADDITIONS AND REFER TO EOP.

DISCUSSION:

OUT MOTION OF THE CONTROL RODS IS INHIBITED IN AUTO OR MANUAL UNTIL THIS CONDITION IS CLEARED.

REFERENCES: CONTROL ROD DRIVE DRAWINGS.

SENSING ELEMENT: CONTROL ROD DRIVE INHIBIT RELAYS.

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-04	J-02-04
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CRD
ASYMMETRIC
FAULT

EVENT POINT 1242

INDICATED CONDITION:

- o ONE OR MORE CONTROL RODS >9" MISALIGNED FROM ITS RESPECTIVE GROUP AVERAGE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ASYMMETRIC ROD INDICATION ON DIAMOND CONTROL PANEL.
- o >6.5% INDEX DIFFERENCE BETWEEN ONE OR MORE CONTROL RODS ON THE DIAMOND INDICATOR PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.
- o REFER TO OP-502 FOR RECOVERY OF MISALIGNED CONTROL RODS.

DISCUSSION:

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.
CONTROL ROD HEIGHT OF 9" IS EQUIVALENT TO 6.5% INDEX.

REFERENCES: CONTROL ROD DRIVE DRAWINGS

SENSING ELEMENT: CONTROL ROD DRIVE ALARM RELAYS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-05	J-02-05
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[illegible]

CRD
POWER
FAULT

EVENT POINT 1236

INDICATED CONDITION:

- o LOSS OF + OR - 24V LOGIC POWER SUPPLIES A/B.
- o LOSS OF + OR - 24V SYSTEM POWER SUPPLIES A/B.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOSS OF POWER SUPPLY LIGHT ON DIAMOND CONTROL PANEL.
- o LOCAL 24V POWER SUPPLY INDICATION IN THE CRD ROOM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY ELECTRIC SHOP CONCERNING THIS CONDITION.

DISCUSSION:

THE LOSS OF A SINGLE 24V POWER WILL NOT EFFECT CRD OPERATION.

REFERENCES: CONTROL ROD DRIVE SYSTEM DRAWINGS

SENSING ELEMENT: CONTROL ROD DRIVE SYSTEM ALARM RELAY

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-02-06	J-02-06
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[illegible]

CRD AC DC BKR
SHUNT TRIP
LOSS OF PWR

EVENT POINT 0790

INDICATED CONDITION:

- o CRD SHUNT TRIP LOSS OF DC POWER.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o WHITE POWER INDICATING LIGHT IS OFF, LOCATED ON THE SHUNT TRIP PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY DPDP-5B SWITCH 30 CLOSED.
- o VERIFY DPDP-5A SWITCH 8 CLOSED.

DISCUSSION:

SHUNT TRIP IS AN ENERGIZE TO ACTUATE CIRCUIT.
THIS CONDITION WILL NOT ALLOW THE SHUNT TRIP DEVICES TO FUNCTION.

REFERENCES: DRAWING 208-024 SHEET DR-03

SENSING ELEMENT: KSTP-1

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-01	J-03-01
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RCS
PRESS
HIGH

EVENT POINT 1362

INDICATED CONDITION:

- o LOOP "A" RCS PRESSURE >2255 PSIG AS SENSED BY RC-3A-PS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE INDICATORS AND RECORDERS.
- o PRESSURIZER SPRAY VALVE, RCV-14, IN AUTO WILL STROKE TO 40% OPEN.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PRESSURIZER HEATERS OFF.
- o REFER TO OP-301 FOR RCS HIGH PRESSURE GUIDANCE.

DISCUSSION:

PRESSURIZER SPRAY VALVE OPENS AT 2205 PSIG AND CLOSES AT 2155 PSIG.
PORV OPENS AT 2450 PSIG AND CLOSES AT 2380 PSIG.
REACTOR TRIP ON HIGH RCS PRESSURE AT 2355 PSIG.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-3A-PS1

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-01	J-03-01
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RCS
PRESS
HIGH

EVENT POINT 1364

INDICATED CONDITION:

- o LOOP "B" RCS PRESSURE >2255 PSIG AS SENSED BY RC-3B-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE INDICATORS AND RECORDERS.
- o PRESSURIZER SPRAY VALVE, RCV-14, IN AUTO WILL STROKE TO 40% OPEN.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PRESSURIZER HEATERS OFF.
- o REFER TO OP-301 FOR RCS HIGH PRESSURE GUIDANCE.

DISCUSSION:

PRESSURIZER SPRAY VALVE OPENS AT 2205 PSIG AND CLOSES AT 2155 PSIG.
PORV OPENS AT 2450 PSIG AND CLOSES AT 2380 PSIG.
REACTOR TRIP ON HIGH RCS PRESSURE AT 2355 PSIG.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-3B-PS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-02	J-03-02
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RCS
T_h TEMP
HIGH

EVENT POINT 1369

INDICATED CONDITION:

- o RCS OUTLET TEMPERATURE >605°F AS SENSED BY RC-4-TS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RC T_h INDICATORS AND RECORDERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REDUCE T_{ave} TO NORMAL VALUE.
- o REDUCE REACTOR POWER AS REQUIRED.

DISCUSSION:

REACTOR WILL TRIP WHEN T_{hot} REACHES 618° F.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION, (DNB PARAMETERS).

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-4-TS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-03	J-03-03
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RCS
FLOW
LOW

EVENT POINT 1366

INDICATED CONDITION:

- o RCS LOOP "A" FLOW <95% FULL FLOW AS SENSED BY RC-14A-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RC FLOW INDICATORS AND RECORDERS.
- o RC PUMP AMPS NOT NORMAL.
- o RC PUMP TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF RC PUMP TRIPS REFER TO AP-545.
- o IF Tave TRANSFERS STABILIZE RCS PRESSURE.

DISCUSSION:

Tave WILL TRANSFER FROM THE LOOP WITH LOW FLOW AND WILL NOT TRANSFER BACK TO THAT LOOP.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-14A-FS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-03	J-03-03
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[illegible]

RCS
FLOW
LOW

EVENT POINT 1367

INDICATED CONDITION:

- o RCS LOOP "B" FLOW <95% FULL FLOW AS SENSED BY RC-14B-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RC FLOW INDICATORS AND RECORDERS.
- o RC PUMP AMPS NOT NORMAL.
- o RC PUMP TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF RC PUMP TRIPS REFER TO AP-545.
- o IF Tave TRANSFERS STABILIZE RCS PRESSURE.

DISCUSSION:

TAVE WILL TRANSFER FROM THE LOOP WITH LOW FLOW AND WILL NOT TRANSFER BACK TO THAT LOOP.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-14B-FS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-03	J-03-03
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RCS
FLOW
LOW

EVENT POINT 1368

INDICATED CONDITION:

- o RCS TOTAL FLOW <95% FULL FLOW AS SENSED BY RC-13-FS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RC FLOW INDICATORS AND RECORDERS.
- o RC PUMP AMPS NOT NORMAL.
- o RC PUMP TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF RC PUMP TRIPS REFER TO AP-545.
- o IF Tave TRANSFERS STABILIZE RCS PRESSURE.

DISCUSSION:

Tave WILL TRANSFER FROM THE LOOP WITH LOW FLOW AND WILL NOT TRANSFER BACK TO THAT LOOP.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-13-FS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-03-05	J-03-05
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CRD
CONTROL
FAULT

EVENT POINT 1237

INDICATED CONDITION:

- o CRD VOLTAGE REGULATOR A/B OVERTEMP.
- o ROD DRIVE MOTOR SUPPLIES BLOWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o MOTOR SUPPLIES FAULT LIGHT IS ON, LOCATED ON THE DIAMOND ROD CONTROL PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THE VOLTAGE REGULATOR AND MOTOR COOLING FANS ARE LOCATED IN THE CRD ROOM.

THIS ALARM WILL ALSO BE RECEIVED WHENEVER A OR B CRD BREAKER IS OPEN. THIS CONDITION DE-ENERGIZES THE ALARM LOGIC WHICH WILL ACTUATE THE ALARM.

REFERENCES: CONTROL ROD DRIVE DRAWINGS

SENSING ELEMENT: CONTROL ROD DRIVE SYSTEM ALARM RELAYS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-04-01	J-04-01
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[illegible]REACTOR
TRIP

EVENT POINT 1244

INDICATED CONDITION:

- o TRIP CONFIRM LOGIC (HOURGLASS) HAS BEEN SATISFIED VERIFYING THAT ROD AC AND DC BREAKERS ARE OPEN AND ALL RODS WILL BE DEENERGIZED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ABSOLUTE ROD POSITION INDICATE CONTROL ROD GROUPS 1,2,3,4,5,6, AND 7 ARE FULLY INSERTED.
- o LOCAL CRD BREAKER STATUS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO EOP-02.

DISCUSSION:

TRIP CONFIRM WILL ACTIVATE THE REACTOR TRIP LOCKOUT.

REFERENCES: CONTROL ROD DRIVE DRAWINGS

SENSING ELEMENT: K-5 CONTROL ROD DRIVE RELAYS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-04-02	J-04-02
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RCS
PRESS
LOW

EVENT POINT 1361

INDICATED CONDITION:

- o LOOP "A" RCS PRESSURE <2055 PSIG AS SENSED BY RC-3A-PY1-5,

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE INDICATORS AND RECORDERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE ALL PRESSURIZER HEATERS ON.
- o MANUALLY CLOSE PRESSURIZER SPRAY VALVE, RCV-14.
- o CLOSE SPRAY BLOCK VALVE, RCV-13.
- o CLOSE PORV BLOCK VALVE, RCV-11.
- o REFER TO OP-301 FOR RCS LOW PRESSURE GUIDELINES.

DISCUSSION:

LOW PRESSURIZER TEMPERATURES CAN LEAD TO LOW RCS PRESSURE CONDITIONS,
LARGE PRESSURIZER INSURGES SHOULD BE AVOIDED.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-3A-PY1-5

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-04-02	J-04-02
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RCS
PRESS
LOW

EVENT POINT 1365

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o LOOP "B" RCS PRESSURE <2055 PSIG AS SENSED BY RC-3B-PY1-5,
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE INDICATORS AND RECORDERS.
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o ENSURE ALL PRESSURIZER HEATERS ON. o MANUALLY CLOSE PRESSURIZER SPRAY VALVE, RCV-14. o CLOSE SPRAY BLOCK VALVE, RCV-13. o CLOSE PORV BLOCK VALVE, RCV-11. o REFER TO OP-301 FOR RCS LOW PRESSURE GUIDELINES.
<p>DISCUSSION:</p> <p>LOW PRESSURIZER TEMPERATURES CAN LEAD TO LOW RCS PRESSURE CONDITIONS, LARGE PRESSURIZER INSURGES SHOULD BE AVOIDED.</p>
<p>REFERENCES: DRAWING 208-047 SHEET RC-027</p>
<p>SENSING ELEMENT: RC-3B-PY1-5</p>

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-04-05	J-04-05
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OPERATOR SEL
COMPUTER
ALARM

EVENT POINT 0810

INDICATED CONDITION:

- o OPERATOR SELECTED COMPUTER MONITORED PARAMETER IS IN ALARM.

- 6 OPERATOR SELECTED COMPUTER MONITORED PARAMETER IS IN ALARM.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OBSERVATION OF COMPUTER POINT MONITORED USING FUNCTION 23 SELECTION 01 ON THE OPERATORS COMPUTER CONSOLE.

- 0 OBSERVATION OF COMPUTER POINT MONITORED USING FUNCTION 23 SELECTION 01
ON THE OPERATORS COMPUTER CONSOLE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o CORRECT ALARM CONDITION.
- o REFER TO OP-503.

- o CORRECT ALARM CONDITION.
- o REFER TO OP-503.

DISCUSSION:

THE OPERATOR SELECTED ALARM FUNCTION IS ACCOMPLISHED BY USING FUNCTION 23 ON THE OPERATORS COMPUTER CONSOLE. THIS FUNCTION ALLOWS MONITORING OF UP SEVERAL DIFFERENT COMPUTER POINTS SIMULTANEOUSLY. WHILE OBSERVING THESE POINTS THE CURRENT VALUES MAY BE UPDATED BY PRESSING THE ENTER KEY ON THE CONSOLE.

THE OPERATOR SELECTED ALARM FUNCTION IS ACCOMPLISHED BY USING FUNCTION 23 ON THE OPERATORS COMPUTER CONSOLE. THIS FUNCTION ALLOWS MONITORING OF UP SEVERAL DIFFERENT COMPUTER POINTS SIMULTANEOUSLY. WHILE OBSERVING THESE POINTS THE CURRENT VALUES MAY BE UPDATED BY PRESSING THE ENTER KEY ON THE CONSOLE.

REFERENCES:

SENSING ELEMENT: VARIOUS COMPUTER POINTS.

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-04-06	J-04-06
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[illegible]

COMPUTER ALARM

EVENT POINT 1914

INDICATED CONDITION:

- o COMPUTER ALARMS HAVE NOT BEEN ACKNOWLEDGED FOR 15 MINUTES.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o COMPUTER ALARM SCREEN.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ACKNOWLEDGE ALARM.
- o REFER TO OP-503.

DISCUSSION:

REFERENCES:

SENSING ELEMENT: COMPUTER ALARMS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-01	J-05-01
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RPS
CHANNEL A
TRIP

EVENT POINT 0963

INDICATED CONDITION:

- o RPS PROTECTIVE SUBSYSTEM No.1 AMBER LIGHT IS BRIGHT ON TOP OF ALL RPS CABINETS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RPS TRIP BISTABLE SETPOINT EXCEEDED.
- o RPS MODULE SWITCH NOT IN "OPERATE".
- o RPS MODULE REMOVED.
- o LOSS OF POWER TO RPS CHANNEL "A".

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF CHANNEL TRIP AND RESTORE AS REQUIRED.

DISCUSSION:

EXCEEDING THE SETPOINT FOR THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

NUCLEAR OVERPOWER	HIGH RB PRESS.	HIGH Thot	HIGH RCS PRESS.
LOW RCS PRESS	PWR/IMB/FLOW	PRESS/TEMP	LOSS OF RC PUMPS

PLACING THE FOLLOWING MODULES OUT OF "OPERATE" WILL TRIP THE CHANNEL:

POWER RANGE TEST	CONTACT MONITOR TEST	TEMPERATURE TEST
FLOW CHANNEL TEST	RB HIGH PRESS TEST	PRESSURE TEST

REMOVING ANY OF THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

CONTACT MONITOR	PWR/PUMPS BS	CONT MON AUX BS	LOOP A SQ RT EXT
PWR/IMB/FLOW BS	RB HI PRESS	TOT FLOW BUFFER	LOOP B SQ RT EXT
PWR ENG TEST CKT	LIN AMP TOP ION CH	PWR ENG DET P.S.	SUMMING AMP
FUNCTION GEN	LIN AMP BOT ION CH	LOW PRESS BS	B80 SIG CONVERT
OVERPOWER BS	PRESS/TEMP BS	DELTA FLUX	PRESS BUFFER AMP
HI TEMP BS	HI PRESS BS	LINEAR BRIDGE	SHUTDOWN BYP BS
	KEY SWITCH MOD	S/D BYP AUX RELAY	

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-02	J-05-02
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RPS CHANNEL A
S/D BYPASS
ACTUATED

EVENT POINT 0964

INDICATED CONDITION:

- o RPS CHANNEL "A" IN SHUTDOWN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SHUTDOWN BYPASS KEY SWITCH POSITIONED TO BYPASS.
- o SHUTDOWN BYPASS INDICATOR LIGHT IS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT CONDITIONS ARE SUCH THAT SHUTDOWN BYPASS MODE IS REQUIRED.

DISCUSSION:

WITH RPS CHANNEL IN SHUTDOWN BYPASS THE FOLLOWING TRIPS ARE BYPASSED:

PUMP POWER MONITOR LOW RCS PRESSURE VARIABLE LOW PRESSURE
POWER IMBALANCE FLOW

EFIC ACTUATION ON LOSS OF BOTH MAIN FEED PUMPS IS BYPASSED WITH THE A
IN SHUTDOWN BYPASS.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-03	J-05-03
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RPS
CHANNEL A
BYPASSED

EVENT POINT 0965

INDICATED CONDITION:

- o RPS CHANNEL "A" IN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY BYPASS SWITCH IN RPS CABINET IN BYPASS.
- o RED MANUAL BY-PASS LIGHT IS BRIGHT, LOCATED ON OUTSIDE OF RPS CABINET.
- o RED CHANNEL BYPASS LIGHT IS BRIGHT, LOCATED ON CHANNEL BYPASS MODULE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY RPS CHANNEL IS REQUIRED TO BE BYPASSED.

DISCUSSION:

PLACING THIS CHANNEL IN BYPASS REMOVES IT'S INPUT TO THE REACTOR TRIP CIRCUIT, AND THEREFORE PLACES RPS IN A TWO OUT OF THREE LOGIC TO TRIP THE REACTOR. THIS RESULTS IN LESS RELIABILITY.

PLACING A RPS CHANNEL IN BYPASS IS INTERLOCKED WITH IT'S ASSOCIATED EFIC CHANNEL. IF ANOTHER EFIC CHANNEL IS IN A BYPASS CONDITION IT WILL AUTOMATICALLY BE REMOVED FROM BYPASSED REGARDLESS OF THE POSITION OF IT'S BYPASS KEY SWITCH.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0966

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o NI-1 OR NI-5 DETECTOR POWER SUPPLY FAULT.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o VOLTAGE INDICATION ON POWER SUPPLIES IN RPS CABINET. o NUCLEAR INSTRUMENTS.
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o NOTIFY I&C SHOP.
<p>DISCUSSION:</p> <p>NI-1 POWER SUPPLY IS OFF WHEN >10% REACTOR POWER.</p> <p>ADDRESS STS REQUIREMENTS CONCERN ; THIS CONDITION.</p>
<p>REFERENCES: RPS AND NI DRAWINGS</p>
<p>SENSING ELEMENT: VARIOUS RPS CONTACTS</p>

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0967

INDICATED CONDITION:

- o POSITIVE OR NEGATIVE 15V POWER SUPPLIES FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES.
- o RED INDICATING LIGHT IS OFF, LOCATED ON POWER SUPPLY IN RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY CABINET INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o VERIFY POWER AVAILABLE FROM VBDP-3 BKR 17.
- o RESTORE POWER PER OP-507.
- o NOTIFY I&C SHOP.

DISCUSSION:

A LOSS OF POWER FROM THE VBDP WILL TOTALLY DEENERGIZE THE RPS CABINET. THIS WILL CAUSE THE RPS CHANNEL TO TRIP AND THE LOSS OF INDICATION AND CONTROL FROM ANY NUCLEAR INSTRUMENT LOCATED IN THAT CABINET.

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0968

INDICATED CONDITION:

- o RPS CABINET "A" FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o "A" OR "B" CABINET COOLING FANS NOT RUNNING.
- o AMBER INDICATING LIGHT IS BRIGHT ON OUTSIDE OF RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FAN INPUT BREAKER CLOSED LOCATED INSIDE OF CABINET.
- o NOTIFY I&C SHOP.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING FRONT AND BACK RPS CABINET DOORS TO ALLOW THE CABINET TO STAY COOL DURING TIMES WHEN NO FANS ARE RUNNING. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0969

INDICATED CONDITION:

- o RPS CABINET "A" HIGH FLUX BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR POWER EXCEEDS THE SETPOINT OF THE HIGH FLUX BISTABLE AS INDICATED ON NI-5 TOTAL FLUX.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION, AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0970

INDICATED CONDITION:

- o RPS CABINET "A" FLUX/FLOW/IMBALANCE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLUX/FLOW/IMBALANCE IS OUTSIDE THE LIMITS OF THE GENERATED BARN CURVE.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0971

INDICATED CONDITION:

- o RPS CABINET "A" PUMP POWER BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TWO OR MORE REACTOR COOLANT PUMPS INDICATE <1152 KW OR >14,400 KW FROM THE REACTOR COOLANT PUMP POWER MONITOR.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o TWO OR MORE WHITE PUMP POWER MONITOR INDICATOR LIGHTS ARE BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0972

INDICATED CONDITION:

- o RPS CABINET "A" REACTOR COOLANT HIGH PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS >2355 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.
IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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[illegible]

RPS CHANNEL A TROUBLE

EVENT POINT 0973

INDICATED CONDITION:

- 0 RPS CABINET "A" REACTOR COOLANT LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS <1800 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.
IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0974

INDICATED CONDITION:

- o RPS CABINET "A" REACTOR COOLANT VARIABLE LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS $< (11.59 \times T_{hot} - 5037.8)$ PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.
IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0975

INDICATED CONDITION:

- o RPS CABINET "A" REACTOR COOLANT HIGH TEMPERATURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT That IS >618° F.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-04	J-05-04
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RPS
CHANNEL A
TROUBLE

EVENT POINT 0976

INDICATED CONDITION:

- o RPS CABINET "A" REACTOR BUILDING HIGH PRESSURE 4 PSIG BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING PRESSURE IS >4 PSIG.
- o RED BISTABLE TRIP LIGHT IS ON.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.1 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "A" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1240

INDICATED CONDITION:

- o CONTROL ROD DRIVE 480V FEEDER BREAKER RX AUX BUS 3A UNIT 2D IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE UNIT 480V SWITCHGEAR ROOM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF BREAKER OPENING.

DISCUSSION:

WITH THIS BREAKER OPEN NO "A" SIDE CRD BREAKERS WILL CLOSE.

REFERENCES: DRAWING 208-024 SHEET DR-01

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1241

INDICATED CONDITION:

- o CONTROL ROD DRIVE 480V FEEDER BREAKER PLANT AUX BUS UNIT 3B IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE UNIT 480V SWITCHGEAR ROOM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF BREAKER OPENING.

DISCUSSION:

WITH THIS BREAKER OPEN NO "B" SIDE CRD BREAKERS WILL CLOSE.

