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Rev. 16

Effective Date 6-28-97

INFORMATION ONLY

ANNUNCIATOR RESPONSE

AR-701

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

SSF P ANNUNCIATOR RESPONSE

APPROVED BY: Interpretation Contact

Michael A. Winsberg for C.W.B.

DATE: 06/28/97

INTERPRETATION CONTACT: Manager, Nuclear Plant Operations Support

TABLE OF CONTENTS

1.0 PURPOSE

1.1 Establish a reference document for each Annunciator Window on the SFF-A1 Lampbox.

1.2 Establish operator actions for valid Annunciator alarms on the SSF-A1 Lampbox.

1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the SSF-A1 Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

2.1.1 EOP, Emergency Operating Procedure

2.1.2 OP-305, Operation of Pressurizer

2.1.3 AP-770, Emergency Diesel Generator Actuation

2.1.4 AP-545, Plant Runback

2.1.5 OP-700B, 480 Volt AC Motor Control Centers

2.1.6 OP-700D, 120 Volt AC Vital Busses

2.1.7 OP-703, Plant Distribution

2.1.8 OP-705, Emergency Power DC 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.

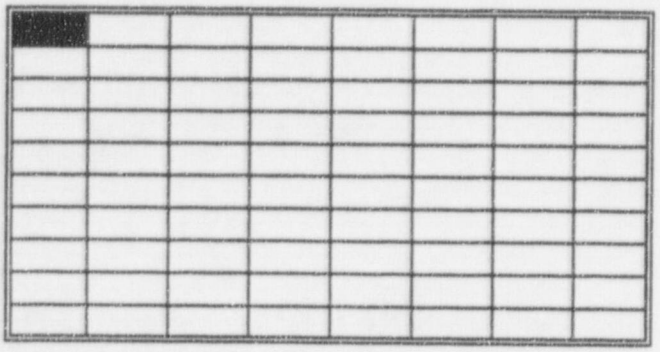
4.0 INSTRUCTIONS

4.1 Respond to alarms on the SSF-A1 Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-01	P-01-01



STARTUP XFMR FAULT

EVENT POINT 0694

INDICATED CONDITION:

- STARTUP TRANSFORMER GROUND FAULT LOCK-OUT RELAY 86TNSTU-1 HAS ACTUATED, DUE TO CURRENT ON THE NEUTRAL/GROUND SENSED BY RELAY 51TN/STU.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- THE FOLLOWING BREAKERS WILL AUTOMATICALLY TRIP AND LOCK-OUT

BREAKER 3103	BREAKER 3104	BREAKER 3203	BREAKER 3204
BREAKER 3205	BREAKER 3206	BREAKER 1691	BREAKER 1692

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY OPERATION OF THE LOCK OUT RELAYS 86TNSTU-1, AND 86TNSTU-2.
- ENSURE THAT ALL FEEDER BREAKERS FROM THE STARTUP TRANSFORMER ARE OPEN.

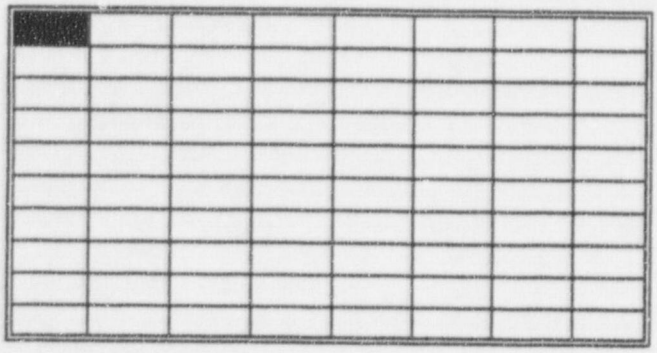
DISCUSSION:

THIS IS INDICATION OF AN INTERNAL GROUND ON THE STARTUP TRANSFORMER. THE LOCK-OUT RELAY ACTUATES TO STRIP THE POWER FEED AND THE LOADS OFF OF THE TRANSFORMER, AND TO PREVENT CLOSING IN A BREAKER ON A FAULTED TRANSFORMER.