REFERENCES: DRAWING 208-024 SHEET DR-02

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1982

INDICATED CONDITION:

- o "A" CONTROL ROD DRIVE BREAKER IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE CRD ROOM.
- o RED BREAKER OPEN INDICATION ON OUTSIDE OF "A" RPS CABINET IS BRIGHT.
- o RED BREAKER OPEN INDICATION ON REACTOR TRIP MODULE INSIDE "A" RPS CABINET IS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE FOR OPEN BREAKER.
- o CLOSE BREAKER LOCALLY.

DISCUSSION:

PRESSING "TRIP RESET" ON THE DIAMOND CONTROL PANEL WILL CLOSE THE BREAKER AS LONG AS SAFETY RODS ARE NOT WITHDRAWN.

REFERENCES: CRD DRAWINGS

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1983

INDICATED CONDITION:

- o "B" CONTROL ROD DRIVE BREAKER IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE CRD ROOM.
- o RED BREAKER OPEN INDICATION ON OUTSIDE OF "B" RPS CABINET IS BRIGHT.
- o RED BREAKER OPEN INDICATION ON REACTOR TRIP MODULE INSIDE "B" RPS CABINET IS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE FOR OPEN BREAKER.
- o CLOSE BREAKER LOCALLY.

DISCUSSION:

PRESSING "TRIP RESET" ON THE DIAMOND CONTROL PANEL WILL CLOSE THE BREAKER AS LONG AS SAFETY RODS ARE NOT WITHDRAWN.

REFERENCES: CRD DRAWINGS

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1984

INDICATED CONDITION:

- o EITHER "C" CONTROL ROD DRIVE BREAKER IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE CRD ROOM.
- o RED BREAKER OPEN INDICATION ON OUTS DE OF "C" RPS CABINET IS BRIGHT.
- o RED BREAKER OPEN INDICATION ON REACTOR TRIP MODULE INSIDE "C" RPS CABINET IS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE FOR OPEN BREAKER.
- o CLOSE BREAKER LOCALLY.

DISCUSSION:

PRESSING "TRIP RESET" ON THE DIAMOND CONTROL PANEL WILL CLOSE THE BREAKER AS LONG AS SAFETY RODS ARE NOT WITHDRAWN. THE RED BREAKER OPEN INDICATION ABOVE THE RPS CABINET INDICATES THAT BOTH DC BREAKERS AND ALL ELECTRONIC TRIP DEVICES ARE OPEN. PRESSING FAULT RESET ON THE DIAMOND CONTROL PANEL WILL RESET THE ELECTRONIC TRIPS AND CAUSE THE RED LIGHT TO GO DIM.

REFERENCES: CRD DRAWINGS

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-05-06	J-05-06
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[illegible]

CRD
BREAKER
OPEN

EVENT POINT 1985

INDICATED CONDITION:

- o EITHER "D" CONTROL ROD DRIVE BREAKER IS OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOCAL BREAKER INDICATION IN THE CRD ROOM.
- o RED BREAKER OPEN INDICATION ON OUTSIDE "D" RPS CABINET IS BRIGHT.
- o RED BREAKER OPEN INDICATION ON REACTOR TRIP MODULE INSIDE "D" RPS CABINET IS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE FOR OPEN BREAKER.
- o CLOSE BREAKER LOCALLY.

DISCUSSION:

PRESSING "TRIP RESET" ON THE DIAMOND CONTROL PANEL WILL CLOSE THE BREAKER AS LONG AS SAFETY RODS ARE NOT WITHDRAWN. THE RED BREAKER OPEN INDICATION ABOVE THE RPS CABINET INDICATES THAT BOTH DC BREAKERS AND ALL ELECTRONIC TRIP DEVICES ARE OPEN. PRESSING FAULT RESET ON THE DIAMOND CONTROL PANEL WILL RESET THE ELECTRONIC TRIPS AND CAUSE THE RED LIGHT TO GO DIM.

REFERENCES: CRD DRAWINGS

SENSING ELEMENT: BREAKER CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-01	J-06-01
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RPS
CHANNEL B
TRIP

EVENT POINT 0977

INDICATED CONDITION:

- o RPS PROTECTIVE SUBSYSTEM #2 AMBER LIGHT IS BRIGHT ON TOP OF ALL RPS CABINETS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RPS TRIP BISTABLE SETPOINT EXCEEDED.
- o RPS MODULE SWITCH NOT IN "OPERATE".
- o RPS MODULE REMOVED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF CHANNEL TRIP AND RESTORE AS REQUIRED.

DISCUSSION:

EXCEEDING THE SETPOINT FOR THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

NUCLEAR OVERPOWER	HIGH RB PRESS.	HIGH Thot	HIGH RCS PRESS.
LOW RCS PRESS.	PWR/IMB/FLOW	PRESS/TEMP	LOSS OF RC PUMPS

PLACING THE FOLLOWING MODULES OUT OF "OPERATE" WILL TRIP THE CHANNEL:

POWER RANGE TEST	CONTACT MONITOR TEST	TEMPERATURE TEST
FLOW CHANNEL TEST	RB HIGH PRESS TEST	PRESSURE TEST

REMOVING ANY OF THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

CONTACT MONITOR	PWR/PUMPS BS	CONT MON AUX BS	LOOP A SQ RT EXT
PWR/IMB/FLOW BS	RB HI PRESS	TOT FLOW BUFFER	LOOP B SQ RT EXT
PWR ENG TEST CKT	LIN AMP TOP ION CH	PWR ENG DET P.S.	SUMMING AMP
FUNCTION GEM	LIN AMP BOT ION CH	LOW PRESS BS	880 SIG CONVERT
OVERPOWER BS	PRESS/TEMP BS	DELTA FLUX	PRESS BUFFER AMP
HI TEMP BS	HI PRESS BS	LINEAR BRIDGE	SHUTDOWN BYP BS
	KEY SWITCH MOD	S/D BYP AUX RELAY	

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-02	J-06-02
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RPS CHANNEL B
S/D BYPASS
ACTUATED

EVENT POINT 0978

INDICATED CONDITION:

- o RPS CHANNEL "B" IN SHUTDOWN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SHUTDOWN BYPASS KEY SWITCH POSITIONED TO BYPASS.
- o SHUTDOWN BYPASS INDICATOR LIGHTS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT CONDITIONS ARE SUCH THAT SHUTDOWN BYPASS MODE IS REQUIRED.

DISCUSSION:

WITH RPS CHANNEL IN SHUTDOWN BYPASS THE FOLLOWING TRIPS ARE BYPASSED:

PUMP POWER MONITOR LOW RCS PRESSURE VARIABLE LOW PRESSURE
POWER IMBALANCE FLOW

EFIC ACTUATION ON LOSS OF BOTH MAIN FEED PUMPS IS BYPASSED WITH THE RPS IN SHUTDOWN BYPASS.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-03	J-06-03
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RPS
CHANNEL B
BYPASSED

EVENT POINT 0979

INDICATED CONDITION:

- o RPS CHANNEL "B" IN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY BYPASS SWITCH IN RPS CABINET IN BYPASS.
- o RED MANUAL BY-PASS LIGHT IS BRIGHT, LOCATED ON OUTSIDE OF RPS CABINET.
- o RED CHANNEL BYPASS LIGHT IS BRIGHT, LOCATED ON CHANNEL BYPASS MODULE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY RPS CHANNEL IS REQUIRED TO BE BYPASSED.

DISCUSSION:

WITH THE RPS CHANNEL IN BYPASS, THE CHANNEL WILL NOT INPUT TO THE CIRCUIT TO TRIP THE REACTOR.
PLACING A RPS CHANNEL IN BYPASS IS INTERLOCKED WITH IT'S ASSOCIATED EFIC CHANNEL. IF ANOTHER EFIC CHANNEL IS IN A BYPASS CONDITION IT WILL AUTOMATICALLY BE REMOVED FROM BYPASSED REGARDLESS OF THE POSITION OF IT'S BYPASS KEY SWITCH.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0980

INDICATED CONDITION:

- o NI-2 OR NI-6 DETECTOR POWER SUPPLY FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES IN RPS CABINET.
- o NUCLEAR INSTRUMENTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY I&C SHOP.

DISCUSSION:

NI-2 POWER SUPPLY IS OFF WHEN >10% REACTOR POWER.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0981

INDICATED CONDITION:

- o POSITIVE OR NEGATIVE 15V. POWER SUPPLIES FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES.
- o RED INDICATING LIGHT IS OFF, LOCATED ON POWER SUPPLY IN RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY CABINET INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o VERIFY POWER AVAILABLE FROM VBDP-4 GKR 17.
- o RESTORE POWER PER OP-507.
- o NOTIFY I&C SHOP.

DISCUSSION:

A LOSS OF POWER FROM THE VBDP WILL TOTALLY DEENERGIZE THE RPS CABINET. THIS WILL CAUSE THE RPS CHANNEL TO TRIP AND THE LOSS OF INDICATION AND CONTROL FROM ANY NUCLEAR INSTRUMENT LOCATED IN THAT CABINET.

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS CHANNEL B TROUBLE

EVENT POINT 0982

INDICATED CONDITION:

- o RPS CABINET "B" FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o "A" OR "B" CABINET COOLING FANS NOT RUNNING.
- o AMBER INDICATING LIGHT IS BRIGHT ON OUTSIDE OF RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FAN INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o NOTIFY I&C SHOP.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING FRONT AND BACK RPS CABINET DOORS TO ALLOW THE CABINET TO STAY COOL DURING TIMES WHEN NO FANS ARE RUNNING. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL. B
TROUBLE

EVENT POINT 0983

INDICATED CONDITION:

- 0 RPS CABLET "B" HIGH FLUX BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR POWER EXCEEDS THE SETPOINT OF THE HIGH FLUX BISTABLE AS INDICATED ON NI-6 TOTAL FLUX.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0984

INDICATED CONDITION:

- o RPS CABINET "B" FLUX/FLOW/IMBALANCE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLUX/FLOW/IMBALANCE IS OUTSIDE THE LIMITS OF THE GENERATED BARN CURVE.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0985

INDICATED CONDITION:

- o RPS CABINET "B" PUMP POWER BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TWO OR MORE REACTOR COOLANT PUMPS INDICATE <1152 KW OR >14,400 KW FROM THE REACTOR COOLANT PUMP POWER MONITOR.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o TWO OR MORE WHITE PUMP POWER MONITOR INDICATOR LIGHTS ARE BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No. 2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0986

INDICATED CONDITION:

- o RPS CABINET "B" REACTOR COOLANT HIGH PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS >2355 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER RPS PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.
IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0987

INDICATED CONDITION:

- o RPS CABINET "B" REACTOR COOLANT LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS <1800 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No. 2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0988

INDICATED CONDITION:

- o RPS CABINET "B" REACTOR COOLANT VARIABLE LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS $< (1.59 \times T_{hot} - 5037.8)$ PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0989

INDICATED CONDITION:

- o RPS CABINET "B" REACTOR COOLANT HIGH TEMPERATURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT That IS >618° F.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-06-04	J-06-04
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RPS
CHANNEL B
TROUBLE

EVENT POINT 0990

INDICATED CONDITION:

- o RPS CABINET "B" REACTOR BUILDING 4 PSIG PRESSURE HIGH BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING PRESSURE IS >4 PSIG.
- o RED BISTABLE TRIP LIGHT IS ON.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.2 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "B" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-01	J-07-01
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RPS
CHANNEL C
TRIP

EVENT POINT 0991

INDICATED CONDITION:

- o RPS PROTECTIVE SUBSYSTEM No.3 AMBER LIGHT IS BRIGHT ON TOP OF ALL RPS CABINETS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RPS TRIP BISTABLE SETPOINT EXCEEDED.
- o RPS MODULE SWITCH NOT IN "OPERATE".
- o RPS MODULE REMOVED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF CHANNEL TRIP AND RESTORE AS REQUIRED.

DISCUSSION:

EXCEEDING THE SETPOINT FOR THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

NUCLEAR OVERPOWER	HIGH RB PRESS.	HIGH Hot	HIGH RCS PRESS.
LOW RCS PRESS	PWR/IMB/FLOW	PRESS/TEMP	LOSS OF RC PLGDS

PLACING THE FOLLOWING MODULES OUT OF "OPERATE" WILL TRIP THE CHANNEL:

POWER RANGE TEST	CONTACT MONITOR TEST	TEMPERATURE TEST
FLOW CHANNEL TEST	RB HIGH PRESS TEST	PRESSURE TEST

REMOVING ANY OF THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

CONTACT MONITOR	PWR/PUMPS BS	CONT MON AUX BS	LOOP A SQ RT EXT
PWR/IMB/FLOW BS	RB HI PRESS	TOT FLOW BUFFER	LOOP B SQ RT EXT
PWR ENG TEST CKT	LIN AMP TOP ION CH	PWR ENG DET P.S.	SUMMING AMP
FUNCTION GEN	LIN AMP BOT ION CH	LOW PRESS BS	BBO SIG CONVERT
OVERPOWER BS	PRESS/TEMP BS	DELTA FLUX	PRESS BUFFER AMP
HI TEMP BS	HI PRESS BS	LINEAR BRIDGE	SHUTDOWN BYP BS

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-02	J-07-02
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RPS CHANNEL C
S/D BYPASS
ACTUATED

EVENT POINT 0992

INDICATED CONDITION:

- o RPS CHANNEL "C" IN SHUTDOWN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SHUTDOWN BYPASS KEY SWITCH POSITIONED TO BYPASS.
- o SHUTDOWN BYPASS INDICATOR LIGHTS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT CONDITIONS ARE SUCH THAT SHUTDOWN BYPASS MODE IS REQUIRED.

DISCUSSION:

WITH RPS CHANNEL IN SHUTDOWN BYPASS THE FOLLOWING TRIPS ARE BYPASSED:

PUMP POWER MONITOR LOW RCS PRESSURE VARIABLE LOW PRESSURE
POWER IMBALANCE FLOW

EFIC ACTUATION ON LOSS OF BOTH MAIN FEED PUMPS IS BYPASSED WITH THE RPS IN SHUTDOWN BYPASS.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-03	J-07-03
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RPS
CHANNEL C
BYPASSED

EVENT POINT 0993

INDICATED CONDITION:

- o RPS CHANNEL "C" IN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY BYPASS SWITCH IN RPS CABINET IN BYPASS.
- o RED MANUAL BY-PASS LIGHT IS BRIGHT, LOCATED ON OUTSIDE OF RPS CABINET.
- o RED CHANNEL BYPASS LIGHT IS BRIGHT, LOCATED ON CHANNEL BYPASS MODULE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY RPS CHANNEL IS REQUIRED TO BE BYPASSED.

DISCUSSION:

PLACING THIS CHANNEL IN BYPASS REMOVES IT'S INPUT TO THE REACTOR TRIP CIRCUIT, AND THEREFORE PLACES RPS IN A TWO OUT OF THREE LOGIC TO TRIP THE REACTOR. THIS RESULTS IN LESS RELIABILITY.

PLACING A RPS CHANNEL IN BYPASS IS INTERLOCKED WITH IT'S ASSOCIATED EFIC CHANNEL. IF ANOTHER EFIC CHANNEL IS IN A BYPASS CONDITION IT WILL AUTOMATICALLY BE REMOVED FROM BYPASSED REGARDLESS OF THE POSITION OF IT'S BYPASS KEY SWITCH.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 0994

INDICATED CONDITION:

- o NI-3 OR NI-7 DETECTOR POWER SUPPLY FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES IN RPS CABINET.
- o NUCLEAR INSTRUMENTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY I&C SHOP

DISCUSSION:

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 0995

INDICATED CONDITION:

- o POSITIVE OR NEGATIVE 15V POWER SUPPLIES FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES IN RPS CABINET.
- o RED INDICATING LIGHT IS OFF, LOCATED ON THE POWER SUPPLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY CABINET INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o VERIFY POWER AVAILABLE FROM VBDP-5 BKR 17.
- o NOTIFY I&C SHOP.

DISCUSSION:

A LOSS OF POWER FROM THE VBDP WILL TOTALLY DEENERGIZE THE RPS CABINET. THIS WILL CAUSE THE RPS CHANNEL TO TRIP AND THE LOSS OF INDICATION AND CONTROL FROM ANY NUCLEAR INSTRUMENT LOCATED IN THAT CABINET.

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS CHANNEL C TROUBLE

EVENT POINT 09996

INDICATED CONDITION:

- o RPS CABINET "C" FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o "A" OR "B" CABINET COOLING FANS NOT RUNNING.
- o AMBER INDICATING LIGHT IS BRIGHT ON OUTSIDE OF RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FAN INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
o NOTIFY I&C SHOP.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING FRONT AND BACK RPS CABINET DOORS TO ALLOW THE CABINET TO STAY COOL DURING TIMES WHEN NO FANS ARE RUNNING. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 0997

INDICATED CONDITION:

- 0 RPS CABINET "C" HIGH FLUX BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR POWER EXCEEDS THE SETPOINT OF THE HIGH FLUX BISTABLE AS INDICATED ON NI-7 TOTAL FLUX.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION, AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 0998

INDICATED CONDITION:

- o RPS CABINET "C" FLUX/FLOW/IMBALANCE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLUX/FLOW/IMBALANCE IS OUTSIDE THE LIMITS OF THE GENERATED BARN CURVE.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 0999

INDICATED CONDITION:

- o RPS CABINET "C" PUMP POWER BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TWO OR MORE REACTOR COOLANT PUMPS INDICATE <1152 KW OR >14,400 KW FROM THE REACTOR COOLANT PUMP POWER MONITOR.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o TWO OR MORE WHITE PUMP POWER MONITOR INDICATOR LIGHTS ARE BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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[illegible]

RPS
CHANNEL C
TROUBLE

EVENT POINT 1000

INDICATED CONDITION:

- o RPS CABINET "C" REACTOR COOLANT HIGH PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS >2355 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 1001

INDICATED CONDITION:

- o RPS CABINET "C" REACTOR COOLANT LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS <1800 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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[illegible]

RPS CHANNEL C TROUBLE

EVENT POINT 1002

INDICATED CONDITION:

- 0 RPS CABINET "C" REACTOR COOLANT VARIABLE LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS $<(11.59 \times \text{Thot} - 5037.8)$ PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-07-04	J-07-04
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RPS
CHANNEL C
TROUBLE

EVENT POINT 1003

INDICATED CONDITION:

- o RPS CABINET "C" REACTOR COOLANT HIGH TEMPERATURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT TEMPERATURE IS $>618^{\circ}$ F.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.3 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "C" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

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RPS
CHANNEL C
TROUBLE

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[illegible]

TURBINE
TRIP
BYPASS

EVENT POINT 1975

INDICATED CONDITION:

- o REACTOR TRIP FROM TURBINE TRIP CIRCUITRY IS BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TURBINE TRIP BYPASSED BISTABLES WHITE TRIP INDICATOR LIGHT IS BRIGHT - INSIDE ANY RPS CHANNEL CABINET.
- o REACTOR POWER IS LESS THAN 45% BY NUCLEAR INSTRUMENTATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE REACTOR POWER IS LESS THAN 45% RTP.

DISCUSSION:

THIS ALARM IS ACTIVATED WHEN THE FIRST CHANNEL OF RPS TURBINE TRIP BYPASS BISTABLE TRIPS. THE ALARM WILL NOT REFLASH AS OTHER CHANNEL'S BISTABLE TRIPS.

PRIOR TO TRIPPING THE TURBINE ENSURE ALL TURBINE TRIP BYPASS BISTABLES ARE IN THE TRIP STATE.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-01	J-08-01
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RPS
CHANNEL D
TRIP

EVENT POINT 1005

INDICATED CONDITION:

- o RPS PROTECTIVE SUBSYSTEM No.4 AMBER LIGHT IS BRIGHT ON TOP OF ALL RPS CABINETS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RPS TRIP BISTABLE SETPOINT EXCEEDED.
- o RPS MODULE SWITCH NOT IN "OPERATE".
- o RPS MODULE REMOVED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF CHANNEL TRIP AND RESTORE AS REQUIRED.

DISCUSSION:

EXCEEDING THE SETPOINT FOR THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

NUCLEAR OVERPOWER	HIGH RB PRESS.	HIGH Thot	HIGH RCS PRESS.
LOW RCS PRESS	PWR/IMB/FLOW	PRESS/TEMP	LOSS OF RC PUMPS

PLACING THE FOLLOWING MODULES OUT OF "OPERATE" WILL TRIP THE CHANNEL:

POWER RANGE TEST	CONTACT MONITOR TEST	TEMPERATURE TEST
FLOW CHANNEL TEST	RB HIGH PRESS TEST	PRESSURE TEST

REMOVING ANY OF THE FOLLOWING MODULES WILL TRIP THE CHANNEL:

CONTACT MONITOR	PWR/PUMPS BS	CONT MON AUX BS	LOOP A SQ RT EXT
PWR/IMB/FLOW BS	RB HI PRESS	TOT FLOW BUFFER	LOOP B SQ RT EXT
PWR ENG TEST CKT	LIN AMP TOP ION CH	PWR ENG DET P.S.	SUMMING AMP
FUNCTION GEN	LIN AMP BOT ION CH	LOW PRESS BS	880 SIG CONVERT
OVERPOWER BS	PRESS/TEMP BS	DELTA FLUX	PRESS BUFFER AMP
HI TEMP BS	HI PRESS BS	LINEAR BRIDGE	SHUTDOWN BYP BS

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-02	J-08-02
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RPS CHANNEL D
S/D BYPASS
ACTUATED

EVENT POINT 1006

INDICATED CONDITION:

- o RPS CHANNEL "D" IN SHUTDOWN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SHUTDOWN BYPASS KEY SWITCH POSITIONED TO BYPASS.
- o SHUTDOWN BYPASS INDICATOR LIGHTS BRIGHT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT CONDITIONS ARE SUCH THAT SHUTDOWN BYPASS MODE IS REQUIRED.

DISCUSSION:

WITH RPS CHANNEL IN SHUTDOWN BYPASS THE FOLLOWING TRIPS ARE BYPASSED:

PUMP POWER MONITOR LOW RCS PRESSURE VARIABLE LOW PRESSURE
POWER IMBALANCE FLOW

EFIC ACTUATION ON LOSS OF BOTH MAIN FEED PUMPS IS BYPASSED WITH THE RPS IN SHUTDOWN BYPASS.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-03	J-08-03
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RPS
CHANNEL D
BYPASSED

EVENT POINT 1007

INDICATED CONDITION:

- o RPS CHANNEL "D" IN BYPASS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY BYPASS SWITCH IN RPS CABINET IN BYPASS.
- o RED MANUAL BY-PASS LIGHT IS BRIGHT, LOCATED ON OUTSIDE OF RPS CABINET.
- o RED CHANNEL BYPASS LIGHT IS BRIGHT, LOCATED ON CHANNEL BYPASS MODULE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY RPS CHANNEL IS REQUIRED TO BE BYPASSED.

DISCUSSION:

PLACING THIS CHANNEL IN BYPASS REMOVES IT'S INPUT TO THE REACTOR TRIP CIRCUIT, AND THEREFORE PLACES RPS IN A TWO OUT OF THREE LOGIC TO TRIP THE REACTOR. THIS RESULTS IN LESS RELIABILITY.

PLACING A RPS CHANNEL IN BYPASS IS INTERLOCKED WITH IT'S ASSOCIATED EFIC CHANNEL. IF ANOTHER EFIC CHANNEL IS IN A BYPASS CONDITION IT WILL AUTOMATICALLY BE REMOVED FROM BYPASSED REGARDLESS OF THE POSITION OF IT'S BYPASS KEY SWITCH.

REFERENCES: RPS AND NNI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS.

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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[illegible]

RPS CHANNEL D TROUBLE

EVENT POINT 1008

INDICATED CONDITION:

- o NI-4 OR NI-8 DETECTOR POWER SUPPLY FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES IN RPS CABINET.
- o NUCLEAR INSTRUMENTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o NOTIFY I&C SHOP

DISCUSSION:

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1009

INDICATED CONDITION:

- o POSITIVE OR NEGATIVE 15V POWER SUPPLIES FAULT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o VOLTAGE INDICATION ON POWER SUPPLIES.
- o RED INDICATING LIGHT ON POWER SUPPLIES OFF.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY CABINET INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o VERIFY POWER AVAILABLE FROM VBOP-6 BKR 17.
- o RESTORE POWER PER OP-507.
- o NOTIFY I&C SHOP.

DISCUSSION:

A LOSS OF POWER FROM THE VBOP WILL TOTALLY DEENERGIZE THE RPS CABINET. THIS WILL CAUSE THE RPS CHANNEL TO TRIP AND THE LOSS OF INDICATION AND CONTROL FROM ANY NUCLEAR INSTRUMENT LOCATED IN THAT CABINET.

ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1010

INDICATED CONDITION:

- o RPS CABINET "D" FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o "A" OR "B" CABINET COOLING FANS NOT RUNNING.
- o AMBER INDICATING LIGHT IS BRIGHT ON OUTSIDE OF RPS CABINET.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FAN INPUT BREAKER CLOSED LOCATED IN TOP OF CABINET.
- o NOTIFY I&C SHOP.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING FRONT AND BACK RPS CABINET DOORS TO ALLOW THE CABINET TO STAY COOL DURING TIMES WHEN NO FANS ARE RUNNING. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1011

INDICATED CONDITION:

- o RPS CABINET "D" HIGH FLUX BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR POWER EXCEEDS THE SETPOINT OF THE HIGH FLUX BISTABLE AS INDICATED ON NI-8 TOTAL FLUX.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION, AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

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RPS
CHANNEL D
TROUBLE

EVENT POINT 1012

INDICATED CONDITION:

- o RPS CABINET "D" FLUX/FLOW/IMBALANCE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLUX/FLOW/IMBALANCE IS OUTSIDE THE LIMITS OF THE GENERATED BARN CURVE.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

TRIP SETPOINTS ARE SPECIFIED BY STS BASED ON RCP COMBINATION AND OTHER CONDITIONS WHERE MORE RESTRICTIVE LIMITS APPLY.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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[illegible]

RPS
CHANNEL D
TROUBLE

EVENT POINT 1013

INDICATED CONDITION:

- o RPS CABINET "D" PUMP POWER BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TWO OR MORE REACTOR COOLANT PUMPS INDICATE <1152 KW OR >14,400 KW FROM THE REACTOR COOLANT PUMP POWER MONITOR.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o TWO OR MORE WHITE PUMP POWER MONITOR INDICATOR LIGHTS ARE BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ILS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1014

INDICATED CONDITION:

- o RPS CABINET "D" REACTOR COOLANT HIGH PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS >2355 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1015

INDICATED CONDITION:

- o RPS CABINET "D" REACTOR COOLANT LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS <1800 PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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RPS
CHANNEL D
TROUBLE

EVENT POINT 1016

INDICATED CONDITION:

- o RPS CABINET "D" REACTOR COOLANT VARIABLE LOW PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT PRESSURE IS $< (11.59 \times T_{hot} - 5037.8)$ PSIG.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.
IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-04	J-08-04
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[illegible]

RPS
CHANNEL D
TROUBLE

EVENT POINT 1017

INDICATED CONDITION:

- o RPS CABINET "D" REACTOR COOLANT HIGH TEMPERATURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR COOLANT Hot IS >618° F.
- o WHITE BISTABLE TRIP LIGHT IS BRIGHT.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No. 4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

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RPS
CHANNEL D
TROUBLE

EVENT POINT 1018

INDICATED CONDITION:

- o RPS CABINET "D" REACTOR BUILDING 4 PSIG HIGH PRESSURE BISTABLE HAS TRIPPED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REACTOR BUILDING PRESSURE IS >4 PSIG.
- o RED BISTABLE TRIP LIGHT IS ON.
- o AMBER PROTECTIVE SUBSYSTEM TRIP No.4 ON OUTSIDE OF EACH RPS CABINET IS BRIGHT INDICATING "D" RPS IS TRIPPED.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE OF BISTABLE TRIP AND RESTORE CHANNEL AS NECESSARY.
- o REFER TO OP-507.

DISCUSSION:

TRIPPING THIS BISTABLE WILL TRIP THE RPS CHANNEL.

IF TWO OR MORE RPS CHANNELS TRIP THE REACTOR WILL TRIP.

REFERENCES: RPS AND NI DRAWINGS

SENSING ELEMENT: VARIOUS RPS CONTACTS

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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1962

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1A ON RCPPM-1 IN "BYPASS" POSITION (RCPPM-1 IS LOCATED IN "A" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-1.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-05	J-08-05
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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1963

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1A ON RCPPM-2 IN "BYPASS" POSITION (RCPPM-2 IS LOCATED IN "B" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

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RC PUMP
MONITOR
IN BYPASS

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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1965

INDICATED CONDITION:

- 0 RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1B ON RCPPM-2 IN "BYPASS" POSITION (RCPPM-2 IS LOCATED IN "B" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-05	J-08-05
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RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1966

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1C ON RCPPM-1 IN "BYPASS" POSITION (RCPPM-1 IS LOCATED IN "A" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-1.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

ICS-J ANNUNCIATOR RESPONSE	ICS-CY2-08-05	J-08-05
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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1967

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1C ON RCPPM-2 IN "BYPASS" POSITION (RCPPM-2 IS LOCATED IN "B" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1968

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1D ON RCPPM-1 IN "BYPASS" POSITION (RCPPM-1 IS LOCATED IN "A" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-1.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

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[illegible]

RC PUMP
MONITOR
IN BYPASS

EVENT POINT 1969

INDICATED CONDITION:

- o RC PUMP POWER MONITOR BYPASSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o KEY SWITCH FOR RCP-1D ON RCPPM-2 IN "BYPASS" POSITION (RCPPM-2 IS LOCATED IN "B" ES 4160V SWITCHGEAR ROOM).
- o RED BYPASSED LIGHT IS ON ON RCPPM-2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY BYPASSING OF RC PUMP POWER MONITOR IS REQUIRED.
- o RETURN KEY SWITCH TO NORMAL.

DISCUSSION:

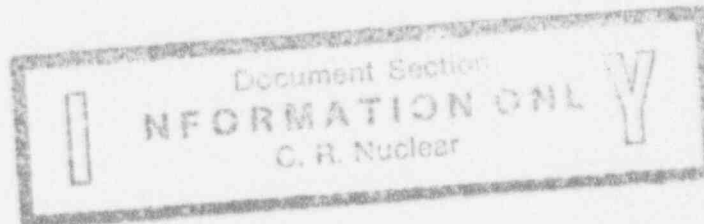
THIS ALARM INDICATES THE RC PUMP POWER MONITOR INPUT TO RPS IS BYPASSED.

REFERENCES: RC PUMP POWER MONITOR DRAWING

SENSING ELEMENT: RPS CONTACTS

Rev. 17 08/12/93

Effective Date 8/23/93



ANNUNCIATOR RESPONSE

AR-501

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ICS I ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

De Jones for Bill Marshall

DATE: 8/23/93

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 ICS-CY1 Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ICS-CY1 Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ICS-CY1 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

- 2.1.1 AP-545, Plant Runback
- 2.1.2 OP-302, RC Pump Operation
- 2.1.3 OP-506, LPMS Data Handling Recording and Analysis Equipment
- 2.1.4 EOP, Emergency Operating Procedure

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 ICS-CY1 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-01	1-01-01
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RC PUMP A
TRIP

EVENT POINT 1377

INDICATED CONDITION:

- o RCP-1A BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-1A CONTROL STATION.
- o RCS FLOW IS DECREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.

DISCUSSION:

A RCP TRIP SHOULD CAUSE A PLANT RUNBACK AND CAUSE FEEDWATER TO RE-RATIO.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-01

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-02	I-01-02
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RC PUMP A
MTR VIBRATION
HIGH

EVENT POINT 1299

INDICATED CONDITION:

- o RCP-1A MOTOR VIBRATION >2 MILS AS SENSED BY RC-42-MS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REDUNDANT RCP VIBRATION INDICATIONS AS SEEN ON RCP VIBRATION MONITORING PANEL, LPP-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR ACTIONS ON HIGH RCP VIBRATION.
- o CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN A RCP WITH HIGH VIBRATIONS.

DISCUSSION:

THE VIBRATION SWITCH RESET PUSHBUTTON ON THE MAIN CONTROL BOARD MUST BE DEPRESSED TO RESET THIS ALARM.

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-42-MS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-03	I-01-03
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RC PUMP A
CLG WTR FLOW
LOW

EVENT POINT 1419

INDICATED CONDITION:

- o SW FLOW TO RCP-1A IS <260 GPM AS SENSED BY SW-108-FS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o WHITE RCP-1A SW FLOW INTERLOCK LIGHT NOT ON.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY NORMAL SW SYSTEM OPERATION.
- o REFER TO OP-302 FOR SW REQUIREMENTS FOR RUNNING REACTOR COOLANT PUMPS.

DISCUSSION:

THIS ALARM MAY BE CAUSED BY LARGE SW SYSTEM LOADS. IN THESE INSTANCES CONSIDERATION SHOULD BE GIVEN TO RUNNING SWP-1A OR SWP-1B INSTEAD OF USING THE NORMAL DUTY SW PUMP, SWP-1C.

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: SW-108-FS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-04	I-01-04
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RC PUMP
OVERCURRENT

EVENT POINT 1378

INDICATED CONDITION:

- o RCP-1A MOTOR AMPS >110% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH MOTOR AMPS INDICATED ON RCP-1A CONTROL STATION.
- o RCP-1A TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF HIGH CURRENT.
- o INSPECT BREAKER FOR DROPPED TARGETS.

DISCUSSION:

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

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

REFERENCES: DRAWING 208-047 SHEET RC-01

SENSING ELEMENT: 74-RCP-1A

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-04	1-01-04
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RC PUMP
OVERCURRENT

EVENT POINT 1380

INDICATED CONDITION:

- o RCP-1B MOTOR AMPS >110% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH MOTOR AMPS INDICATED ON RCP-1B CONTROL STATION.
- o RCP-1B TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF HIGH CURRENT.
- o INSPECT BREAKER FOR DROPPED TARGETS.

DISCUSSION:

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

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

REFERENCES: DRAWING 208-047 SHEET RC-02

SENSING ELEMENT: 74-RCP-1B

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-04	1-01-04
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RC PUMP
OVERCURRENT

EVENT POINT 1382

INDICATED CONDITION:

- o RCP-1C MOTOR AMPS >110% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH MOTOR AMPS INDICATED ON RCP-1C CONTROL STATION.
- o RCP-1C TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF HIGH CURRENT.
- o INSPECT BREAKER FOR DROPPED TARGETS.

DISCUSSION:

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

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

REFERENCES: DRAWING 203-047 SHEET RC-03

SENSING ELEMENT: 74-RCP-1C

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-04	1-01-04
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RC PUMP
OVERCURRENT

EVENT POINT 1384

INDICATED CONDITION:

- o RCP-1D MOTOR AMPS >110% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH MOTOR AMPS INDICATED ON RCP-1D CONTROL STATION.
- o RCP-1D TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF HIGH CURRENT.
- o INSPECT BREAKER FOR DROPPED TARGETS.

DISCUSSION:

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

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

REFERENCES: DRAWING 208-047 SHEET RC-04

SENSING ELEMENT: 74-RCP-1D

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	1-01-06
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[illegible]

RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1266

INDICATED CONDITION:

- o RCP-2A BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-2A CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE DC LIFT OIL PUMP IS OPERATING.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-09

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	1-01-06
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[illegible]

RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1269

INDICATED CONDITION:

- o RCP-2B BREAKER OPEN WITH COMBOL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-2B CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE DC LIFT OIL PUMP IS OPERATING.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-10

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	1-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1272

INDICATED CONDITION:

- o RCP-2C BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-2C CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE DC LIFT OIL PUMP IS OPERATING.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-11

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	1-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1275

INDICATED CONDITION:

- o RCP-2D BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-2D CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE DC LIFT OIL PUMP IS OPERATING.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-12

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	I-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1277

INDICATED CONDITION:

- o RCP-3A BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-3A CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START AC LIFT OIL PUMP.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

THE AC LIFT OIL PUMP WILL NOT AUTO START ON A LOW OIL PRESSURE SIGNAL. SO THE AC LIFT OIL PUMP MUST BE MANUALLY STARTED.

REFERENCES: DRAWING 208-047 SHEET RC-21

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	I-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1281

INDICATED CONDITION:

- o RCP-3B BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-3B CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START AC LIFT OIL PUMP.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

THE AC LIFT OIL PUMP WILL NOT AUTO START ON A LOW OIL PRESSURE SIGNAL.
SO THE AC LIFT OIL PUMP MUST BE MANUALLY STARTED.

REFERENCES: DRAWING 208-047 SHEET RC-22

SENSING ELEMENT: CONTACT SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	1-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1285

INDICATED CONDITION:

- o RCP-3C BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-3C CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START AC LIFT OIL PUMP.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

THE AC LIFT OIL PUMP WILL NOT AUTO START ON A LOW OIL PRESSURE SIGNAL.
SO THE AC LIFT OIL PUMP MUST BE MANUALLY STARTED.

REFERENCES: DRAWING 208-047 SHEET RC-23

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-01-06	I-01-06
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RC PUMP
LIFT OIL PUMP
TRIP

EVENT POINT 1289

INDICATED CONDITION:

- o RCP-3D BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-3D CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START AC LIFT OIL PUMP.
- o INVESTIGATE CAUSE OF PUMP TRIP.

DISCUSSION:

THE AC LIFT OIL PUMP WILL NOT AUTO START ON A LOW OIL PRESSURE SIGNAL. SO THE AC LIFT OIL PUMP MUST BE MANUALLY STARTED.

REFERENCES: DRAWING 208-047 SHEET RC-24

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-01	I-02-01
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[illegible]

RC PUMP B
TRIP

EVENT POINT 1379

INDICATED CONDITION:

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

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-1B CONTROL STATION.
o RCS FLOW IS DECREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.

DISCUSSION:

A RCP TRIP SHOULD CAUSE A PLANT RUNBACK AND CAUSE FEEDWATER TO RE-RATIO.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-02

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-02	I-02-02
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RC PUMP B
MTR VIBRATION
HIGH

EVENT POINT 1312

INDICATED CONDITION:

- o RCP-1B MOTOR VIBRATION >2 MILS AS SENSED BY RC-65-MS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REDUNDANT RCP VIBRATION INDICATION AS SEEN ON RCP VIBRATION MONITORING PANEL, LPP-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR ACTIONS ON HIGH RCP VIBRATION.
- o CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN A RCP WITH HIGH VIBRATION.

DISCUSSION:

THE VIBRATION SWITCH RESET PUSHBUTTON ON THE MAIN CONTROL BOARD MUST BE DEPRESSED TO RESET THIS ALARM.

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-65-MS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-03	I-02-03
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RC PUMP B
CLG WTR FLOW
LOW

EVENT POINT 1420

INDICATED CONDITION:

- o RCP-1B SW COOLING FLOW <260 GPM AS SENSED BY SW-114-FS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o WHITE RCP-1A SW FLOW INTERLOCK LIGHT NOT ON.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY NORMAL SW SYSTEM OPERATION.
- o REFER TO OP-302 FOR SW REQUIREMENTS FOR RUNNING REACTOR COOLANT PUMPS.

DISCUSSION:

THIS ALARM MAY BE CAUSED BY LARGE SW SYSTEM LOADS. IN THESE INSTANCES CONSIDERATION SHOULD BE GIVEN TO RUNNING SWP-1A OR SWP-1B INSTEAD OF USING THE NORMAL DUTY SW PUMP, SWP-1C.

REFERENCES: DRAWING 208-047 SHEET RC-02

SENSING ELEMENT: RC-114-FS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-04	I-02-04
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RC PUMP MTR
THRUST BRG
TEMP HIGH

EVENT POINT 1304

INDICATED CONDITION:

- o RCP UPPER OR LOWER THRUST BEARING TEMPERATURE $>135^{\circ}$ F AS SEEN ON RCP THRUST BEARING TEMPERATURE MONITOR PANEL, RC-133-TI.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP THRUST BEARING TEMPERATURES ON RC-133-TI.
- o ABNORMAL RCP VIBRATIONS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MONITOR RCP COMPUTER GROUPS FOR ABNORMAL TRENDS:
RCP-1A - GROUP 78, RCP-1B - GROUP 79, RCP-1C - GROUP 80, RCP-1D - GROUP 81.
- o INCREASE COOLING TO RCP'S BY STARTING AN EMERGENCY SW PUMP.
- o IF THRUST BEARING TEMP $>200^{\circ}$ F THEN START BOTH LIFT OIL PUMPS AND CONTACT SITE NUCLEAR ENGINEERING FOR EVALUATION.

DISCUSSION:

THIS ALARM INDICATES A LOSS OF LUBRICATION MAY BE OCCURRING TO THE RCP THRUST BEARINGS. IF TEMPERATURES CONTINUE TO INCREASE CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE RCP.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-133-TI

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	1-02-05
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[illegible]

RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1265

INDICATED CONDITION:

- 0 RCP-2A CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-2A CONTROL STATION.
- o RCP-1A TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE AC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF.

REFERENCES: DRAWING 208-047 SHEET RC-09

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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[illegible]

RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1268

INDICATE CONDITION:

- o RCP-2B CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-2B CONTROL STATION.
- o RCP-1B TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE AC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF.

REFERENCES: DRAWING 208-047 SHEET RC-10

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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[illegible]

RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1271

INDICATED CONDITION:

- d RCP-2C CONTROL BREAKER POWER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-2C CONTROL STATION.
- o RCP-1C TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE AC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF.

REFERENCES: DRAWING 208-047 SHEET RC-11

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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[illegible]

RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1274

INDICATED CONDITION:

- o RCP-2D CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-2D CONTROL STATION.
- o RCP-1D TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE AC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF.

REFERENCES: DRAWING 208-047 SHEET RC-12

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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[illegible]

RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1278

INDICATED CONDITION:

- o RCP-3A CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-3A CONTROL STATION.
c RCP-2A TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE DC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF AND LIFT OIL PRESSURE IS <110 PSIG AS SENSED BY RC-43-RS5.

REFERENCES: DRAWING 208-047 SHEET RC-21

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1282

INDICATED CONDITION:

- o RCP-3B CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-3B CONTROL STATION.
- o RCP-2B TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE DC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF AND LIFT OIL PRESSURE IS <110 PSIG AS SENSED BY RC-66-RS5.

REFERENCES: DRAWING 208-047 SHEET RC-22

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1286

INDICATED CONDITION:

- o RCP-3C CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-3C CONTROL STATION.
- o RCP-2C TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE DC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF AND LIFT OIL PRESSURE IS <110 PSIG AS SENSED BY RC-89-RS5.

REFERENCES: DRAWING 208-047 SHEET RC-23

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-05	I-02-05
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RC PUMP
LIFT OIL PUMP
AUTO START

EVENT POINT 1290

INDICATED CONDITION:

- o RCP-3D CONTROL POWER BREAKER CLOSED WITH THE CONTROL HANDLE IN THE NORMAL AFTER STOP POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LIGHT ON WITH A RED FLAG ON RCP-3D CONTROL STATION.
- o RCP-2D TRIP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF AUTO START.
- o VERIFY PROPER LIFT OIL PRESSURE BY OBSERVING WHITE LIFT OIL PERMISSIVE LIGHT ON.

DISCUSSION:

THE DC LIFT OIL PUMP WILL AUTO START IF THE REACTOR COOLANT PUMP TRIPS OR IS TURNED OFF AND LIFT OIL PRESSURE IS <110 PSIG AS SENSED BY RC-112-RS5.