REFERENCES: DRAWING 208-040 SHEET MT-84, EC-206-013

SENSING ELEMENT: RELAYS 51TN/STU, 86TNSTU-1, 86TNSTU-2

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-01	P-01-01



STARTUP XFMR FAULT

EVENT POINT 0695

INDICATED CONDITION:

- STARTUP TRANSFORMER SUDDEN PRESSURE LOCK-OUT RELAY 86SPSTU-1 HAS ACTUATED, DUE TO A SUDDEN RISE IN PRESSURE AS SENSED BY DEVICE 63FPX.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- THE FOLLOWING BREAKERS WILL AUTOMATICALLY TRIP AND LOCK-OUT

BREAKER 3103	BREAKER 3104	BREAKER 3203	BREAKER 3204
BREAKER 3205	BREAKER 3206	BREAKER 1691	BREAKER 1692

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY OPERATION OF THE LOCK OUT RELAYS 86SPSTU-1, 86SPSTU-2.
- ENSURE THAT ALL FEEDER BREAKERS FROM THE STARTUP TRANSFORMER ARE OPEN.

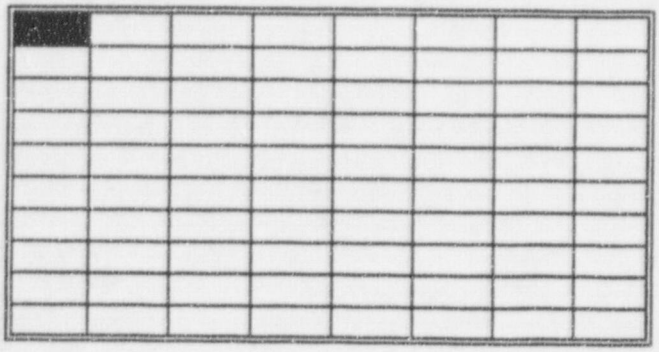
DISCUSSION:

THIS INDICATES A FLASH OVER HAS OCCURRED INTERNAL TO THE TRANSFORMER. THE LOCK-OUT RELAY ACTUATES TO STRIP THE POWER FEED AND THE LOADS OFF OF THE TRANSFORMER, AND TO PREVENT CLOSING IN A BREAKER ON A FAULTED TRANSFORMER.

REFERENCES: DRAWING 208-040 SHEET MT-85, EC-206-013

SENSING ELEMENT: 63FPX/STU, 86SPSTU-1, 86SPSTU-2

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-01	P-01-01



STARTUP XFMR FAULT

EVENT POINT 0696

INDICATED CONDITION:

- STARTUP TRANSFORMER PHASE DIFFERENTIAL LOCK-OUT RELAY 86TSTU-1 HAS ACTUATED, DUE TO A DIFFERENCE IN CURRENT ON THE INDIVIDUAL PHASES AS SENSED BY RELAYS 87TSTU-ϕA, 87TSTU-ϕB, OR 87TSTU-ϕC.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- THE FOLLOWING BREAKERS WILL AUTOMATICALLY TRIP AND LOCK-OUT

BREAKER 3103	BREAKER 3104	BREAKER 3203	BREAKER 3204
BREAKER 3205	BREAKER 3206	BREAKER 1691	BREAKER 1692

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY OPERATION OF THE LOCK OUT RELAY.
- ENSURE THAT ALL FEEDER BREAKERS FROM THE STARTUP TRANSFORMER ARE OPEN.

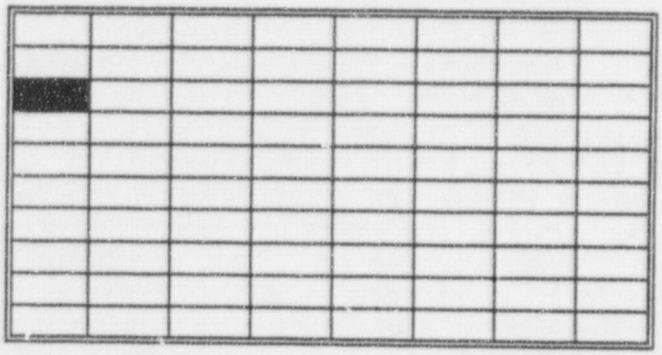
DISCUSSION:

THIS IS INDICATION OF A PHASE IMBALANCE ON THE STARTUP TRANSFORMER. THE LOCK-OUT RELAY ACTUATES TO STRIP THE POWER FEED AND THE LOADS OFF OF THE TRANSFORMER, AND TO PREVENT CLOSING IN A BREAKER ON A FAULTED TRANSFORMER.

REFERENCES: DRAWING 208-040 SHEET MT-86, EC-206-013,

SENSING ELEMENT: RELAYS 86TSTU-1, 87TSTU-ϕA, 87TSTU-ϕB, AND 87TSTU-ϕC

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-03	P-01-03



STARTUP XFMR MAJOR ALARM

EVENT POINT 0756

INDICATED CONDITION:

- STARTUP TRANSFORMER PRESS RELIEF DEVICE HAS ACTUATED DUE TO PRESS **>10 PSIG** AS SENSED BY 63PRX.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT IS ON, LOCATED ON THE START-UP TRANSFORMER ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

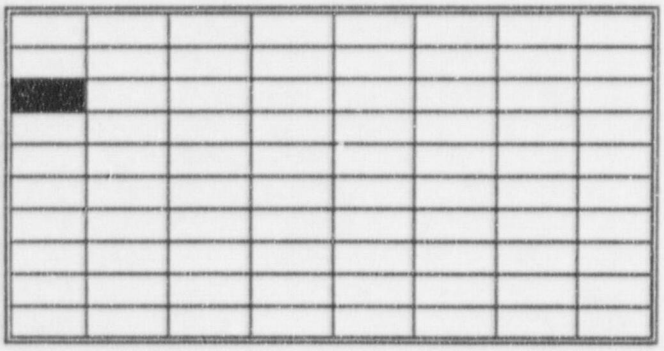
DISCUSSION:

IF XFMR FANS HAVE BEEN OFF FOR AN EXTENDED PERIOD OF TIME AND HIGH OIL TEMPS EXIST, RESTART OF FANS MAY ACTUATE FIRE DELUGE SYSTEM DUE TO HIGH FAN EXHAUST AIR TEMPS. THIS WILL TRIP THE FANS AND OIL PUMPS OFF AGAIN. IF THIS OCCURS THE DELUGE VALVES MUST BE RESET BEFORE XFMR FANS AND PUMPS WILL RESTART.

REFERENCES: DRAWING 208-040 SHEET MT-090

SENSING ELEMENT: 63PRX

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-03	P-01-03



STARTUP XFMR MAJOR ALARM

EVENT POINT 0757

INDICATED CONDITION:

- STARTUP TRANSFORMER TOP OIL TEMPERATURE >90°C AS SENSED BY DEVICE 26QX.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT IS ON, LOCATED ON THE STARTUP TRANSFORMER ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

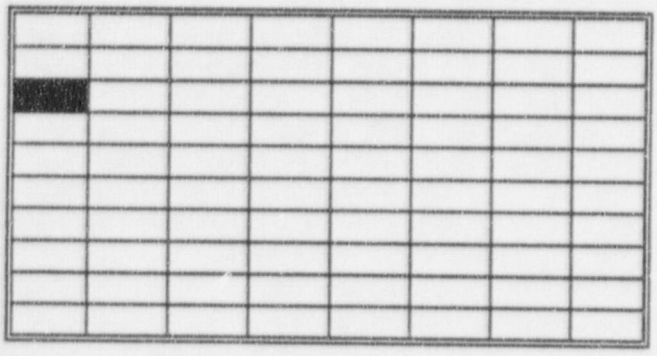
DISCUSSION:

IF XFMR FANS HAVE BEEN OFF FOR AN EXTENDED PERIOD OF TIME AND HIGH OIL TEMPS EXIST, RESTART OF FANS MAY ACTUATE FIRE DELUGE SYSTEM DUE TO HIGH FAN EXHAUST AIR TEMPS. THIS WILL TRIP THE FANS AND OIL PUMPS OFF AGAIN. IF THIS OCCURS THE DELUGE VALVES MUST BE RESET BEFORE XFMR FANS AND PUMPS WILL RESTART.

REFERENCES: DRAWING 208-040 SHEET MT-090

SENSING ELEMENT: 26QX

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-03	P-01-03



STARTUP XFMR MAJOR ALARM

EVENT POINT 0758

INDICATED CONDITION:

- STARTUP TRANSFORMER WINDING TEMP **>120°C** AS SENSED BY DEVICE 49X.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT IS ON, LOCATED ON THE STARTUP TRANSFORMER ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

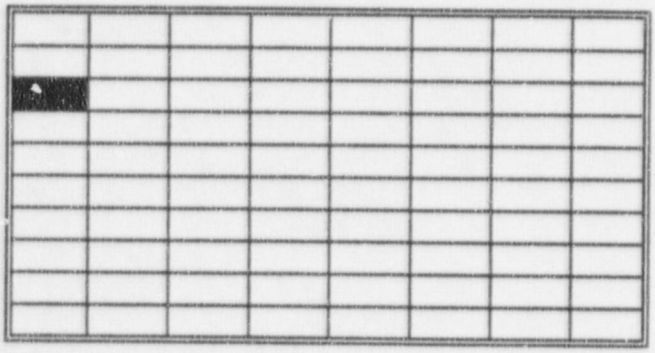
DISCUSSION:

IF XFMR FANS HAVE BEEN OFF FOR AN EXTENDED PERIOD OF TIME AND HIGH OIL TEMPS EXIST, RESTART OF FANS MAY ACTUATE FIRE DELUGE SYSTEM DUE TO HIGH FAN EXHAUST AIR TEMPS. THIS WILL TRIP THE FANS AND OIL PUMPS OFF AGAIN. IF THIS OCCURS THE DELUGE VALVES MUST BE RESET BEFORE XFMR FANS AND PUMPS WILL RESTART.

REFERENCES: DRAWING 208-040 SHEET MT-090

SENSING ELEMENT: 49X

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-03	P-01-03



STARTUP XFMR MAJOR ALARM

EVENT POINT 0760

INDICATED CONDITION:

- STARTUP TRANSFORMER HAS EVOLVED >200 cc OF COMBUSTIBLE GAS AS SENSED BY DEVICE 63GDRX.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED LIGHT IS ON, LOCATED ON THE STARTUP TRANSFORMER ALARM PANEL.
- INDICATION OF COMBUSTIBLE GAS ON THE METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

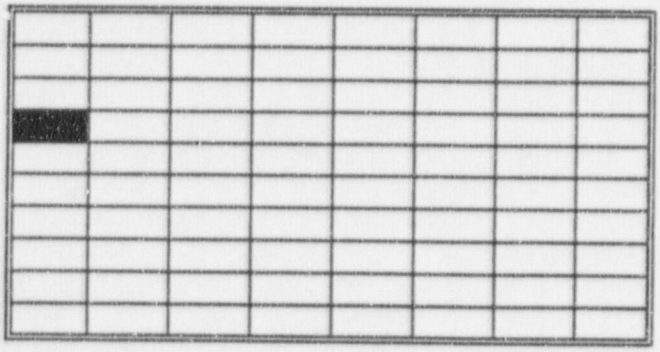
DISCUSSION:

THIS CONDITION IS INDICATIVE OF INSULATION BREAKDOWN INTERNAL TO THE TRANSFORMER. AS THE INSULATION DEGRADES COMBUSTIBLE GAS EVOLVES. THE GAS COLLECTS IN A CHAMBER ON THE TOP OF THE TRANSFORMER. THE AMOUNT OF THIS GAS IS READ ON A GAUGE ON THE TRANSFORMER.