REFERENCES: DRAWING 208-047 SHEET RC-24

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-06	I-02-06
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[illegible]

RC PUMP
OIL LIFT PUMP
OVERLOAD

EVENT POINT 1279

INDICATED CONDITION:

- o RCP-3A MOTOR AMPS >115% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH BATTERY AMPS.
- o LOW LIFT OIL PRESSURE (WHITE LIFT OIL PERMISSIVE LIGHT IS OFF).

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2A, SHUT DOWN RCP-3A.
- o INVESTIGATE CAUSE OF OVERLOAD CONDITION.

DISCUSSION:

IF PROPER LIFT OIL PRESSURE CANNOT BE MAINTAINED WITH THE AC PUMP RUNNING THEN CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE AC LIFT OIL PUMP AND INVESTIGATING THE LIFT OIL SYSTEM.

REFERENCES: DRAWING 208-047 SHEET RC-21

SENSING ELEMENT: 49, BREAKER OVERLOAD RELAY

1-02-06

RC PUMP
OIL LIFT PUMP
OVERLOAD

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ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-06	1-02-06
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[illegible]

RC PUMP
OIL LIFT PUMP
OVERLOAD

EVENT POINT 1287

INDICATED CONDITION:

- o RCP-3C MOTOR AMPS >115% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH BATTERY AMPS.
- o LOW LIFT OIL PRESSURE (WHITE LIFT OIL PERMISSIVE LIGHT IS OFF).

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2C, SHUT DOWN RCP-3C.
- o INVESTIGATE CAUSE OF OVERLOAD CONDITION.

DISCUSSION:

IF PROPER LIFT OIL PRESSURE CANNOT BE MAINTAINED WITH THE AC PUMP RUNNING THEN CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE AC LIFT OIL PUMP AND INVESTIGATING THE LIFT OIL SYSTEM.

REFERENCES: DRAWING 208-047 SHEET RC-23

SENSING ELEMENT: 49. BREAKER OVERLOAD RELAY

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-02-06	I-02-06
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[illegible]

RC PUMP
OIL LIFT PUMP
OVERLOAD

EVENT POINT 1291

INDICATED CONDITION:

- o RCP-3D MOTOR AMPS >115% RATED LOAD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o HIGH BATTERY AMPS.
- o LOW LIFT OIL PRESSURE (WHITE LIFT OIL PERMISSIVE LIGHT IS OFF).

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2D, SHUT DOWN RCP-3D.
- o INVESTIGATE CAUSE OF OVERLOAD CONDITION.

DISCUSSION:

IF PROPER LIFT OIL PRESSURE CANNOT BE MAINTAINED WITH THE AC PUMP RUNNING THEN CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN THE AC LIFT OIL PUMP AND INVESTIGATING THE LIFT OIL SYSTEM.

REFERENCES: DRAWING 208-047 SHEET RC-24

SENSING ELEMENT: 49. BREAKER OVERLOAD RELAY

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-03-01	I-03-01
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RC PUMP C
TRIP

EVENT POINT 1381

INDICATED CONDITION:

- o RCP-1C BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-1C CONTROL STATION.
- o RCS FLOW IS DECREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.

DISCUSSION:

A RCP TRIP SHOULD CAUSE A PLANT RUNBACK AND CAUSE FEEDWATER TO RE-RATIO.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-03

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-02	I-03-02
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RC PUMP C
MTR VIBRATION
HIGH

EVENT POINT 1324

INDICATED CONDITION:

- o RCP-1C MOTOR VIBRATION >2 MILS AS SENSED BY RC-88-MS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REDUNDANT RCP VIBRATION INDICATION AS SEEN ON RCP VIBRATION MONITORING PANEL, LPP-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR ACTIONS ON HIGH RCP VIBRATION.
- o CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN A RCP WITH HIGH VIBRATIONS.

DISCUSSION:

THE VIBRATION SWITCH RESET PUSHBUTTON ON THE MAIN CONTROL BOARD MUST BE DEPRESSED TO RESET THIS ALARM.

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-88-MS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-03	I 03-03
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RC PUMP C
CLG WTR FLOW
LOW

EVENT POINT 1421

INDICATED CONDITION:

- o RCP-1C SW COOLING FLOW <260 GPM AS SENSED BY SW-96-FS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o WHITE RCP-1C SW FLOW INTERLOCK LIGHT NOT ON.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY NORMAL SW SYSTEM OPERATION.
- o REFER TO OP-302 FOR SW REQUIREMENTS FOR RUNNING REACTOR COOLANT PUMPS.

DISCUSSION:

THIS ALARM MAY BE CAUSED BY LARGE SW SYSTEM LOADS. IN THESE INSTANCES CONSIDERATION SHOULD BE GIVEN TO RUNNING SWP-1A OR SWP-1B INSTEAD OF USING THE NORMAL DUTY SW PUMP, SWP-1C.

REFERENCES: DRAWING 208-047 SHEET RC-03

SENSING ELEMENT: SW-96-FS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-04	I-03-04
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RC PUMP
VIBRATION
ALERT

EVENT POINT 0811

INDICATED CONDITION:

- o RCP-1A VIBRATION GREATER THAN SETPOINT ON BENTLY NEVADA VIBRATION MONITORING PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLASHING ALERT LIGHT ON BENTLY NEVADA RCP VIBRATION MONITORING PANEL.
- o REDUNDANT READINGS ON THE BENTLY NEVADA VIBRATION MONITORING PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR VIBRATION GUIDELINES.

DISCUSSION:

REFERENCES: BENTLY NEVADA DRAWINGS

SENSING ELEMENT: VARIOUS RCP VIBRATION PICKUPS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-04	I-03-04
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RC PUMP
VIBRATION
ALERT

EVENT POINT 0812

INDICATED CONDITION:

- o RCP-1B VIBRATION GREATER THAN SETPOINT ON BENTLY NEVADA VIBRATION MONITORING PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLASHING ALERT LIGHT ON BENTLY NEVADA RCP VIBRATION MONITORING PANEL.
- o REDUNDANT READINGS ON THE BENTLY NEVADA VIBRATION MONITORING PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR VIBRATION GUIDELINES.

DISCUSSION:

REFERENCES: BENTLY NEVADA DRAWINGS

SENSING ELEMENT: VARIOUS RCP VIBRATION PICKUPS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-04	1-03-04
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RC PUMP
VIBRATION
ALERT

EVENT POINT 0813

INDICATED CONDITION:

- o RCP-1C VIBRATION GREATER THAN SETPOINT ON BENTLY NEVADA VIBRATION MONITORING PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLASHING ALERT LIGHT ON BENTLY NEVADA RCP VIBRATION MONITORING PANEL.
- o REDUNDANT READINGS ON THE BENTLY NEVADA VIBRATION MONITORING PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR VIBRATION GUIDELINES.

DISCUSSION:

REFERENCES: BENTLY NEVADA DRAWINGS

SENSING ELEMENT: VARIOUS RCP VIBRATION PICKUPS

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-03-04	I-03-04
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RC PUMP
VIBRATION
ALERT

EVENT POINT 0821

INDICATED CONDITION:

- o RCP-1D VIBRATION GREATER THAN SETPOINT ON BENTLY NEVADA VIBRATION MONITORING PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLASHING ALERT LIGHT ON BENTLY NEVADA RCP VIBRATION MONITORING PANEL.
- o REDUNDANT READINGS ON THE BENTLY NEVADA VIBRATION MONITORING PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR VIBRATION GUIDELINES.

DISCUSSION:

REFERENCES: BENTLY NEVADA DRAWINGS

SENSING ELEMENT: VARIOUS RCP VIBRATION PICKUPS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-04	I-03-04
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RC PUMP
VIBRATION
ALERT

EVENT POINT 1937

INDICATED CONDITION:

- o RCP BENTLY NEVADA VIBRATION MONITORING PANEL VIBRATION DETECTOR NOT OK.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FLASHING BYPASSED INDICATION ON THE BENTLY NEVADA VIBRATION MONITORING PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o CONTACT SITE NUCLEAR ENGINEERING.

DISCUSSION:

THIS ALARM INDICATES THAT ONE OF THE VIBRATION PICKUPS IS MALFUNCTIONING. ENGINEERING SHOULD BE NOTIFIED.

REFERENCES: BENTLY NEVADA DRAWINGS

SENSING ELEMENT: VARIOUS RCP VIBRATION PICKUPS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1294

INDICATED CONDITION:

- o RCP-1A MOTOR UPPER OIL LEVEL >1.25" ABOVE NORMAL AS SENSED BY RC-39-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1A MOTOR UPPER OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1A USING COMPUTER GROUP 78.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-39-LSH

ICS-I ANNUNCIATOR RESPONSE

ICS-CY1-03-05

I-03-05

[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1295

INDICATED CONDITION:

- o RCP-1A MOTOR UPPER OIL LEVEL >.75" BELOW NORMAL AS SENSED BY RC-39-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1A UPPER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1A USING COMPUTER GROUP 78.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-39-LSL

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1296

INDICATED CONDITION:

- o RCP-1A MOTOR LOWER OIL LEVEL >1" ABOVE NORMAL AS SENSED BY RC-40-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1A LOWER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1A USING COMPUTER GROUP 78.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-40-LSH

1-03-05

RC PUMP
MTR OIL LEVEL
HIGH/LOW

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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1307

INDICATED CONDITION:

- o RCP-1B MOTOR UPPER OIL LEVEL >1.25" ABOVE NORMAL AS SENSED BY RC-62-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1B MOTOR UPPER OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1B USING COMPUTER GROUP 79.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-62-LSH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1308

INDICATED CONDITION:

- o RCP-1B MOTOR UPPER OIL LEVEL $>.75"$ BELOW NORMAL AS SENSED BY RC-62-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1B UPPER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1B USING COMPUTER GROUP 79.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-62-LSL

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1309

INDICATED CONDITION:

- o RCP-1B MOTOR LOWER OIL LEVEL >1" ABOVE NORMAL AS SENSED BY RC-63-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1B LOWER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1B USING COMPUTER GROUP 79.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-63-LSH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1310

INDICATED CONDITION:

- o RCP-1B MOTOR LOWER OIL LEVEL $> \frac{1}{2}$ " BELOW NORMAL AS SENSED BY RC-63-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1B LOWER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1B USING COMPUTER GROUP 79.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-63-LSL

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1319

INDICATED CONDITION:

- o RCP-1C MOTOR UPPER OIL LEVEL >1.25" ABOVE NORMAL AS SENSED BY RC-85-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1C MOTOR UPPER OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1C USING COMPUTER GROUP 80.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-85-LSH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1320

INDICATED CONDITION:

- o RCP-1C MOTOR UPPER OIL LEVEL >.75" BELOW NORMAL AS SENSED BY RC-85-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-L1, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1C UPPER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1C USING COMPUTER GROUP 80.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-85-LSL

1-03-05

RC PUMP
MTR OIL LEVEL
HIGH/LOW

INDICATED CONDITION:

- REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- OPERATOR ACTIONS FOR A VALID ALARM:

- DISCUSSION:

REFERENCES: DRAWING 208-047 SHEET RC-07

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ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1322

INDICATED CONDITION:

- o RCP-1C MOTOR LOWER OIL LEVEL >1" BELOW NORMAL AS SENSED BY RC-86-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1C LOWER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1C USING COMPUTER GROUP 80.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-86-LSL

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1331

INDICATED CONDITION:

- o RCP-1D MOTOR UPPER OIL LEVEL >1.25" ABOVE NORMAL AS SENSED BY RC-108-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1D MOTOR UPPER OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1D USING COMPUTER GROUP 81.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS. NORMAL LEVEL IS 23 3/16".

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-108-LSH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1332

INDICATED CONDITION:

- o RCP-1D MOTOR UPPER OIL LEVEL $>.75"$ BELOW NORMAL AS SENSED BY RC-108-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1D UPPER MOTOR OIL LEVEL WITH RC-190-LI.
- o MONITOR RCP-1D USING COMPUTER GROUP 81.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR UPPER OIL RESERVOIR HOLDS APPROXIMATELY 175 GALLONS.
NORMAL LEVEL IS $23 \frac{3}{16}"$.

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-108-LSL

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	I-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1333

INDICATED CONDITION:

- o RCP-1D MOTOR LOWER OIL LEVEL >1" ABOVE NORMAL AS SENSED BY RC-108-LSH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES HIGH LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1D LOWER MOTOR OIL LEVEL WITH RC-190-L1.
- o MONITOR RCP-1D USING COMPUTER GROUP 81.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-108-LSH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-05	1-03-05
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[illegible]

RC PUMP
MTR OIL LEVEL
HIGH/LOW

EVENT POINT 1334

INDICATED CONDITION:

- o RCP-1D MOTOR LOWER OIL LEVEL >1" BELOW NORMAL AS SENSED BY RC-109-LSL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP MOTOR OIL LEVEL INDICATION, RC-190-LI, INDICATES LOW LEVEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TREND RCP-1D LOWER MOTOR OIL LEVEL WITH RC-190-L1.
- o MONITOR RCP-1D USING COMPUTER GROUP 81.
- o NOTIFY SITE NUCLEAR ENGINEERING.
- o NOTIFY ELECTRIC SHOP TO PREPARE TO ADD OIL TO MOTOR.

DISCUSSION:

RC PUMP MOTOR LOWER OIL RESERVOIR HOLDS APPROXIMATELY 15 GALLONS.
NORMAL LEVEL IS 14 9/16".

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-109-LSL

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-03-00	I-03-06
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RC PUMP
AIR COOLER
LEAK

EVENT POINT 1298

INDICATED CONDITION:

- o RCP-1A MOTOR COOLER SW LEAK AS SENSED BY RC-41-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SW COOLING WATER SUPPLY TO COOLER DIFFERENTIAL FLOW ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MONITOR RCP-1A PARAMETERS USING COMPUTER GROUP 78.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN RCP-1A IF THERE IS A SUBSTANTIAL AIR COOLER LEAK.

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-41-LS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-06	I-03-06
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[illegible]

RC PUMP
AIR COOLER
LEAK

EVENT POINT 1311

INDICATED CONDITION:

- o RCP-1B MOTOR COOLER SW LEAK AS SENSED BY RC-64-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 6 SW COOLING WATER SUPPLY TO COOLER DIFFERENTIAL FLOW ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MONITOR RCP-1B PARAMETERS USING COMPUTER GROUP 79.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN RCP-1B IF THERE IS A SUBSTANTIAL AIR COOLER LEAK.

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-64-LS

ICS-1 ANNUNCIATOR RESPONSE

ICS-CY1-03-06

1-03-06

[illegible]

RC PUMP
AIR COOLER
LEAK

EVENT POINT 1323

INDICATED CONDITION:

- 9 RCP-1C MOTOR COOLER SW LEAK AS SENSED BY RC-87-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SW COOLING WATER SUPPLY TO COOLER DIFFERENTIAL FLOW ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MONITOR RCP-1C PARAMETERS USING COMPUTER GROUP 80.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN A RCP-1C IF THERE IS A SUBSTANTIAL AIR COOLER LEAK.

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-87-LS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-03-06	I-03-06
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[illegible]

RC PUMP
AIR COOLER
LEAK

EVENT POINT 1335

INDICATED CONDITION:

- o RCP-1D MOTOR COOLER SW LEAK AS SENSED BY RC-110-LS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o SW COOLING WATER SUPPLY TO COOLER DIFFERENTIAL FLOW ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MONITOR RCP-1D PARAMETERS USING COMPUTER GROUP 81.
- o NOTIFY SITE NUCLEAR ENGINEERING.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO SHUTTING DOWN A RCP-1D IF THERE IS A SUBSTANTIAL AIR COOLER LEAK.

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-110-LS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-01	I-04-01
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RC PUMP D
TRIP

EVENT POINT 1383

INDICATED CONDITION:

- o RCP-1D BREAKER OPEN WITH CONTROL HANDLE IN THE NORMAL AFTER START POSITION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN LIGHT ON WITH A RED FLAG ON RCP-1D CONTROL STATION.
- o RCS FLOW IS DECREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.

DISCUSSION:

A RCP TRIP SHOULD CAUSE A PLANT RUNBACK AND CAUSE FEEDWATER TO RE-RATIO.
ADDRESS STS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-04

SENSING ELEMENT: CONTROL SWITCH AND BREAKER CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-02	I-04-02
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RC PUMP D
MTR VIBRATION
HIGH

EVENT POINT 1336

INDICATED CONDITION:

- o RCP-1D MOTOR VIBRATION >2 MILS AS SENSED BY RC-111-MS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o REDUNDANT RCP VIBRATION INDICATIONS AS SEEN ON RCP VIBRATION MONITORING PANEL, LPP-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR ACTIONS ON HIGH RCP VIBRATION.
- o CONSIDERATION SHOULD BE GIVEN SHUTTING DOWN A RCP WITH HIGH VIBRATIONS.

DISCUSSION:

THE VIBRATION SWITCH RESET PUSHBUTTON ON THE MAIN CONTROL BOARD MUST BE DEPRESSED TO RESET THIS ALARM.

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-111-MS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-03	I-04-03
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RC PUMP D
CLG WTR FLOW
LOW

EVENT POINT 1422

INDICATED CONDITION:

- o RCP-1D SW COOLING FLOW IS <260 GPM AS SENSED BY SW-102-FS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o WHITE RCP-1D SW FLOW INTERLOCK LIGHT NOT ON.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY NORMAL SW SYSTEM OPERATION.
- o REFER TO OP-302 FOR SW REQUIREMENTS FOR RUNNING REACTOR COOLANT PUMPS.

DISCUSSION:

THIS ALARM MAY BE CAUSED BY LARGE SW SYSTEM LOADS. IN THESE INSTANCES CONSIDERATION SHOULD BE GIVEN TO RUNNING SWP-1A OR SWP-1B INSTEAD OF USING THE NORMAL DUTY SW PUMP, SWP-1C.

REFERENCES: DRAWING 208-047 SHEET RC-04

SENSING ELEMENT: SW-102-FS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-04	I-04-04
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RC PUMP SEAL
UPPER STAGE
TEMP HIGH

EVENT POINT 0787

INDICATED CONDITION:

- o RCP UPPER STAGE TEMPERATURE >150° F AS SENSED BY RC-206-TS, RC-209-TS, RC-212-TS, RC-215-TS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP SEAL DATA RECORDERS, RC-19A, B-PR1z2.
- o COMPUTER POINTS:
RCP-1A, X-383 RCP-1B, X-386 RCP-1C, X-389 RCP-1D, X-392.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-302 FOR ABNORMAL RCP SEAL TEMPERATURES.
- o CONTACT SITE NUCLEAR ENGINEERING.
- o MONITOR RCP COMPUTER GROUP FOR INCREASING TRENDS:
RCP-1A GRP. 78 RCP-1B GRP. 79 RCP-1C GRP. 80 RCP-1D GRP. 81

DISCUSSION:

THIS ALARM COMES IN WHEN ANY RCP UPPER STAGE TEMPERATURE IS HIGH. THE OPERATOR MUST DETERMINE WHICH IS THE EFFECTED RCP BY OBSERVING THE UPPER STAGE COMPUTER POINTS LISTED OR THE RCP SEAL CHART RECORDERS BEHIND THE CONTROL BOARD.

REFERENCES: DRAWING 208-047 SHEET RC-028

SENSING ELEMENT: RC-206,209,212,215-TS

1-04-05

RC PUMP
OIL FILTER Δ P
HIGH

INDICATED CONDITION:

- REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- OPERATOR ACTIONS FOR A VALID ALARM:

- ### DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-05

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ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	1-04-05
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[illegible]

RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1302

INDICATED CONDITION:

- o RCP-3A SUCTION OIL FILTER DIFFERENTIAL PRESSURE >2 PSID AS SENSED BY RC-44-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1A WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2A.
- o SHUT DOWN RCP-3A.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-05

SENSING ELEMENT: RC-44-PS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	I-04-05
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RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1314

INDICATED CONDITION:

- o RCP-2B SUCTION OIL FILTER DIFFERENTIAL PRESSURE >2 PSID AS SENSED BY RC-67-PS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 0 RCP-1B WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.
0 RCP-1B DC LIFT OIL PUMP, RCP-3B AUTO STARTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-3B.
- o SHUT DOWN RCP-2B.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-67-PS1

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	I-04-05
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RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1315

INDICATED CONDITION:

- o RCP-3B SUCTION OIL FILTER DIFFERENTIAL PRESSURE >2 PSID AS SENSED BY RC-67-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1B WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2B.
- o SHUT DOWN RCP-3B.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-06

SENSING ELEMENT: RC-67-PS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	I-04-05
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[illegible]

RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1326

INDICATED CONDITION:

- o RCP-1C AC LIFT OIL PUMP, RCP-2C SUCTION OIL FILTER DIFFERENTIAL PRESSURE
 >2 PSID AS SENSED BY RC-90-PS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1C WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.
- o RCP-1C DC LIFT OIL PUMP, RCP-3C AUTO STARTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-3C.
- o SHUT DOWN RCP-2C.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-90-PS1

ICS-1 ANNUNCIATOR RESPONSE

ICS-CY1-04-05

I-04-05

[illegible]

RC PUMP

OIL FILTER Δ P

HIGH

EVENT POINT 1327

INDICATED CONDITION:

- o RCP-1C DC LIFT OIL PUMP, RCP-3C SUCTION OIL FILTER DIFFERENTIAL PRESSURE
 >2 PSID AS SENSED BY RC-90-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1C WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2C.
- o SHUT DOWN RCP-3C.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-07

SENSING ELEMENT: RC-90-PS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	I-04-05
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RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1338

INDICATED CONDITION:

- o RCP-2D SUCTION OIL FILTER DIFFERENTIAL PRESSURE >2 PSID AS SENSED BY RC-113-PS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1D WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.
- o RCP-1D DC LIFT OIL PUMP, RCP-3D AUTO STARTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-3D.
- o SHUT DOWN RCP-2D.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-113-PS1

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-04-05	I-04-05
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RC PUMP
OIL FILTER Δ P
HIGH

EVENT POINT 1339

INDICATED CONDITION:

- o RCP-3D SUCTION OIL FILTER DIFFERENTIAL PRESSURE >2 PSID AS SENSED BY RC-113-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCP-1D WHITE LIFT OIL PERMISSIVE LIGHT IS OUT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o START RCP-2D.
- o SHUT DOWN RCP-3D.