REFERENCES: DRAWING 208-040 SHEET MT-090

SENSING ELEMENT: 63GDRX

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0751

INDICATED CONDITION:

- DC POWER TO STARTUP TRANSFORMER ALARM CIRCUITS IS < 50VDC AS SENSED BY RELAY 27DC.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO INDICATING LIGHTS ARE ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

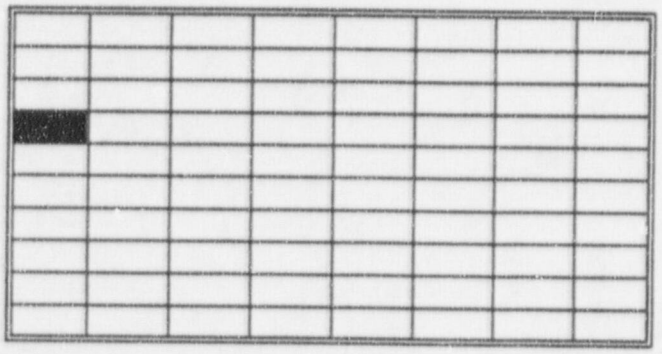
DISCUSSION:

THIS IS AN INDICATION THAT THE 125 VDC ALARM AND CONTROL POWER RELAY IS DEENERGIZED. LOSS OF THIS POWER SUPPLY DISABLES THE AUTOMATIC FUNCTIONS OF THE PUMPS AND FANS AND DISABLES ALL ALARM FUNCTIONS.

REFERENCES: DRAWING 208-040 SHEET MT-090, VENDOR DRAWING 3906D662AC

SENSING ELEMENT: 27DC RELAY

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0752

INDICATED CONDITION:

- TRANSFORMER TEMPERATURE >85°C AND ONE OR MORE OF THE PUMPS DID NOT START AS SENSED BY FLOW SWITCH 63QF-1, OR 63QF-2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED PUMP NO FLOW INDICATING LIGHT IS ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

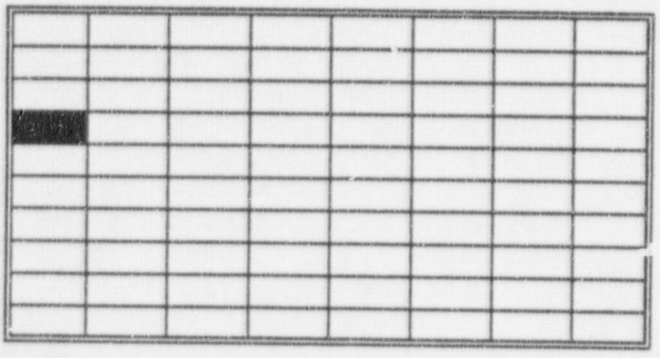
DISCUSSION:

THIS IS AN INDICATION THAT THE PUMPS DID NOT START AS REQUIRED. AND THAT THE TRANSFORMER MAY BE OVERHEATING. CONSIDERATION SHOULD BE GIVEN TO REDUCING LOAD.

REFERENCES: DRAWING 208-040 SHEET MT-090, VENDOR DRAWING 3906D662AC

SENSING ELEMENT: RELAYS 74X, 63QF-1, 63QF-2

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0753

INDICATED CONDITION:

- STARTUP TRANSFORMER NORMAL POWER SUPPLY TO AUXILIARY POWER RELAYS IS DEENERGIZED AS SENSED BY RELAY 83, AND 83X.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED AUXILIARY POWER FAILURE (NORMAL) INDICATING LIGHT IS ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

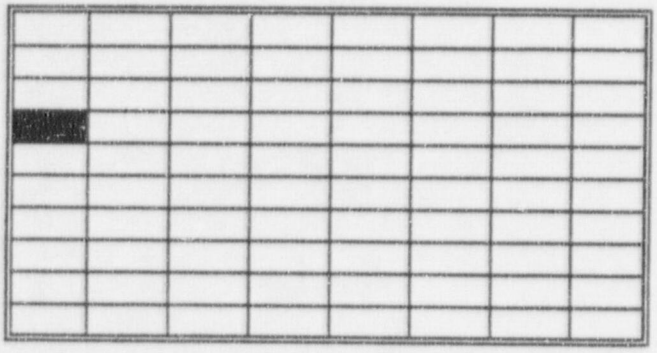
DISCUSSION:

THIS INDICATES THAT THE NORMAL SOURCE OF POWER FOR THE AUXILIARY EQUIPMENT IS DEENERGIZED. THE TRANSFORMER SHOULD OPERATE ON THE BACK-UP POWER SOURCE UNTIL THE PROBLEM CAN BE CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-090, VENDOR DRAWING 3906D662AC

SENSING ELEMENT: RELAYS 83 83X.

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0754

INDICATED CONDITION:

- STARTUP TRANSFORMER AUXILIARY POWER EMERGENCY POWER SUPPLY IS DEENERGIZED AS SENSED BY RELAY 27E.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED AUXILIARY POWER FAILURE (EMERGENCY) INDICATING LIGHT IS ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

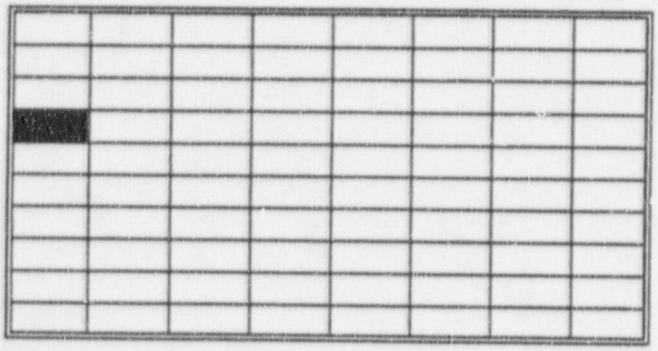
DISCUSSION:

THIS INDICATES THAT THE EMERGENCY SOURCE OF POWER FOR THE AUXILIARY EQUIPMENT IS DEENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-090, VENDOR DRAWING 3906D662AC

SENSING ELEMENT: RELAY 27E

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0755

INDICATED CONDITION:

- STARTUP TRANSFORMER AUXILIARY POWER IS BEING SUPPLIED FROM THE EMERGENCY POWER SUPPLY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- RED AUTO TRANSFER ALARM INDICATING LIGHT IS ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.

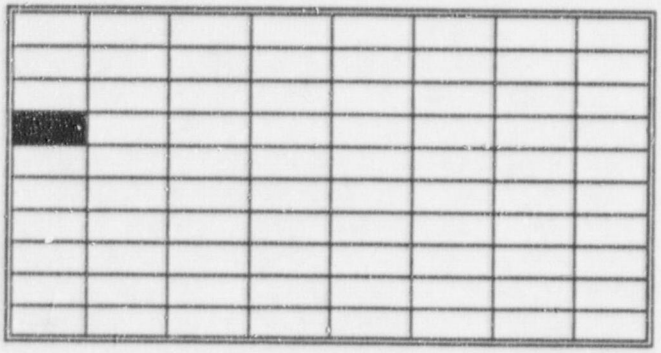
DISCUSSION:

THIS INDICATES THAT THE EMERGENCY SOURCE OF POWER FOR THE AUXILIARY EQUIPMENT IS ENERGIZED, AND THAT IT IS SUPPLYING THE POWER FOR THE AUXILIARY EQUIPMENT.