DISCUSSION:

MAINTENANCE SHOULD BE NOTIFIED TO CHANGE FILTER.

REFERENCES: DRAWING 208-047 SHEET RC-08

SENSING ELEMENT: RC-113-PS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-05-01	I-05-01
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PORV
SAFETY VALVE
OPEN

EVENT POINT 1957

INDICATED CONDITION:

- o PRESSURIZER CODE SAFETY VALVE, RCV-8, ULTRASONIC INDICATION IS IN THE "VALVE OPEN" REGION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE >2500 PSIG.
- o RCS PRESSURE DECREASING.
- o RC DRAIN TANK PRESSURE AND TEMPERATURE INCREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o LOWER RCS PRESSURE USING PORV OR SPRAY VALVE.

DISCUSSION:

THIS ALARM MUST BE RESET LOCALLY IN THE PORV POSITION INDICATION AND TSAT CABINET IN THE "B" ES 4160V. SWITCHGEAR ROOM.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: ALARM SWITCH 1

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-05-01	I-05-01
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PORV
SAFETY VALVE
OPEN

EVENT POINT 1958

INDICATED CONDITION:

- o PRESSURIZER CODE SAFETY VALVE, RCV-9, ULTRASONIC INDICATION IS IN THE "VALVE OPEN" REGION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE >2500 PSIG.
- o RCS PRESSURE DECREASING.
- o RC DRAIN TANK PRESSURE AND TEMPERATURE INCREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o LOWER RCS PRESSURE USING PORV OR SPRAY VALVE.

DISCUSSION:

THIS ALARM MUST BE RESET LOCALLY IN THE PORV POSITION INDICATION AND TSAT CABINET IN THE "B" ES 4160V. SWITCHGEAR ROOM.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: ALARM SWITCH 2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-05-01	1-05-01
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PORV
SAFETY VALVE
OPEN

EVENT POINT 1959

INDICATED CONDITION:

- o PRESSURIZER PILOT OPERATED RELIEF VALVE, RCV-10, ULTRASONIC INDICATION IS IN THE "VALVE OPEN" REGION.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE >2450 PSIG.
- o RCS PRESSURE DECREASING.
- o RC DRAIN TANK PRESSURE AND TEMPERATURE INCREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o LOWER RCS PRESSURE USING SPRAY VALVE.

DISCUSSION:

THIS ALARM MUST BE RESET LOCALLY IN THE PORV POSITION INDICATION AND TSAT CABINET IN THE "B" ES 4160V. SWITCHGEAR ROOM.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: ALARM SWITCH 3

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-05-02	I-05-02
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PORV
SELECTED
CLOSED

EVENT POINT 1445

INDICATED CONDITION:

- o PILOT OPERATED RELIEF VALVE, RCV-10 CONTROL SWITCH SELECTED TO "CLOSED."

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o POSITION OF PORV SELECTOR SWITCH.

OPERATOR ACTIONS FOR A VALID ALARM:

- o EVALUATE THE NECESSITY FOR PORV TO BE SELECTED CLOSED.

DISCUSSION:

THIS CONDITION RENDERS THE PORV INOPERABLE.
ADDRESS STS AND LTOPS REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-025

SENSING ELEMENT: CONTROL SWITCH CONTACTS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-05-06	I-05-06
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[illegible]

LOOSE PARTS
MONITORING
TROUBLE

EVENT POINT 1936

INDICATED CONDITION:

- o ANY ONE OF THE LOOSE PARTS MONITORING CHANNELS EXCEEDING ALARM SETPOINT.

REDUNDANT INDICATION WHICH WILL VERIFY ARM:

- o RED ALARM INDICATION ON LOOSE PARTS MONITORING CHANNELS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-506 FOR LPMS ALARM RESPONSE AND ANALYSIS GUIDELINES.

DISCUSSION:

REFERENCES:

SENSING ELEMENT: VARIOUS LPMS SENSORS

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-06-01	I-06-01
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PORV
SOLENOID
ENERGIZED

EVENT POINT 1442

INDICATED CONDITION:

- o PILOT OPERATED RELIEF VALVE, RCV-10, SOLENOID IS ENERGIZED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RCS PRESSURE >2450 PSIG.
- o PORV SWITCH RED INDICATING LIGHT IS ON.
- o ULTRASONIC FLOW INDICATION FOR PORV IN THE "VALVE OPEN REGION."

OPERATOR ACTIONS FOR A VALID ALARM:

- o IF PORV IS NOT REQUIRED TO BE OPEN THEN SELECT PORV TO "CLOSED"
 - IF RC PRESSURE IS FAST DECREASING INDICATING THE PORV IS LEAKING BY OR NOT FULL CLOSED, THEN CLOSE PORV BLOCK VALVE RCV-11.

DISCUSSION:

THIS ALARM INDICATES ONLY THAT THE PORV OPEN SOLENOID IS ENERGIZED. THIS IS NOT ACTUAL PORV POSITION INDICATION. ULTRASONIC FLOW INDICATION SHOULD BE USED TO VERIFY THE PORV OPEN.

PORV WILL OPEN AT >2450 PSIG AND CLOSE AT <2380 PSIG WHEN SELECTED TO HIGH
PORV WILL OPEN AT >500 PSIG AND CLOSE AT <450 PSIG WHEN SELECTED TO LOW.

REFERENCES: DRAWING 208-047 SHEET RC-025

SENSING ELEMENT: 20X-RCV-10

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-06-02	I-06-02
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PORV
BLOCK VALVE
CLOSED

EVENT POINT 1360

INDICATED CONDITION:

- o PILOT OPERATED RELIEF, RCV-10, BLOCK VALVE, RCV-11 FULL CLOSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GREEN INDICATING LIGHT IS ON FOR RCV-11.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ASSESS REQUIREMENTS FOR PORV BLOCK VALVE, RCV-11 BEING CLOSED.

DISCUSSION:

ADDRESS STS AND LTOP REQUIREMENTS CONCERNING THIS CONDITION.

REFERENCES: DRAWING 208-047 SHEET RC-013

SENSING ELEMENT: 33C VALVE CLOSED CONTACT

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-07-01	I-07-01
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PRESSURIZER
LEVEL
HIGH

EVENT POINT 1371

INDICATED CONDITION:

- o PRESSURIZER LEVEL >275" AS SENSED BY RC-1-LS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PRESSURIZER LEVEL RECORDERS.
- o COMPUTER PRINT R-201.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MANUALLY CONTROL RCS MAKEUP AND LETDOWN TO REGAIN PRESSURIZER LEVEL.
- o IF PRESSURIZER LEVEL REACHES 290", REFER TO EOP-02.

DISCUSSION:

HIGH PRESSURIZER LEVELS INDICATE EITHER PROBLEMS WITH MAKEUP/LETDOWN OR A RCS HEATUP HAS OCCURRED.
REFER TO OP-402 CONCERNING LIMITS ON LETDOWN FLOW.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-1-LS1

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-07-01	1-07-01
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PRESSURIZER
LEVEL
HIGH

EVENT POINT 1372

INDICATED CONDITION:

- o PRESSURIZER LEVEL >240" AS SENSED BY RC-1-LS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PRESSURIZER LEVEL RECORDERS.
- o COMPUTER POINT R-201.

OPERATOR ACTIONS FOR A VALID ALARM:

- o MANUALLY CONTROL RCS MAKEUP AND LETDOWN TO REGAIN PRESSURIZER LEVEL.
- o IF PRESSURIZER LEVEL REACHES 290", REFER TO EOP-02.

DISCUSSION:

HIGH PRESSURIZER LEVELS INDICATE EITHER PROBLEMS WITH MAKEUP/LETDOWN OR A RCS HEATUP HAS OCCURRED.
REFER TO OP-402 CONCERNING LIMITS ON LETDOWN FLOW.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-1-LS2

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-07-02	I-07-02
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PRESSURIZER
HEATER SCR
FAILURE

EVENT POINT 1303

INDICATED CONDITION:

- o RC PRESSURIZER HEATER SCR FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED INDICATING LIGHT ON PRESSURIZER HEATER CONTROL CABINET.
- o RCS PRESSURE ABNORMAL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ATTEMPT TO RESET SCR FAILURE BY OPENING THEN RECLOSING FEEDER BREAKER TO HEATER GROUP WITH THE SCR FAILURE.
- o MANUALLY CONTROL RCS PRESSURE AS REQUIRED.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES A DIFFERENTIAL VOLTAGE EXISTS OR HAS EXISTED BETWEEN TWO LEGS OF THE SCR CONTROL CIRCUIT FOR THE PRESSURIZER HEATERS. THIS DOES NOT NECESSARILY MEAN THAT CONTROL HAS BEEN LOST TO THOSE HEATERS. THIS ALARM SEALS IN AND CANNOT BE CLEARED UNTIL THE CONTROL CIRCUIT IS DEENERGIZED.

REFERENCES: DRAWING 208-047 SHEET RC-019

SENSING ELEMENT: SCR DIFFERENTIAL VOLTAGE RELAYS

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-07-05	1-07-05
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[illegible]

RCS
PRESS HIGH
TEMP LOW

EVENT POINT 1935

INDICATED CONDITION:

- o REACTOR COOLANT PRESSURE IS >500 PSIG AS SENSED BY RC-3A-PS4 AND THE PORV, RCV-10, IS SELECTED TO LOW RANGE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PORV, RCV-10, IS OPEN.
- o WIDE RANGE RCS PRESSURE INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- 6 REDUCE RCS PRESSURE BY INCREASING LETDOWN OR USE OF PRESSURIZER SPRAY VALVE.

DISCUSSION:

THIS ALARM INDICATES THAT RCS LOW TEMP AND PRESS RECORDER, RC-154-PR/TR HAS SHIFTED TO FAST SPEED.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: 86/RC3A-PS0

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-01	I-08-01
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PRESSURIZER
LEVEL
LOW

EVENT POINT 1373

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o PRESSURIZER LEVEL IS <200" AS SENSED BY RC-1-LY4.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o PRESSURIZER LEVEL INDICATION.
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o VERIFY PROPER OPERATION OF PRESSURIZER LEVEL CONTROL VALVE, MUV-31. o INCREASE PRESSURIZER LEVEL BY MANUALLY CONTROLLING MAKEUP/LETDOWN. o TERMINATE PLANT COOLDOWN AS REQUIRED.
<p>DISCUSSION:</p>
<p>REFERENCES: DRAWING 208-047 SHEET RC-027</p>
<p>SENSING ELEMENT: RC-1-LY4</p>

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-01	I-08-01
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PRESSURIZER
LEVEL
LOW

EVENT POINT 1374

INDICATED CONDITION:

- o PRESSURIZER LEVEL IS <40" AS SENSED BY RC-1-LS1/RC-1-LS3.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PRESSURIZER LEVEL INDICATION.
- o WHITE INDICATOR LIGHTS FOR PRESSURIZER HEATERS ARE OFF.
- o PRESSURIZER HEATER BAILEY CONTROL STATION SHIFTS TO MANUAL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER OPERATION OF PRESSURIZER LEVEL CONTROL VALVE, MUV-31.
- o INCREASE PRESSURIZER LEVEL BY MANUALLY CONTROLLING MAKEUP/LETDOWN.
- o TERMINATE PLANT COOLDOWN AS REQUIRED.

DISCUSSION:

A LOW-LOW LEVEL IN THE PRESSURIZER WILL DE-ENERGIZE PRESSURIZER HEATERS. HEATER GROUPS 7 THRU 13 ARE AFFECTED, REFER TO THE 208-47 DRAWINGS FOR SPECIFIC GROUPS ASSOCIATED WITH EACH SWITCH RELAY.

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-1-LS1, RC-1-LS3

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1344

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 1 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR. 4A ALARM SWITCH

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1348

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 2 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR.2A ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1352

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 3 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RC PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR.4B ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1356

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 4 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR.4C ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	1-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1359

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 5 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR. 3A ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1387

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 6 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-018

SENSING ELEMENT: BKR. 4A ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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**PRESSURIZER
HEATER GROUP
TROUBLE**

EVENT POINT 1388

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 7 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR. 1C ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1389

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 8 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR.2C ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	1-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1390

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 9 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR.3C ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	1-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1391

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 10 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR. 1D ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1392

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 11 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR, 2C ALARM SWITCH

ICS-1 ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1393

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 12 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

SENSING ELEMENT: BKR.3C ALARM SWITCH

ICS-I ANNUNCIATOR RESPONSE	ICS-CY1-08-02	I-08-02
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PRESSURIZER
HEATER GROUP
TROUBLE

EVENT POINT 1394

INDICATED CONDITION:

- o PRESSURIZER HEATER GROUP 13 OVERCURRENT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INDICATING LIGHTS FOR HEATER GROUP OUT.
- o FEEDER BREAKER FOR THE HEATER GROUP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE.
- o MONITOR PRESSURIZER OPERATION.
- o NOTIFY ELECTRIC SHOP.

DISCUSSION:

THIS ALARM INDICATES AN OVERCURRENT CONDITION HAS OCCURRED ON THE PRESSURIZER HEATER GROUP FEEDER BREAKER. THIS CONDITION TRIPS THE FEEDER BREAKER.

REFERENCES: DRAWING 208-047 SHEET RC-020

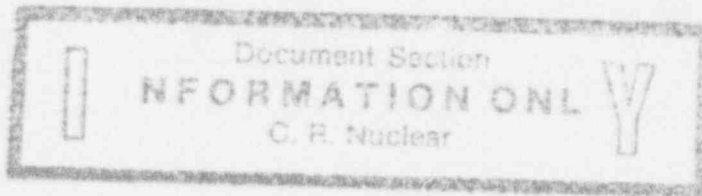
SENSING ELEMENT: BKR. 4C ALARM SWITCH

Rev. 16

08/12/93

Effective Date

8/23/93



ANNUNCIATOR RESPONSE

AR-503

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

ICS K ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENT

APPROVED BY: Interpretation Contact

Dr. June -o- Bill Marshall

DATE:

8/23/93

INTERPRETATION CONTACT: Manager, Nuclear Plant
Operations

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1 Annunciator Response	3

1.0 PURPOSE

- 1.1 Establish a reference document for each Annunciator Window on the ICS-CY3 Lampbox.
- 1.2 Establish operator actions for valid Annunciator alarms on the ICS-CY3 Lampbox.
- 1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the ICS-CY3 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

- | 2.1.1 EOP, Emergency Operating Procedure
- | 2.1.2 AP-581 - Loss of NNI-X
- | 2.1.3 AP-582 - Loss of NNI Y
- 2.1.4 OP-501 - Reactor Non Nuclear Instrumentation
- 2.1.5 OP-504 - Integrated Control System
- 2.1.6 OP-605 - Feedwater System
- 2.1.7 AP-545 - Plant Runback
- 2.1.8 OP-608 - OTSG's and Main Steam 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-224-049

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 ICS-CY3 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-01	K-01-01
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NNI X
POWER
FAILURE

EVENT POINT 1143

INDICATED CONDITION:

- o NNI-X 24V DC BUS POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-X POWER LIGHT IS OFF, LOCATED ON THE REDUNDANT INSTRUMENT PANEL.
- o NNI-X POWER SUPPLY MONITOR HAS NO INDICATING LIGHTS ON, LOCATED IN NNI CABINET 3.
- o S-1 AND S-2 SWITCHES ARE TRIPPED OFF, LOCATED IN NNI CABINET 2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-581.
- o REFER TO OP-501 FOR REENERGIZING NNI-X DC POWER SUPPLIES.

DISCUSSION:

REDUNDANT POWER SOURCES TO NNI-X DC POWER SUPPLIES IS VBDP-1 BKR 8 AND VBDP-5 BKR.25.

A LOSS OF A POSITIVE OR NEGATIVE BUS SHOULD TRIP BOTH S-1 AND S-2.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-01	K-01-01
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NNI X
POWER
FAILURE

EVENT POINT 1144

INDICATED CONDITION:

- o NNI-X 120V AC BUS FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-X POWER LIGHT IS OFF, LOCATED ON THE REDUNDANT INSTRUMENT PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-581.
- o REFER TO OP-501 FOR REENERGIZING NNI-X AC BUS.

DISCUSSION:

REDUNDANT POWER SOURCES TO NNI-X AC BUS IS VBDP-1 BKR 11 AND VBDP-5 BKR 7.
THIS ALARM INDICATES A LOSS OF 120V AC FIELD LOADS HAS OCCURRED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-03	K-01-03
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TRANSMITTER
POWER SUPPLY
ON BACKUP

EVENT POINT 0933

INDICATED CONDITION:

- o TRANSMITTER POWER SUPPLY CABINET "A" PRIMARY POWER SELECTOR SWITCH IS IN "AUTO" AND STANDBY POWER SELECTOR SWITCH IS IN "STANDBY" AND PRIMARY POWER IS LOST.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED STANDBY POWER ON LIGHT ON TRANSMITTER POWER SUPPLY CABINET LOCATED IN THE CRD ROOM IS ON

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE ANY PLANT TRANSIENT THAT MAY RESULT FROM A TRANSMITTER POWER FAILURE.
- o CONTACT ELECTRIC SHOP.
- o VERIFY VBDP-1 BREAKER 1 IS ON.

DISCUSSION:

THE TRANSMITTER POWER SUPPLY CABINET IN THE CRD ROOM PROVIDES POWER TO OVER 50 NON-VITAL TRANSMITTERS IN THE PLANT. NORMAL POWER SUPPLY TO THE "A" CABINET IS VBDP-1 BKR-1 WITH A BACKUP FROM VBDP-5 BKR-11. A POWER SEEKING ABT IS INSTALLED TO SELECT ONE OF THESE POWER SOURCES. TO RESTORE NORMAL SYSTEM LINEUP AFTER A TRANSFER HAS OCCURRED THE STANDBY POWER SWITCH MUST BE PLACED IN RESET THEN BACK TO AUTO AFTER NORMAL POWER HAS BEEN RECOVERED.

REFERENCES: DRAWING EC-210-586

SENSING ELEMENT: POWER AVAILABLE RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-03	K-01-03
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TRANSMITTER
POWER SUPPLY
ON BACKUP

EVENT POINT 0934

INDICATED CONDITION:

- o TRANSMITTER POWER SUPPLY CABINET "B" PRIMARY POWER SELECTOR SWITCH IS IN "AUTO" AND STANDBY POWER SELECTOR SWITCH IS IN "STANDBY" AND PRIMARY POWER IS LOST.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED STANDBY POWER ON LIGHT ON TRANSMITTER POWER SUPPLY CABINET LOCATED IN THE CRD ROOM IS ON.

OPERATOR ACTIONS FOR A VALID ALARM:

- o CONTACT ELECTRIC SHOP.
- o VERIFY VBDP-2 BREAKER 1 IS ON.

DISCUSSION:

THE TRANSMITTER POWER SUPPLY CABINET IN THE CRD ROOM PROVIDES POWER TO OVER 50 NON-VITAL TRANSMITTERS IN THE PLANT. NORMAL POWER SUPPLY TO THE "B" CABINET IS VBDP-2 BKR-1 WITH A BACKUP FROM VBDP-6 BKR-14. THERE IS A POWER SEEKING ABT INSTALLED TO SELECT A POWER SOURCE FROM THESE SOURCES. TO RESTORE NORMAL SYSTEM LINEUP AFTER A TRANSFER HAS OCCURRED THE STANDBY POWER SWITCH MUST BE PLACED IN RESET THEN BACK TO AUTO AFTER NORMAL POWER HAS BEEN RECOVERED.

REFERENCES: DRAWING EC-210-587

SENSING ELEMENT: POWER AVAILABLE RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-05	K-01-05
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CNTRL TRANSFER
TO
REMOTE S/D PNL

EVENT POINT 2036

INDICATED CONDITION:

- o "A" REMOTE SHUTDOWN TRANSFER SWITCH IS IN RSP POSITION, LOCATED IN REMOTE SHUTDOWN AUX RELAY CABINET "A".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED TRANSFER INDICATOR LIGHT IS ON, LOCATED ON THE RSP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REPOSITION SWITCH AS NECESSARY.

DISCUSSION:

THIS ALARM INDICATES THAT CONTROL OF "A" SIDE COMPONENTS HAS BEEN REMOVED FROM THE CONTROL ROOM.
CONTROL SHOULD BE REGAINED FROM THE CONTROL ROOM OR THE REMOTE SHUTDOWN PANEL SHOULD BE MANNED.

REFERENCES: DRAWING 208-082 SHEET RS-17

SENSING ELEMENT: RRR-SPA-1-17

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-05	K-01-05
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CNTRL TRANSFER
TO
REMOTE S/D PNL

EVENT POINT 2037

INDICATED CONDITION:

- o "B" REMOTE SHUTDOWN TRANSFER SWITCH IS IN RSP POSITION, LOCATED IN REMOTE SHUTDOWN AUX RELAY CABINET "B".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED TRANSFER INDICATOR LIGHT IS ON, LOCATED ON THE RSP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REPOSITION SWITCH AS NECESSARY.

DISCUSSION:

THIS ALARM INDICATES THAT CONTROL OF "B" SIDE COMPONENTS HAS BEEN REMOVED FROM THE CONTROL ROOM.
CONTROL SHOULD BE REGAINED FROM THE CONTROL ROOM OR THE REMOTE SHUTDOWN PANEL SHOULD BE MANNED.

REFERENCES: DRAWING 208-082 SHEET RS-18

SENSING ELEMENT: RRR-SPB-1-17

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-05	K-01-05
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CNTRL TRANSFER
TO
REMOTE S/D PNL

EVENT POINT 2038

INDICATED CONDITION:

- o "AB" REMOTE SHUTDOWN TRANSFER SWITCH IS IN RSP POSITION, LOCATED ON REMOTE SHUTDOWN PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED TRANSFER INDICATOR LIGHT IS ON, LOCATED ON RSP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REPOSITION SWITCH AS NECESSARY.

DISCUSSION:

THIS ALARM INDICATES THAT CONTROL OF "AB" COMPONENT'S HAS BEEN REMOVED FROM THE CONTROL ROOM.
CONTROL SHOULD BE REGAINED FROM THE CONTROL ROOM OR THE REMOTE SHUTDOWN PANEL SHOULD BE MANNED.

REFERENCES: DRAWING 208-082 SHEET RS-10

SENSING ELEMENT: CS-ISAB

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-01-05	K-01-05
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CNTRL TRANSFER
TO
REMOTE S/D PNL

EVENT POINT 2039

INDICATED CONDITION:

- o "NON-VITAL" REMOTE SHUTDOWN TRANSFER SWITCH IS IN RSP POSITION, LOCATED ON REMOTE SHUTDOWN PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED TRANSFER INDICATOR LIGHT IS ON, LOCATED ON RSP.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REPOSITION SWITCH AS NECESSARY.

DISCUSSION:

THIS ALARM INDICATES THAT CONTROL OF "NON-VITAL" COMPONENTS HAS BEEN REMOVED FROM THE CONTROL ROOM.
CONTROL SHOULD BE REGAINED FROM THE CONTROL ROOM OR THE REMOTE SHUTDOWN PANEL SHOULD BE MANNED.

REFERENCES: DRAWING 208-082 SHEET RS-09

SENSING ELEMENT: CS-ISNS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-01	K-02-01
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NNI Y
POWER
FAILURE

EVENT POINT 1145

INDICATED CONDITION:

- o NNI-Y 24V DC BUS POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-Y POWER LIGHT IS OFF, LOCATED ON THE REDUNDANT INSTRUMENT PANEL.
- o NNI-Y POWER SUPPLY MONITOR HAS NO INDICATING LIGHTS ON, LOCATED IN NNI CABINET 7.
- o S-1 AND S-2 SWITCHES ARE TRIPPED OFF, LOCATED IN NNI CABINET 8.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-582.
- o REFER TO OP-501 FOR REENERGIZING NNI-Y DC POWER SUPPLIES.

DISCUSSION:

REDUNDANT POWER SOURCES TO NNI-Y DC POWER SUPPLIES ARE VBDP-6 BKR 25 AND VBDP-7 BKR 18.

A LOSS OF A POSITIVE OR NEGATIVE BUS SHOULD TRIP BOTH S-1 AND S-2.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-01	K-02-01
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NNI Y
POWER
FAILURE

EVENT POINT 1146

INDICATED CONDITION:

- o NNI-Y 120V AC BUS FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-Y POWER LIGHT IS OFF, LOCATED ON THE REDUNDANT INSTRUMENT PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-582.
- o REFER TO OP-501 FOR REENERGIZING NNI-Y AC BUS.

DISCUSSION:

REDUNDANT POWER SOURCES TO NNI-Y AC BUS ARE VBDP-6 BKR 10 AND VBDP-7 BKR 17

THIS ALARM INDICATES A LOSS OF 120V AC FIELD LOADS HAS OCCURRED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 0773

INDICATED CONDITION:

- o SASS POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED LED INDICATOR IS OFF, LOCATED ON ONE OF THE SASS POWER SUPPLIES.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o NOTIFY I&C SHOP.

DISCUSSION:

THE SASS SYSTEM HAS REDUNDANT FEEDS FROM BOTH NNI-X AND NNI-Y. THESE INPUTS SUPPLY SEPARATE POWER SUPPLIES FOR EACH SASS RACK. POWER IS THEN AUCTIONEERED INSIDE THE RACK TO SUPPLY EACH SASS MODULE, IF ONE OF THESE POWER SUPPLIES FAILS THERE SHOULD BE NO EFFECT ON THE SASS RACK.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 0778

INDICATED CONDITION:

- o POSITIVE 24V NNI-Y POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o POSITIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE NNI-Y POWER SUPPLY MONITOR IN NNI CABINET 7.
- o + 24 V NNI-Y POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO NNI-Y +24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT NNI BUS POWER.

REFERENCES: DRAWING NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 0780

INDICATED CONDITION:

- o NEGATIVE 24V NNI-Y POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NEGATIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE NNI-Y POWER SUPPLY MONITOR IN NNI CABINET 7.
- o - 24 V NNI-Y POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO NNI-Y -24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT NNI BUS POWER.

REFERENCES: DRAWING NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 0960

INDICATED CONDITION:

- o NNI-X 120V AC FIELD LOADS TRANSFERRED FROM VBDP-5 TO VBDP-1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NORMAL FEEDER TO NNI-X FROM VBDP-5 SWITCH 7 IS OPEN.
- o NNI-X FEEDER RED STATUS LIGHT IS OFF, LOCATED ON VBDP-5 CIRCUIT STATUS PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES AN AUTOMATIC BUS TRANSFER DEVICE HAS ACTUATED THAT SWAPS FROM THE NORMAL POWER SUPPLY TO THE ALTERNATE POWER SUPPLY FOR NNI-X 120V AC FIELD LOADS. ONCE NORMAL POWER IS REGAINED THE ABT WILL TRANSFER BACK TO NORMAL SUPPLY AFTER 45 SECONDS.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 0962

INDICATED CONDITION:

- o ICS 120V AC FIELD LOADS TRANSFERRED FROM VBDP-6 TO VBDP-7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS FEEDER RED STATUS LIGHT IS OFF, LOCATED ON VBDP-4 CIRCUIT STATUS PANEL.
- o NORMAL FEEDER TO ICS FROM VBDP-4 SWITCH 25 IS OPEN.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES AN AUTOMATIC BUS TRANSFER DEVICE HAS ACTUATED THAT SWAPS FROM THE NORMAL POWER SUPPLY TO THE ALTERNATE POWER SUPPLY FOR ICS 120V AC FIELD LOADS. ONCE NORMAL POWER IS REGAINED THE ABT WILL TRANSFER BACK TO NORMAL SUPPLY AFTER 45 SECONDS.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1110

INDICATED CONDITION:

- o ICS CABINET FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS CABINET COOLING FANS NOT RUNNING.
- o ICS CABINET FILTERS DIRTY.

OPERATOR ACTIONS FOR A VALID ALARM:

- o HAVE I&C SHOP CHANGE FILTERS.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING BOTH FRONT AND BACK DOORS ON THE ICS CABINETS TO PROVIDE COOLING WHILE FANS ARE NOT OPERABLE. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1111

INDICATED CONDITION:

- o POSITIVE 24V ICS POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o POSITIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE ICS POWER SUPPLY MONITOR IN ICS CABINET 2.
- o + 24 V ICS POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO ICS +24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT ICS POWER.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1113

INDICATED CONDITION:

- o NEGATIVE 24V ICS POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NEGATIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE ICS POWER SUPPLY MONITOR IN ICS CABINET 2.
- o - 24 V ICS POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO ICS
-24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT ICS POWER.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1147

INDICATED CONDITION:

- o POSITIVE 24V NNI-X POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o POSITIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE NNI-X POWER SUPPLY MONITOR IN NNI CABINET 3.
- o +24 V NNI-X POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o NOTIFY THE I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO NNI-X +24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT NNI BUS POWER.

REFERENCES: DRAWING NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1148

INDICATED CONDITION:

- o NEGATIVE 24V NNI-X POWER SUPPLY FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NEGATIVE WHITE "SUPPLY" INDICATOR LIGHT IS OFF, LOCATED ON THE NNI-X POWER SUPPLY MONITOR IN NNI-X CABINET 3.
- o - 24 V NNI-X POWER SUPPLY INDICATES NO AMPS OR VOLTAGE.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES ONE OF TWO REDUNDANT POWER SUPPLIES TO NNI-X -24V BUS HAS BEEN LOST. THIS CONDITION SHOULD NOT EFFECT NNI BUS POWER.

REFERENCES: DRAWING NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1149

INDICATED CONDITION:

- o NNI-X CABINET FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-X CABINET COOLING FANS NOT RUNNING.
- o NNI-X CABINET FILTERS DIRTY.

OPERATOR ACTIONS FOR A VALID ALARM:

- o HAVE I&C SHOP CHANGE FILTERS.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING BOTH FRONT AND BACK DOORS ON THE NNI CABINETS TO PROVIDE COOLING WHILE FANS ARE NOT OPERABLE. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1150

INDICATED CONDITION:

- o NNI-Y CABINET FAN FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NNI-Y CABINET COOLING FANS NOT RUNNING.
- o NNI-Y CABINET FILTERS DIRTY.

OPERATOR ACTIONS FOR A VALID ALARM:

- o HAVE I&C SHOP CHANGE FILTERS.

DISCUSSION:

CONSIDERATION SHOULD BE GIVEN TO OPENING BOTH FRONT AND BACK DOORS ON THE NNI CABINETS TO PROVIDE COOLING WHILE FANS ARE NOT OPERABLE. HOWEVER, WITH THE REDUCED SHIELDING OF THE OPEN DOOR, RADIO FREQUENCY INTERFERENCE CAN POTENTIALLY CAUSE UNDESIRABLE AND UNPREDICTABLE EFFECTS ON THE SYSTEM OPERATION.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-02	K-02-02
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ICS
NNI
TROUBLE

EVENT POINT 1744

INDICATED CONDITION:

- o NNI-Y 120V AC FIELD LOADS TRANSFERRED FROM VBDP-6 TO VBDP-7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NORMAL FEEDER TO NNI-Y FROM VBDP-6 SWITCH 10 IS OPEN.
- o NNI-Y FEEDER RED STATUS LIGHT IS OFF, LOCATED ON VBDP-6 CIRCUIT STATUS PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES AN AUTOMATIC BUS TRANSFER DEVICE HAS ACTUATED THAT SWAPS FROM THE NORMAL POWER SUPPLY TO THE ALTERNATE POWER SUPPLY FOR NNI-Y 120V AC FIELD LOADS.
ONCE NORMAL POWER IS REGAINED THE ABT WILL TRANSFER BACK TO NORMAL SUPPLY AFTER 45 SECONDS.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1107

INDICATED CONDITION:

- o ICS FUSE BLOWN, LOCATED IN ICS CABINET 1 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN ICS CABINET 1 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-504 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS ICS COMPONENTS.
OP-504 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1108

INDICATED CONDITION:

- o ICS FUSE BLOWN, LOCATED IN ICS CABINET 3 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN ICS CABINET 3 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-504 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS ICS COMPONENTS.
OP-504 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1109

INDICATED CONDITION:

- o ICS FUSE BLOWN, LOCATED IN ICS CABINET 4 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN ICS CABINET 4 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-504 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS ICS COMPONENTS.
OP-504 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1136

INDICATED CONDITION:

- o NNI-X FUSE IS BLOWN, LOCATED IN NNI CABINET 1 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE BACK OF NNI CABINET 1 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-X COMPONENTS.
OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1137

INDICATED CONDITION:

- o NNI-X FUSE IS BLOWN, LOCATED IN NNI CABINET 2 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE BACK OF NNI CABINET 2 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-X COMPONENTS. OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1138

INDICATED CONDITION:

- o NNI-X FUSE IS BLOWN, LOCATED IN NNI CABINET 4 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE BACK OF NNI CABINET 4 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-X COMPONENTS.
OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1139

INDICATED CONDITION:

- o NNI-X FUSE IS BLOWN, LOCATED IN NNI CABINET 1 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE FRONT OF NNI CABINET 1 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-X COMPONENTS. OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1140

INDICATED CONDITION:

- o NNI-Y FUSE IS BLOWN, LOCATED IN NNI CABINET 6 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE BACK OF NNI CABINET 6 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-Y COMPONENTS.
OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1141

INDICATED CONDITION:

- o NNI-Y FUSE IS BLOWN, LOCATED IN NNI CABINET 6 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE FRONT OF NNI CABINET 6 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-Y COMPONENTS.
OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-02-03	K-02-03
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ICS/NNI
FUSE
BLOWN

EVENT POINT 1142

INDICATED CONDITION:

- o NNI-Y FUSE IS BLOWN, LOCATED IN NNI CABINET 8 FUSE PANEL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FUSE PANEL LOCATED IN THE BACK OF NNI CABINET 8 AMBER FUSE BLOWN INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501 FOR FUSE INFORMATION.
- o CONTACT I&C SHOP.

DISCUSSION:

THIS ALARM INDICATES A FUSE IS BLOWN THAT FEEDS NNI-Y COMPONENTS.
OP-501 WILL HELP DETERMINE EQUIPMENT EFFECTED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: FUSE INDICATION RELAY

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-01	K-03-01
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ICS POWER
FAILURE

EVENT POINT 1115

INDICATED CONDITION:

- o ICS 24V DC BUS POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS POWER LIGHT IS OFF, LOCATED ON THE REDUNDANT INSTRUMENT PANEL.
- o ICS POWER SUPPLY MONITOR, LOCATED IN ICS CABINET 2, HAS NO INDICATING LIGHTS ON.
- o S-1 AND S-2 SWITCHES ARE TRIPPED OFF, LOCATED IN ICS CABINET 2.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TRIP BOTH MAIN FEED PUMPS.
- o REFER TO EOP-02.
- o REFER TO OP-504 FOR REENERGIZING NNI POWER SUPPLIES.

DISCUSSION:

POWER SUPPLY TO ICS DC BUSES IS, VBDP-4 BKR.23 AND VBDP-2 BKR.3.
A LOSS OF A POSITIVE OR NEGATIVE BUSS SHOULD TRIP BOTH S-1 AND S-2.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-01	K-03-01
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ICS POWER
FAILURE

EVENT POINT 1117

INDICATED CONDITION:

- 0 ICS 120V AC BUS POWER FAILURE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS POWER LIGHT IS OFF, LOCATED ON REDUNDANT INSTRUMENT PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o TRIP BOTH MAIN FEED PUMPS.
- o REFER TO EOP-02.

DISCUSSION:

POWER SUPPLY TO ICS AC BUS IS, VBDP-4 BKR 25 AND VBDP-2 BKR 4.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0084

INDICATED CONDITION:

- o RCS LOOP "A" Th INPUTS TO SASS MISMATCHED BY $>3^{\circ}\text{F}$.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o Th TEMPERATURE INDICATOR, RC-4A-T11.
- o Th COMPUTER POINT, R-212.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR Th LOOP "A" IS THE SELECTED TRANSMITTER ON RC-4A-MS.

RCS Th SELECTOR SWITCH, RC-4A-MS WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0088

INDICATED CONDITION:

- o RCS LOOP "A" Tc INPUTS TO SASS MISMATCHED BY >18°F.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "A" Tc INDICATOR, RC-5A-TI3.
- o Tc COMPUTER POINT, R-214.
- o Tc COMPUTER POINT, R-212.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR Tc LOOP "A" IS THE TRANSMITTER SELECTED ON RC-5A-MS1.

THE COMPUTER POINTS FOR LOOP "A" Tc ARE HARD WIRED AND ARE VALID REGARDLESS OF THE POSITION OF THE SELECTOR SWITCH, RC-5A-MS1. THE CONTROL BOARD INDICATOR, RC-5A-TI3 WILL INDICATE WHATEVER IS SELECTED ON RC-5A-MS1.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0195

INDICATED CONDITION:

- o STEAM GENERATOR "A" STARTUP LEVEL INPUTS TO SASS MISMATCHED BY >7.5".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "A" S/U LEVEL INDICATOR, SP-1A-L12.
- o OTSG "A" S/U LEVEL COMPUTER POINT, S-287.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR S/U LEVEL OTSG "A" IS THE TRANSMITTER SELECTED ON SP-1A-MS2.

OTSG "A" S/U LEVEL SELECTOR SWITCH, SP-1A-MS2 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0258

INDICATED CONDITION:

- o STEAM GENERATOR "A" OPERATE LEVEL INPUTS TO SASS MISMATCHED BY >8.8".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "A" OPERATE LEVEL INDICATOR, SP-1A-LIR1.
- o OTSG "A" OPERATE LEVEL COMPUTER POINT, S-284.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR OTSG "A" OPERATE LEVEL IS THE TRANSMITTER SELECTED ON SP-1A-MS1.

OTSG "A" OPERATE LEVEL SELECTOR SWITCH, SP-1A-MS1 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0260

INDICATED CONDITION:

- o LOOP "A" FEEDWATER TEMPERATURE INPUTS TO SASS MISMATCHED BY >15°F.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "A" FEEDWATER TEMPERATURE INDICATOR, SP-5A-TI.
- o LOOP "A" FEEDWATER TEMPERATURE COMPUTER POINT, S-290.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "A" FEEDWATER TEMPERATURE IS THE TRANSMITTER SELECTED ON SP-5A-SEL.

LOOP "A" FEEDWATER TEMPERATURE SELECTOR SWITCH, SP-5A-SEL WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0262

INDICATED CONDITION:

- o LOOP "A" FEEDWATER FLOW INPUTS TO SASS MISMATCHED BY >.18 MILLION LBM/HR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "A" FEEDWATER FLOW INDICATOR, SP-8A-FIR1.
- o LOOP "A" FEEDWATER FLOW COMPUTER POINT, S-301.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "A" FEEDWATER FLOW IS THE SELECTED TRANSMITTER ON SP-8A-MS.

LOOP "A" FEEDWATER FLOW SELECTOR SWITCH, SP-8A WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0761

INDICATED CONDITION:

- o Tave INPUTS TO SASS MISMATCHED BY $>3^{\circ}\text{F}$.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o Tave DIGITAL INDICATOR RC-12-TaI.
- o Tave INDICATOR RC-7B-TaI.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE SASS SIGNAL SOURCE FOR Tave IS THE SELECTED LOOP ON RC-12-TAS.

THE Tave AUTO/MANUAL TRANSFER SWITCH, RC-12-TAS SELECTS THE INPUT TO THE DIGITAL CONTROL BOARD INDICATOR, RC-12-TAI. THE NON-SELECTED INPUT GOES TO THE CONTROL BOARD EDGEWISE INDICATOR, SP-7B-TAI.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0762

INDICATED CONDITION:

- o LOOP "A" FEEDWATER Δ P INPUTS TO SASS MISMATCHED BY >3 PSID.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "A" FEEDWATER Δ P COMPUTER POINT A-302.
- o LOOP "A" FEEDWATER Δ P COMPUTER POINT A-303.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "A" FEEDWATER Δ P IS THE SELECTED TRANSMITTER IN NNI CABINET 3.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0771

INDICATED CONDITION:

- o TURBINE HEADER PRESSURE "A" INPUTS TO SASS MISMATCHED BY >18 PSIG.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TURBINE HEADER PRESSURE "A" INDICATOR SP-10A-PIR1
- o TURBINE HEADER PRESSURE "A" COMPUTER POINT T-228.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR "A" TURBINE HEADER PRESSURE IS THE TRANSMITTER SELECTED IN NNI CABINET 3.

TURBINE HEADER PRESSURE SELECTOR LOCATED IN NNI CABINET 3 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0783

INDICATED CONDITION:

- o ΔT_c INPUTS TO SASS MISMATCHED BY $>0.6^\circ\text{F}$.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ΔT_c INDICATOR RC-8-DT1.
- o DIFFERENCE BETWEEN RC-5A-T12 AND RC-5B-T12.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR ΔT_c IS NNI-X OR NNI-Y SELECTED IN NNI CABINET 5.

THE ΔT_c CONTROL BOARD INDICATOR, RC-8-DT1 INDICATES THE INPUT SELECTED IN THE NNI CABINET.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0784

<p>INDICATED CONDITION:</p> <ul style="list-style-type: none"> o RCS NARROW RANGE PRESSURE INPUTS TO SASS MISMATCHED BY >24 PSIG.
<p>REDUNDANT INDICATION WHICH WILL VERIFY ALARM:</p> <ul style="list-style-type: none"> o RCS PRESSURE RECORDER, RC-3A-PIR2. o RCS PRESSURE RECORDER, RC-3B PIR2.
<p>OPERATOR ACTIONS FOR A VALID ALARM:</p> <ul style="list-style-type: none"> o REFER TO OP-501
<p>DISCUSSION:</p> <p>THE NORMAL SASS SIGNAL SOURCE FOR RCS PRESSURE IS, RPS-A OR RPS-B SELECTED IN NNI CABINET 3.</p>
<p>REFERENCES: NNI DRAWINGS</p>
<p>SENSING ELEMENT: VARIOUS NNI CONTACTS</p>

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0785

INDICATED CONDITION:

- o PRESSURIZER LEVEL INPUTS TO SASS MISMATCHED BY >9.6".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PRESSURIZER LEVEL INDICATION, RC-1-LI3.
- o PRESSURIZER LEVEL INDICATION, RC-1-LI4.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR PRESSURIZER LEVEL IS THE TRANSMITTER
SELECTED ON RC-1-MS.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0786

INDICATED CONDITION:

- o RCS LOOP "B" Th INPUTS TO SASS MISMATCHED BY >3°F.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o Th TEMPERATURE INDICATOR, RC-4B-T11
- o Th COMPUTER POINT, R-213

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR Th LOOP "B" IS THE TRANSMITTER SELECTED ON RC-4B-MS.

RCS Th SELECTOR SWITCH, RC-4B-MS WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0788

INDICATED CONDITION:

- o RCS LOOP "B" Tc INPUTS TO SASS MISMATCHED BY >18°F.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o Tc LOOP "B" INDICATOR, RC-5B-TI3.
- o Tc COMPUTER POINT, R-216.
- o Tc COMPUTER POINT, R-217.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR Tc LOOP "B" IS THE TRANSMITTER SELECTED ON RC-5B-MS1.

THE COMPUTER POINTS FOR LOOP "B" Tc ARE HARD WIRED AND ARE VALID REGARDLESS OF THE POSITION OF THE SELECTOR SWITCH, RC-5B-MS1. THE CONTROL BOARD INDICATOR, RC-5B-TI3 WILL INDICATE WHATEVER IS SELECTED ON RC-5B-MS1.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0793

INDICATED CONDITION:

- o STEAM GENERATOR "B" STARTUP LEVEL INPUTS TO SASS MISMATCHED BY >7.5".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "B" S/U LEVEL INDICATOR, SP-1B-LI2.
- o OTSG "B" S/U LEVEL COMPUTER POINT, S-293.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR S/U LEVEL OTSG "B" IS THE TRANSMITTER SELECTED ON SP-1B-MS2.

OTSG "B" S/U LEVEL SELECTOR SWITCH, SP-1B-MS2 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0796

INDICATED CONDITION:

- o STEAM GENERATOR "B" OPERATE LEVEL INPUTS TO SASS MISMATCHED BY >8.8".

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "B" OPERATE LEVEL INDICATOR, SP-1B-LIR1.
- o OTSG "B" OPERATE LEVEL COMPUTER POINT, S-291.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR OTSG "B" OPERATE LEVEL IS THE TRANSMITTER SELECTED ON SP-1B-MS1.

OTSG "B" OPERATE LEVEL SELECTOR SWITCH, SP-1B-MS1 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0802

INDICATED CONDITION:

- o LOOP "B" FEEDWATER TEMPERATURE INPUTS TO SASS MISMATCHED BY >15°F.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "B" FEEDWATER TEMPERATURE INDICATOR, SP-5B-TI.
- o LOOP "B" FEEDWATER TEMPERATURE COMPUTER POINT, S-302.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "B" FEEDWATER TEMPERATURE IS THE TRANSMITTER SELECTED ON SP-5B-SEL.

LOOP "B" FEEDWATER TEMPERATURE SELECTOR SWITCH, SP-5B-SEL WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0805

INDICATED CONDITION:

- o LOOP "B" FEEDWATER FLOW INPUTS TO SASS MISMATCHED BY >.18 MILLION LBM/HR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "B" FEEDWATER FLOW INDICATOR, SP-8B-FIR1.
- o LOOP "B" FEEDWATER FLOW COMPUTER POINT, S-302.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "B" FEEDWATER FLOW IS THE TRANSMITTER SELECTED ON SP-8B.

LOOP "B" FEEDWATER FLOW SELECTOR SWITCH, SP-8B WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0806

INDICATED CONDITION:

- o LOOP "B" FEEDWATER Δ P INPUTS TO SASS MISMATCHED BY >3 PSID.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o LOOP "B" FEEDWATER Δ P COMPUTER POINT A-302.
- o LOOP "B" FEEDWATER Δ P COMPUTER POINT A-303.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "B" FEEDWATER Δ P IS THE TRANSMITTER SELECTED IN NNI CABINET 5.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0807

INDICATED CONDITION:

- o TURBINE HEADER PRESSURE "B" INPUTS TO SASS MISMATCHED BY >18 PSIG.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TURBINE HEADER PRESSURE "B" INDICATOR SP-10B-PIR1.
- o TURBINE HEADER PRESSURE "B" COMPUTER POINT T-232.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR LOOP "B" TURBINE HEADER PRESSURE IS THE TRANSMITTER SELECTED IN NNI CABINET 3.

TURBINE HEADER PRESSURE SELECTOR LOCATED IN NNI CABINET 3 WILL SELECT THE INPUT TO THE CONTROL BOARD INDICATOR. THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0808

INDICATED CONDITION:

- o NEUTRON POWER INPUTS TO SASS MISMATCHED BY >3.8%.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o THE AVERAGE OF NI-5 AND NI-6 INDICATED POWER.
- o THE AVERAGE OF NI-7 AND NI-8 INDICATED POWER.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR NEUTRON POWER IS NI-5/NI-6 OR NI-7/NI-8 SELECTED IN ICS CABINET 4.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0845

INDICATED CONDITION:

- o GENERATED MEGAWATTS INPUT TO SASS MISMATCHED BY >30 MEGAWATTS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o GENERATED MEGAWATTS COMPUTER POINT, E-210.
- o GENERATED MEGAWATTS COMPUTER POINT, E-211.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR GENERATED MEGAWATTS IS THE TRANSMITTER SELECTED IN ICS CABINET 4.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0846

INDICATED CONDITION:

- o TOTAL CONDENSATE FLOW INPUT TO SASS MISMATCHED BY >0.3 MILLION LBM/HR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o TOTAL CONDENSATE FLOW RECORDER CD-15-FIR.
- o TOTAL CONDENSATE FLOW COMPUTER POINT, A-304.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR TOTAL CONDENSATE FLOW IS THE TRANSMITTER SELECTED IN NNI CABINET 7.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-02	K-03-02
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SASS
MISMATCH

EVENT POINT 0847

INDICATED CONDITION:

- o DEAERATOR TANK LEVEL INPUT TO SASS MISMATCHED BY >0.42 FEET.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o DEAERATOR TANK LEVEL RECORDER CD-61-LIR.
- o DEAERATOR TANK LEVEL COMPUTER POINT, S-240.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO OP-501

DISCUSSION:

THE NORMAL SASS SIGNAL SOURCE FOR DEAERATOR TANK LEVEL IS THE TRANSMITTER SELECTED IN NNI CABINET 7.

DEAERATOR LEVEL INPUT SELECTOR LOCATED IN NNI CABINET 7 WILL SELECT THE INPUT TO THE CONTROL BOARD RECORDER, CD-61-LIR, THE NON-SELECTED INPUT GOES TO THE COMPUTER POINT.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-03-03	K-03-03
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SASS
TRANSFER

EVENT POINT 0776

INDICATED CONDITION:

- o SASS HAS AUTO SELECTED EITHER "A" OR "B" INPUT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED SASS TRIPPED INDICATION ON FAILED SASS MODULE.
- o SASS MISMATCH ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE PLANT STABLE.
- o REFER TO OP-501.

DISCUSSION:

THIS ALARM DOES NOT NECESSARILY INDICATE THAT THE SASS SYSTEM HAS TRANSFERRED INPUTS TO A CONTROLLING MODULE. IT ONLY INDICATES THAT ONE INPUT THAT FEEDS THAT SASS MODULE HAS FAILED.

REFERENCES: NNI DRAWINGS

SENSING ELEMENT: VARIOUS SASS NNI CONTACTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-04-01	K-04-01
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LOSS OF FW PP
RUNBACK

EVENT POINT 1122

INDICATED CONDITION:

- o UNIT LOAD DEMAND >55% AND EITHER: <2 MAIN FEED PUMPS OPERATING
OR
<2 MAIN FEED BOOSTER PUMPS OPERATING

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PLANT RUNS BACK TO 55% DEMAND AT 50% PER MINUTE.
- o MAIN FEED PUMP OR MAIN FEED BOOSTER PUMP TRIP INDICATIONS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.
- o REFER TO OP-605 FOR FEED PUMP LIMITATIONS AND RECOVERY.

DISCUSSION:

MAIN FEED PUMP TRIPPED IS SENSED BY <55 PSIG CONTROL OIL PRESSURE.

REFERENCES: ICS DIGITAL AND ANALOG DRAWINGS

SENSING ELEMENT: ICS MODULE 2-9-9

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-04-02	K-04-02
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ASYMMETRIC ROD
RUNBACK

EVENT POINT 1123

INDICATED CONDITION:

- o ASYMMETRIC CONTROL ROD CONDITION EXISTS ULD DEMAND IS >60%.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PLANT IS RUNNING BACK TO 60% DEMAND AT A RATE OF 30% PER MINUTE.
- o ASYMMETRIC FAULT LIGHT IS ON LOCATED ON THE DIAMOND CONTROL PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.
- o REFER TO OP-502 FOR CRD RECOVERY.

DISCUSSION:

AN ASYMMETRIC ROD RUNBACK WILL OCCUR WHEN THE DIAMOND IS IN AUTOMATIC, THE ULD DEMAND IS >60% AND ANY ONE OF THE FOLLOWING OCCUR:

ANY SAFETY ROD GROUP AT IN-LIMIT.
SAFETY ROD GROUP NOT AT OUT-LIMIT AND GROUP 5 IN-LIMIT.
CONTROL ROD >9" FAULT AND ANY SAFETY GROUP NOT AT THE OUT-LIMIT.
CONTROL ROD >9" FAULT AND GROUP 5 IN-LIMIT.
CONTROL ROD >9" FAULT AND GROUP 6 IN-LIMIT AND GROUP 5 >80% WITHDRAWN.
CONTROL ROD >9" FAULT AND GROUP 7 IN-LIMIT AND GROUP 6 >80% WITHDRAWN.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS:

REFERENCES: ICS DIGITAL AND ANALOG DRAWINGS

SENSING ELEMENT: ICS MODULE 2-9-8

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-04-03	K-04-03
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REACTOR
LIMITED BY
FEEDWATER

EVENT POINT 1130

INDICATED CONDITION:

- o FEEDWATER DEMAND EXCEEDS FEEDWATER FLOW BY MORE THAN 5%.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o UNIT MASTER IN TRACK ALARM.
- o REACTOR DEMAND IS DECREASING.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE AND TEMPERATURE USING PRESSURIZER HEATERS, SPRAY VALVE, PORV, AND BALANCE FEED FLOW VS. REACTOR POWER.
- o INVESTIGATE AND CORRECT THE CAUSE OF FEEDWATER MISMATCH.

DISCUSSION:

REACTOR LIMITED BY FEEDWATER CROSSLIMIT WILL DRIVE REACTOR DOWN TO MATCH INDICATED FEEDWATER FLOW.

REFER TO OP-103A FOR FEEDWATER FLOW VS. REACTOR POWER CURVE.

REFERENCES: DRAWING ICS DIGITAL AND ANALOG DRAWINGS

SENSING ELEMENT: ICS MODULE 3-6-9

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-04-04	K-04-04
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UNIT
LOAD LIMIT
HIGH

EVENT POINT 1120

INDICATED CONDITION:

- o UNIT LOAD DEMAND EXCEEDS THE OPERATOR SET HIGH LOAD LIMIT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o UNIT MASTER IN TRACK ALARM.
- o ULD INDICATION IS GREATER THAN DIALED HIGH LOAD LIMIT SETPOINT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REDUCE UNIT LOAD DEMAND OR INCREASE DIALED HIGH LOAD LIMIT SETPOINT.
- o REFER TO OP-504 FOR NORMAL HIGH LOAD LIMIT SETPOINTS.

DISCUSSION:

IF THE HIGH LOAD LIMIT SETPOINT IS REDUCED BELOW THE CURRENT ULD SETTING, THE ULD WILL RUN DOWN TO THE HIGH LOAD SETPOINT AT OPERATOR DIALED IN RATE.

REFERENCES: ICS ANALOG AND DIGITAL DRAWINGS

SENSING ELEMENT: ICS MODULE 3-5-7

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-04-05	K-04-05
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UNIT
LOAD LIMIT
LOW

EVENT POINT 1121

INDICATED CONDITION:

- 0 UNIT LOAD DEMAND IS BELOW THE OPERATOR SET LOW LOAD LIMIT.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o UNIT MASTER IN TRACK ALARM.
- o ULD INDICATION LESS THAN DIALED LOW LOAD LIMIT SETPOINT.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INCREASE UNIT LOAD DEMAND OR REDUCE DIALED LOW LOAD LIMIT SETPOINT.
- o REFER TO OP-504 FOR NORMAL LOW LOAD LIMIT SETPOINTS.

DISCUSSION:

IF THE LOW LOAD LIMIT SETPOINT IS RAISED ABOVE THE CURRENT ULD SETTING, THE ULD WILL RUN UP TO THE LOW LOAD SETPOINT AT THE OPERATOR DIALED IN RATE.

REFERENCES: ICS ANALOG AND DIGITAL DRAWINGS

SENSING ELEMENT: ICS MODULE 3-5-8

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-05-01	K-05-01
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LOSS OF RC PP
RUNBACK

EVENT POINT 1124

INDICATED CONDITION:

- o UNIT LOAD DEMAND >75% DEMAND AND <4 RC PUMPS OPERATING.
- o UNIT LOAD DEMAND >100% DEMAND AND 4 RC PUMPS OPERATING.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o PLANT IS RUNNING BACK TO 75% DEMAND AT A RATE OF 30% PER MINUTE.
- o RC PUMP TRIPS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REFER TO AP-545.

DISCUSSION:

ICS USES RCP BREAKER POSITION TO DETERMINE REACTOR COOLANT PUMP STATUS.

REFERENCES: ICS DIGITAL AND ANALOG DRAWINGS

SENSING ELEMENT: ICS MODULE 2-9-11

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-05-03	K-05-03
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FW
LIMITED BY
REACTOR

EVENT POINT 1135

INDICATED CONDITION:

- o NI POWER AND REACTOR DEMAND ARE MISMATCHED BY MORE THAN 5%.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o NEUTRON ERROR >5% (POSITIVE OR NEGATIVE) IC-25-NE1.
- o UNIT MASTER IN TRACK ALARM.

OPERATOR ACTIONS FOR A VALID ALARM:

- o STABILIZE RCS PRESSURE AND TEMPERATURE USING PZR HEATERS, SPRAY, PORV, AND BALANCE FEED FLOW WITH REACTOR POWER.
- o INVESTIGATE AND CORRECT THE CAUSE OF REACTOR DEMAND MISMATCH.

DISCUSSION:

THIS ALARM OCCURS WHENEVER REACTOR DEMAND AND NI POWER VARY BY MORE THAN 5%.

IF ONE OR BOTH FW LOOP MASTERS ARE IN AUTO THE FEEDWATER LIMITED BY REACTOR CROSS-LIMIT WILL INCREASE FEEDWATER DEMAND WHEN NEUTRON ERROR IS > +5%, AND DECREASE FEEDWATER DEMAND WHEN NEUTRON ERROR IS < -5%. THIS MATCHES FEEDWATER TO WITHIN 5% OF NI POWER.

PLACING REACTOR AND DIAMOND IN HAND WILL REMOVE ANY CROSS-LIMIT SIGNAL TO FEEDWATER.

NEUTRON ERROR IS DEFINED AS HIGH SELECTED NI POWER MINUS RX DEMAND.

REFERENCES: ICS DIGITAL AND ANALOG DRAWINGS

SENSING ELEMENT: ICS MODULE 3-7-5

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-05-04	K-05-04
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REACTOR
DEMAND LIMITED
HIGH

EVENT POINT 1112

INDICATED CONDITION:

- o REACTOR DEMAND >102%.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 0 REACTOR BAILEY DEMAND METER INDICATION.
0 NUCLEAR INSTRUMENTS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REDUCE ULD DEMAND TO $\leq 100\%$.
- o ENSURE REACTOR POWER IS LESS THAN 100% RTP PER STS.

DISCUSSION:

THIS ALARM INDICATES THE REACTOR (SUBSECTION) DEMAND IS LIMITED TO <102%.
IF ULD INCREASES ANY FURTHER A REACTOR TO FEEDWATER MISMATCH WILL DEVELOP.
THIS CONDITION CAN BE CAUSED BY A LOSS OF OVERALL PLANT EFFICIENCY.

REFERENCES: ICS ANALOG AND DIGITAL DRAWINGS

SENSING ELEMENT: ICS LIMITER MODULE IC-3811-RC; SIGNAL MONITOR IC-3611-RC

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-06-01	K-06-01
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RCS
 ΔT_c
HIGH

EVENT POINT 1328

INDICATED CONDITION:

- o SELECTED LOOP "B" T_c EXCEEDS SELECTED LOOP "A" T_c BY MORE THAN 5°F.
AS SENSED BY RC-8-DTS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ΔT_c INDICATOR.
- o INDIVIDUAL T_c INDICATION.
- o FEEDWATER FLOW MISMATCH.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE ΔT_c SETPOINT CORRECT.
- o MANUALLY ADJUST FEEDWATER FLOWS TO CORRECT ΔT_c MISMATCH.
- o ENSURE QPT IS WITHIN LIMITS OF STS.

DISCUSSION:

THIS ALARM INDICATES "B" LOOP T_c IS HOTTER THAN "A" LOOP T_c .
FEEDWATER MUST BE INCREASED TO THE "B" LOOP AND DECREASED TO THE "A" LOOP
TO RESTORE ΔT_c .

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-8-DTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-06-01	K-06-01
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RCS
 ΔT_c
HIGH

EVENT POINT 1370

INDICATED CONDITION:

- o SELECTED LOOP "A" T_c EXCEEDS SELECTED LOOP "B" T_c BY MORE THAN 5°F.
AS SENSED BY RC-8-DTS

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ΔT_c INDICATOR.
- o INDIVIDUAL T_c INDICATION.
- o FEEDWATER FLOW MISMATCH.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE ΔT_c SETPOINT CORRECT.
- o MANUALLY ADJUST FEEDWATER FLOWS TO CORRECT ΔT_c MISMATCH.

DISCUSSION:

THIS ALARM INDICATES "A" LOOP T_c IS HOTTER THAN "B" LOOP T_c .
FEEDWATER MUST BE INCREASED TO THE "A" LOOP AND DECREASED TO THE "B" LOOP
TO RESTORE ΔT_c .

REFERENCES: DRAWING 208-047 SHEET RC-027

SENSING ELEMENT: RC-8-DTS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-06-02	K-06-02
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UNIT MASTER
IN TRACK

EVENT POINT 1125

INDICATED CONDITION:

- o THE FOLLOWING CONDITIONS WILL PLACE ICS IN "TRACK":

BOTH FEEDWATER LOOP DEMANDS IN HAND
TURBINE NOT IN ICS AUTO
BOTH OUTPUT BREAKERS OPEN
UNIT UNDER CROSS-LIMIT
PLANT RUNBACK
REACTOR TRIP CONFIRM

STM GEN/RX MASTER IN HAND
REACTOR DEMAND STATION IN HAND
DIAMOND STATION IN MANUAL
UNIT LOAD < LOW LOAD LIMIT
UNIT LOAD > HIGH LOAD LIMIT

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o RED AND WHITE LIGHTS ARE ON, LOCATED ON THE ULD STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE STABLE PLANT CONDITIONS.

DISCUSSION:

WHILE IN TRACK ICS USES GENERATED MEGAWATTS AS FRONT END DEMAND, HOWEVER WHEN TRACKING IS DUE TO A LOW OR HIGH LOAD LIMIT, OR WHEN A PLANT RUNBACK IS IN PROGRESS, ICS TRACKS THE IMPOSED LOAD LIMIT.

REFERENCES: ICS ANALOG AND DIGITAL DRAWINGS

SENSING ELEMENT: ICS MODULE 2-8-13

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-06-06	K-06-06
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[illegible]

ATMOSPHERIC
DUMP VALVE
NOT FULL CLSD

EVENT POINT 0949

INDICATED CONDITION:

- o ATMOSPHERIC DUMP VALVE, MSV-25, NOT FULL CLOSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "A" STEAM PRESSURE >1025 PSIG.
- o MSV-25 HAND/AUTO STATION DEMAND INDICATES >0.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REDUCE OTSG "A" PRESSURE.
- o VERIFY PROPER OPERATION OF TURBINE BYPASS VALVES.
- o IF OTSG PRESSURE NORMAL AND MSV-25 IS OPEN THEN TAKE MANUAL CONTROL OF MSV-25 AND CLOSE VALVE.

DISCUSSION:

MSV-25 RECEIVES IT'S PRESSURE INPUT FROM EFIC OTSG PRESSURE INSTRUMENTS.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: 33-C, MSV-25 CLOSED CONTACT.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-06-06	K-06-06
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[illegible]

ATMOSPHERIC
DUMP VALVE
NOT FULL CLSD

EVENT POINT 0950

INDICATED CONDITION:

- o ATMOSPHERIC DUMP VALVE MSV-26, NOT FULL CLOSED.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o OTSG "B" STEAM PRESSURE >1025 PSIG.
- o MSV-26 HAND/AUTO STATION DEMAND INDICATES >0.

OPERATOR ACTIONS FOR A VALID ALARM:

- o REDUCE OTSG "B" PRESSURE.
- o VERIFY PROPER OPERATION OF TURBINE BYPASS VALVES.
- o IF OTSG PRESSURE NORMAL AND MSV-26 IS OPEN THEN TAKE MANUAL CONTROL OF MSV-26 AND CLOSE VALVE.

DISCUSSION:

MSV-26 RECEIVES IT'S PRESSURE INPUT FROM EFIC OTSG PRESSURE INSTRUMENTS.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: 33-C, MSV-26 CLOSED CONTACT.

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-01	K-07-01
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[illegible]

STEAM GEN A
LEVEL
LOW-LOW

EVENT POINT 0912

INDICATED CONDITION:

- o STEAM GENERATOR "A" LEVEL <12" AS SENSED BY SP-1A-LS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "A" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER FEEDWATER LINEUP.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND INCREASE FEED RATE TO STEAM GENERATOR "A".
- o IF EMERGENCY FEEDWATER ACTUATES REFER TO EOP.

DISCUSSION:

IF ICS CONTROLS DOWNSTREAM OF THE LEVEL LIMITER ARE IN AUTO THE OTSG LEVELS SHOULD BE MAINTAINED AT THE LOW LIMIT OF APPROXIMATELY 30".

EMERGENCY FEED WATER WILL ACTUATE AT APPROXIMATELY 6" ON EFIC LOW RANGE LEVEL INSTRUMENTS.

SP-1A-LS2 INPUT IS FROM "A" STEAM GENERATOR STARTUP LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1A-LS2

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-02	K-07-02
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STEAM GEN A
LEVEL
HIGH/LOW

EVENT POINT 0943

INDICATED CONDITION:

- o STEAM GENERATOR "A" LEVEL >93.5% AS SENSED BY SP-1A-LS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "A" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RESTORE STEAM GENERATOR LEVEL.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND REDUCE FEED RATE TO STEAM GENERATOR "A".
- o IF STEAM GENERATOR LEVEL CONTINUES TO INCREASE CONSIDERATION SHOULD BE GIVEN TO ISOLATE MAIN FEEDWATER TO STEAM GENERATOR "A" USING EFIC MAIN FEEDWATER ISOLATION PUSHBUTTONS.

DISCUSSION:

IF ICS CONTROLS DOWNSTREAM OF THE LEVEL LIMITER ARE IN AUTO THE OTSG LEVELS SHOULD BE MAINTAINED AT THE HIGH LIMIT OF APPROXIMATELY 95%.

VERY HIGH LEVELS IN A STEAM GENERATOR MAY CAUSE CARRYOVER AND DAMAGE THE MAIN TURBINE.

SP-1A-LS1 INPUT IS FROM "A" STEAM GENERATOR OPERATE LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1A-LS1

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-02	K-07-02
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STEAM GEN A
LEVEL
HIGH/LOW

EVENT POINT 0944

INDICATED CONDITION:

- o STEAM GENERATOR "A" LEVEL <24" AS SENSED BY SP-1A-LS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "A" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RESTORE STEAM GENERATOR LEVEL.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND INCREASE FEED RATE TO STEAM GENERATOR "A".
- o IF EMERGENCY FEEDWATER ACTUATES THEN REFER TO EOP.

DISCUSSION:

IF IN AUTO ICS SHOULD LIMIT OTSG LEVEL TO 30" ON THE START UP RANGE, THEREFORE A PROBLEM EXISTS WITH ICS LEVEL CONTROL OR OPERATOR ERROR.

SP-1A-LS2 INPUT IS FROM "A" STEAM GENERATOR STARTUP LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1A-LS2

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-03	K-07-03
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STEAM GEN A
BTU
CONDITION

EVENT POINT 1126

INDICATED CONDITION:

- o STEAM GENERATOR "A" FEEDWATER DEMAND IS >BTU LIMIT AS CALCULATED BY ICS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o THE FOLLOWING PARAMETERS INPUT TO A BTU CONDITION:

OTSG OUTLET PRESSURE HIGH
RCS Th LOW

FEEDWATER TEMPERATURE LOW
RCS FLOW LOW

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE AND CORRECT CAUSE OF ALARM CONDITION

DISCUSSION:

THE BTU LIMIT ALARM INDICATES CONDITIONS WHERE EITHER, THE ENERGY INPUT TO THE OTSG IS NOT SUFFICIENT, OR FEEDWATER/OTSG TEMPERATURE/PRESSURE ARE INADEQUATE TO MAINTAIN REQUIRED SUPERHEAT TO OPERATE THE MAIN TURBINE.

WITHOUT SUFFICIENT SUPERHEAT THERE IS A RISK OF CARRYOVER DAMAGE TO THE TURBINE BLADING.

REFERENCES: ICS/NNI DRAWINGS

SENSING ELEMENT: ICS MODULE 3-7-3

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-04	K-07-04
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STEAM GEN A
LOW LEVEL
LIMITED

EVENT POINT 1128

INDICATED CONDITION:

- o LOOP "A" FEEDWATER DEMAND IS ON LOW LEVEL LIMIT CONTROL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS MAINTAINS STEAM GENERATOR "A" AT APPROXIMATELY 30" ON THE START UP LEVEL INDICATOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE ICS MAINTAINS OTSG LEVEL ≥ 30 " ON THE START UP LEVEL INDICATOR.
- o IF LEVEL IS NOT BEING MAINTAINED BY ICS THEN MANUALLY CONTROL OTSG LEVEL USING FEEDWATER CONTROL VALVES AND MAIN FEED PUMP SPEED FOR 80 PSID.

DISCUSSION:

THIS ALARM INDICATES THAT ICS IS TRYING TO CONTROL OTSG LEVEL AT THE LOW LEVEL LIMIT SETPOINT.

REFERENCES: ICS AND NNI DRAWINGS

SENSING ELEMENT: ICS MODULE 3-7-5

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-05	K-07-05
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[illegible]

VERIFY
FWV-30
ON AUTO

EVENT POINT 1227

INDICATED CONDITION:

- o ICS FEEDWATER LOOP "A" DEMAND >50% AND FWV-30 <15% FULL OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FWV-30 AUTO/MANUAL TOGGLE SWITCH POSITION.
- o FWV-30 POSITION INDICATION.
- o LOOP "A" FEEDWATER MASTER DEMAND INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FWV-30 AUTO/MANUAL TOGGLE SWITCH IN AUTO.
- o ENSURE FWV-30 IS OPENING.

DISCUSSION:

THIS IS AN EXPECTED ALARM DURING A NORMAL POWER INCREASE.

AT 50% FEEDWATER DEMAND ICS PULSES THE MAIN BLOCK VALVES TO 15% OPEN THEN RUNS THE VALVE OPEN THE REMAINING 85%.

WHEN THE MAIN BLOCK VALVE LEAVES IT'S CLOSED SEAT FEED PUMP CONTROL TRANSFERS FROM ΔP CONTROL TO FLOW CONTROL.

REFERENCES: ICS AND NNI DRAWINGS

SENSING ELEMENT: FWV-30 POSITION SWITCHES

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-06	K-07-06
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[illegible]

TURB BYP VLV
AIR
FAILURE

EVENT POINT 0951

INDICATED CONDITION:

- 0 TURBINE BYPASS VALVE, MSV-9 SUPPLY AIR PRESSURE <60 PSIG AS SENSED BY MSV-9-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INSTRUMENT AIR LOW PRESSURE INDICATION.
- o TURBINE BYPASS VALVE DOES NOT CONTROL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW AIR PRESSURE.
- o CONSIDERATION SHOULD BE GIVEN TO OPERATING MSV-9 LOCALLY USING INSTRUCTIONS GIVEN IN OP-608.

DISCUSSION:

TURBINE BYPASS VALVES ARE AIR TO OPEN AND AIR TO CLOSE SO AIR FAILURE RESPONSE IS UNPREDICTABLE. HOWEVER THE MOST COMMON FAILURE MODE IS CLOSED.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: MSV-9-PS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-06	K-07-06
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[illegible]

TURB BYP VLV
AIR
FAILURE

EVENT POINT 0952

INDICATED CONDITION:

- o TURBINE BYPASS VALVE, MSV-10 SUPPLY AIR PRESSURE <60 PSIG AS SENSED BY MSV-10-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INSTRUMENT AIR LOW PRESSURE INDICATION.
- o TURBINE BYPASS VALVE DOES NOT CONTROL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW AIR PRESSURE.
- o CONSIDERATION SHOULD BE GIVEN TO OPERATING MSV-10 LOCALLY USING INSTRUCTIONS GIVEN IN OP-608.

DISCUSSION:

TURBINE BYPASS VALVES ARE AIR TO OPEN AND AIR TO CLOSE SO AIR FAILURE RESPONSE IS UNPREDICTABLE. HOWEVER THE MOST COMMON FAILURE MODE IS CLOSED.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: MSV-10-PS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-06	K-07-06
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[illegible]

TURB BYP VLV
AIR
FAILURE

EVENT POINT 0953

INDICATED CONDITION:

- 0 TURBINE BYPASS VALVE, MSV-11 SUPPLY AIR PRESSURE <60 PSIG AS SENSED BY MSV-11-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INSTRUMENT AIR LOW PRESSURE INDICATION.
- o TURBINE BYPASS VALVE DOES NOT CONTROL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW AIR PRESSURE.
- o CONSIDERATION SHOULD BE GIVEN TO OPERATING MSV-11 LOCALLY USING INSTRUCTIONS GIVEN IN OP-608.

DISCUSSION:

TURBINE BYPASS VALVES ARE AIR TO OPEN AND AIR TO CLOSE SO AIR FAILURE RESPONSE IS UNPREDICTABLE. HOWEVER THE MOST COMMON FAILURE MODE IS CLOSED.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: MSV-11-PS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-07-06	K-07-06
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[illegible]

TURB BYP VLV
AIR
FAILURE

EVENT POINT 0954

INDICATED CONDITION:

- o TURBINE BYPASS VALVE, MSV-14 SUPPLY AIR PRESSURE 751G AS SENSED BY MSV-14-PS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o INSTRUMENT AIR LOW PRESSURE INDICATION.
- o TURBINE BYPASS VALVE DOES NOT CONTROL.

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE CAUSE OF LOW AIR PRESSURE.
- o CONSIDERATION SHOULD BE GIVEN TO OPERATING MSV-14 LOCALLY USING INSTRUCTIONS GIVEN IN OP-608.

DISCUSSION:

TURBINE BYPASS VALVES ARE AIR TO OPEN AND AIR TO CLOSE SO AIR FAILURE RESPONSE IS UNPREDICTABLE. HOWEVER THE MOST COMMON FAILURE MODE IS CLOSED.

REFERENCES: DRAWING 208-039 SHEET MS-014

SENSING ELEMENT: MSV-14-PS

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-01	K-08-01
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STEAM GEN B
LEVEL
LOW-LOW

EVENT POINT 0955

INDICATED CONDITION:

- o STEAM GENERATOR "B" LEVEL <12" AS SENSED BY SP-1B-LS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "B" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER FEEDWATER LINEUP.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND INCREASE FEED RATE TO STEAM GENERATOR "B".
- o IF EMERGENCY FEEDWATER ACTUATES REFER TO EOP.

DISCUSSION:

IF ICS CONTROLS DOWNSTREAM OF THE LEVEL LIMITER ARE IN AUTO THE OTSG LEVELS SHOULD BE MAINTAINED AT THE LOW LIMIT OF APPROXIMATELY 30".

EMERGENCY FEED WATER WILL ACTUATE AT APPROXIMATELY 6" ON EFIC LOW RANGE LEVEL INSTRUMENTS.

SP-1B-LS2 INPUT IS FROM "B"STEAM GENERATOR STARTUP LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1B-LS2

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-02	K-08-02
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STEAM GEN B
LEVEL
HIGH/LOW

EVENT POINT 0945

INDICATED CONDITION:

- o STEAM GENERATOR "B" LEVEL >93.5% AS SENSED BY SP-1B-LS1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "B" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RESTORE STEAM GENERATOR LEVEL.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND REDUCE FEED RATE TO STEAM GENERATOR "B".
- o IF STEAM GENERATOR LEVEL CONTINUES TO INCREASE CONSIDERATION SHOULD BE GIVEN TO ISOLATE MAIN FEEDWATER TO STEAM GENERATOR "B" USING EFIC MAIN FEEDWATER ISOLATION PUSHBUTTONS.

DISCUSSION:

IF ICS CONTROLS DOWNSTREAM OF THE LEVEL LIMITER ARE IN AUTO THE OTSG LEVELS SHOULD BE MAINTAINED AT THE HIGH LIMIT OF APPROXIMATELY 95%.

VERY HIGH LEVELS IN A STEAM GENERATOR MAY CAUSE CARRYOVER AND DAMAGE THE MAIN TURBINE.

SP-1B-LS1 INPUT IS FROM "A" STEAM GENERATOR OPERATE LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1B-LS1

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-02	K-08-02
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STEAM GEN B
LEVEL
HIGH/LOW

EVENT POINT 0946

INDICATED CONDITION:

- o STEAM GENERATOR "B" LEVEL <24" AS SENSED BY SP-1B-LS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o STEAM GENERATOR "B" LEVEL INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o DETERMINE CAUSE AND RESTORE STEAM GENERATOR LEVEL.
- o TAKE MANUAL CONTROL OF FEEDWATER VALVES AND/OR MAIN FEED PUMP AND INCREASE FEED RATE TO STEAM GENERATOR "B".
- o IF EMERGENCY FEEDWATER ACTUATES THEN REFER TO EOP.

DISCUSSION:

IF IN AUTO ICS SHOULD LIMIT OTSG LEVEL TO 30" ON THE START UP RANGE, THEREFORE A PROBLEM EXISTS WITH ICS LEVEL CONTROL OR OPERATOR ERROR.

SP-1B-LS2 INPUT IS FROM "A" STEAM GENERATOR STARTUP LEVEL.

REFERENCES: DRAWING 208-039 SHEET MS-14

SENSING ELEMENT: SP-1B-LS2

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-03	K-08-03
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STEAM GEN B
BTU
CONDITION

EVENT POINT 1127

INDICATED CONDITION:

- o STEAM GENERATOR "B" FEEDWATER DEMAND IS >BTU LIMIT AS CALCULATED BY ICS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o THE FOLLOWING PARAMETERS INPUT TO A BTU CONDITION:

OTSG OUTLET PRESSURE HIGH
RCS Th TEMPERATURE LOW

FEEDWATER TEMPERATURE LOW
RCS FLOW LOW

OPERATOR ACTIONS FOR A VALID ALARM:

- o INVESTIGATE AND CORRECT CAUSE OF ALARM CONDITION.

DISCUSSION:

THE BTU LIMIT ALARM INDICATES CONDITIONS WHERE EITHER, THE ENERGY INPUT TO THE OTSG IS NOT SUFFICIENT, OR FEEDWATER/OTSG TEMPERATURE/PRESSURE ARE INADEQUATE TO MAINTAIN REQUIRED SUPERHEAT TO OPERATE THE MAIN TURBINE.

WITHOUT SUFFICIENT SUPERHEAT THERE IS A RISK OF CARRYOVER DAMAGE TO THE TURBINE BLADING.

REFERENCES: ICS/NNI DRAWINGS

SENSING ELEMENT: ICS MODULE 3-7-4

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-04	K-08-04
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STEAM GEN B
LOW LEVEL
LIMITED

EVENT POINT 1129

INDICATED CONDITION:

- o LOOP "B" FEEDWATER DEMAND IS ON LOW LEVEL LIMIT CONTROL.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o ICS MAINTAINS STEAM GENERATOR "B" AT APPROXIMATELY 30" ON THE START UP LEVEL INDICATOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- o ENSURE ICS MAINTAINS OTSG LEVEL ≥ 30 " ON THE START UP LEVEL INDICATOR.
- o IF LEVEL IS NOT BEING MAINTAINED BY ICS THEN MANUALLY CONTROL OTSG LEVEL USING FEEDWATER CONTROL VALVES AND MAIN FEED PUMP SPEED.

DISCUSSION:

THIS ALARM INDICATES THAT ICS IS TRYING TO CONTROL OTSG LEVEL AT THE LOW SETPOINT.

REFERENCES: ICS AND NNI DRAWINGS

SENSING ELEMENT: ICS MODULE 3-7-6

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-05	K-08-05
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[illegible]

VERIFY
FWV-29
CN AUTO

EVENT POINT 1228

INDICATED CONDITION:

- o ICS FEEDWATER LOOP "B" DEMAND >50% AND FWV-29 <15% FULL OPEN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FWV-29 AUTO/MANUAL TOGGLE SWITCH POSITION.
- o FWV-29 POSITION INDICATION.
- o LOOP "B" FEEDWATER MASTER DEMAND INDICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY FWV-29 AUTO/MANUAL TOGGLE SWITCH IN AUTO.
- o ENSURE FWV-29 IS OPENING.

DISCUSSION:

THIS IS AN EXPECTED ALARM DURING A NORMAL POWER INCREASE.

AT 50% FEEDWATER DEMAND ICS PULSES THE MAIN BLOCK VALVES TO 15% OPEN THEN RUNS THE VALVE OPEN THE REMAINING 85%. WHEN THE MAIN BLOCK VALVE LEAVES IT'S CLOSED SEAT FEED PUMP CONTROL TRANSFERS FROM ΔP CONTROL TO FLOW CONTROL.

REFERENCES: ICS AND NNI DRAWINGS

SENSING ELEMENT: FWV-29 POSITION SWITCHES

ICS-K ANNU'CIATOR RESPONSE	ICS-CY3-08-06	K-08-06
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[illegible]

FW CONTROL VLV
AIR
FAILURE

EVENT POINT 1431

INDICATED CONDITION:

- o INSTRUMENT AIR PRESSURE TO FWV-38 IS < APPROXIMATELY 35 PSIG AS SENSED BY FWV-38-KS.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FWV-38 AIR FAIL RESET PUSHBUTTON AMBER INDICATING LIGHTS ON.
- o FWV-38 BAILEY CONTROL STATION SHIFTS TO "HAND".
- o FWV-38 WILL NOT MOVE IN RESPONSE TO MCB CONTROLS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER INSTRUMENT AIR PRESSURE TO FWV-38.
- o DEPRESS AIR FAIL RESET PUSHBUTTON WHEN AIR PRESSURE IS RESTORED.

DISCUSSION:

WITH <35 PSIG INSTRUMENT AIR TO FWV-38 A BELLOWS COLLAPSES, THIS MECHANICALLY LOCKS THE VALVE POSITIONER, OPENS A DIAPHRAGM BYPASS VALVE AND ACTUATES THIS ALARM. WHEN SUPPLY AIR PRESSURE DROPS TO <28 PSIG A SOLENOID VALVE CLOSSES AND ISOLATES AIR TO THE VALVE. THE AIR FAIL RESET PUSHBUTTON RE-OPENS THIS SOLENOID, BUT IF INSTRUMENT AIR IS BELOW 35 PSIG THE BELLOWS WILL NOT EXPAND AND REMOVE THE MECHANICAL LOCK INSIDE THE VALVE POSITIONER SO HOLDING THE AIR FAIL RESET PUSHBUTTON WILL NOT ALLOW THE OPERATOR TO POSITION THE VALVE UNLESS THE ALARM CLEARS AND THE AIR FAIL RESET PUSHBUTTON INDICATOR LIGHTS GO OUT.

REFERENCES: DRAWING 208-032 SHEET FW-33

SENSING ELEMENT: 20X-FWV-38

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-06	K-08-06
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[illegible]

FW CONTROL VLV
AIR
FAILURE

EVENT POINT 1432

INDICATED CONDITION:

- o INSTRUMENT AIR PRESSURE TO FWV-39 VALVE POSITIONER <80 PSIG AS SENSED BY FWV-39-PS1 OR
- o SUPPLY AIR PRESSURE TO FWV-39 E/P CONVERTER <28 PSIG AS SENSED BY FWV-39-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FWV-39 AIR FAIL RESET PUSHBUTTON AMBER INDICATING LIGHTS ON.
- o FWV-39 BAILEY CONTROL STATION SHIFTS TO "HAND".
- o FWV-39 WILL NOT MOVE IN RESPONSE TO MCB CONTROLS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER INSTRUMENT AIR PRESSURE TO FWV-39.
- o DEPRESS AIR FAIL RESET PUSHBUTTON WHEN AIR PRESSURE IS RESTORED.

DISCUSSION:

WITH LOW AIR PRESSURE PS-1 OR PS-2 WILL PICK UP. THIS WILL ENERGIZE A SOLENOID WHICH WILL ISOLATE AND BLEED AIR TO TWO DIAPHRAGM VALVES THAT SUPPLY AIR TO THE VALVE ACTUATOR. WHEN AIR BLEEDS OFF THESE DIAPHRAGM VALVES THE VALVES CLOSE, THIS ISOLATES AIR TO THE TOP AND BOTTOM OF FWV-39 ACTUATOR. THIS EFFECTIVELY LOCKS UP THE VALVE. THE AIR FAIL RESET PUSHBUTTON WILL RE-OPEN THIS SOLENOID VALVE BUT IF PRESSURE IS NOT HIGH ENOUGH THE DIAPHRAGM VALVES WILL NOT OPEN TO ALLOW MOTIVE AIR TO GO TO THE VALVE ACTUATOR. SO, OPERATION OF THE VALVES WHILE AIR FAIL RESET ALARM IS IN USING THE AIR FAIL RESET PUSHBUTTON IS NOT CERTAIN.

REFERENCES: DRAWING 208-032 SHEET FW-33, DRAWING 308-324

SENSING ELEMENT: 20X-FWV-39

ICS-K ANNUNCIATOR RESPONSE	ICS-CY3-08-06	K-08-06
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[illegible]

FW CONTROL VLV
AIR
FAILURE

EVENT POINT 1433

INDICATED CONDITION:

- o INSTRUMENT AIR PRESSURE TO FWV-40 VALVE POSITIONER <80 PSIG AS SENSED BY FWV-40-PS1 OR
- o SUPPLY AIR PRESSURE TO FWV-40 E/P CONVERTER <28 PSIG AS SENSED BY FWV-40-PS2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- o FWV-40 AIR FAIL RESET PUSHBUTTON AMBER INDICATING LIGHTS ON.
- o FWV-40 BAILEY CONTROL STATION SHIFTS TO "HAND".
- o FWV-40 WILL NOT MOVE IN RESPONSE TO MCB CONTROLS.

OPERATOR ACTIONS FOR A VALID ALARM:

- o VERIFY PROPER INSTRUMENT AIR PRESSURE TO FWV-40.
- o DEPRESS AIR FAIL RESET PUSHBUTTON WHEN AIR PRESSURE IS RESTORED.

DISCUSSION:

WITH LOW AIR PRESSURE PS-1 OR PS-2 WILL PICK UP. THIS WILL ENERGIZE A SOLENOID WHICH WILL ISOLATE AND BLEED AIR TO TWO DIAPHRAGM VALVES THAT SUPPLY AIR TO THE VALVE ACTUATOR. WHEN AIR BLEEDS OFF THESE DIAPHRAGM VALVES THE VALVES CLOSE, THIS ISOLATES AIR TO THE TOP AND BOTTOM OF FWV-40 ACTUATOR. THIS EFFECTIVELY LOCKS UP THE VALVE. THE AIR FAIL RESET PUSHBUTTON WILL RE-OPEN THIS SOLENOID VALVE BUT IF PRESSURE IS NOT HIGH ENOUGH THE DIAPHRAGM VALVES WILL NOT OPEN TO ALLOW MOTIVE AIR TO GO TO THE VALVE ACTUATOR. SO, OPERATION OF THE VALVES WHILE AIR FAIL RESET ALARM IS IN USING THE AIR FAIL RESET PUSHBUTTON IS NOT CERTAIN.

REFERENCES: DRAWING 208-032 SHEET FW-33, DRAWING 308-324

SENSING ELEMENT: 20X-FWV-40