REFERENCES: DRAWING 208-040 SHEET MT-090, VENDOR DRAWING 3906D662AC

SENSING ELEMENT: RELAY 89E, 89X

SSF ANNUNCIATOR RESPONSE	SSF-A1-01-04	P-01-04



STARTUP XFMR MINOR ALARM

EVENT POINT 0759

INDICATED CONDITION:

- STARTUP TRANSFORMER LIQUID LEVEL LOW AS SENSED BY 63QLX LEVEL SWITCH.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- LIQUID LEVEL INDICATOR LOCATED ON THE STARTUP TRANSFORMER.
- RED LIQUID LEVEL LOW ALARM LIGHT IS ON, LOCATED ON THE LOCAL ALARM PANEL.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTIFY SYSTEM DISPATCHER.
- WHEN CONDITION IS CLEARED THE ALARM WILL NEED TO BE RESET AT THE LOCAL ALARM PANEL.

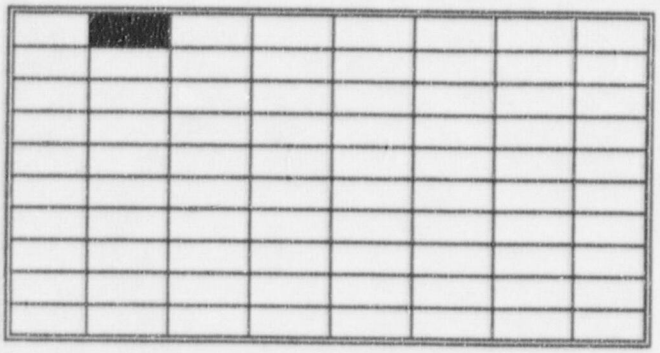
DISCUSSION:

THIS ALARM IS INDICATIVE OF A POSSIBLE OIL LEAK.

REFERENCES: DRAWING 208-040 SHEET MT-090

SENSING ELEMENT: 63QLX,

SSF ANNUNCIATOR RESPONSE	SSF-A1-02-01	P-02-01



6.9 KV BUS A DEAD

EVENT POINT 0641

INDICATED CONDITION:

- 6900V REACTOR AUX BUS 3A UNDER VOLTAGE DEVICE IS ACTUATED ON TWO OUT OF THREE PHASES SENSING < 4000 VOLTS AC AS SENSED BY THE FOLLOWING: RELAY 27X-A, RELAY 27X-B, RELAY 27X-C.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 6900v REACTOR AUX BUS 3A-VOLTAGE ON MCB
- 6900v REACTOR AUX BUS 3A- VOLTAGE IN SWITCHGEAR ROOM

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY RCP-1A TRIPPED.
- VERIFY RCP-1C TRIPPED.
- REFER TO EOP.

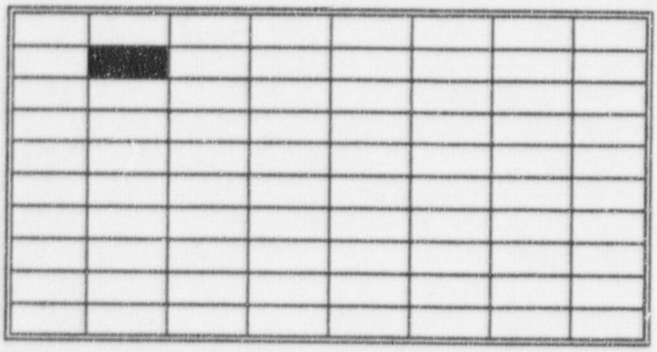
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. UNDERVOLTAGE RELAYING SHOULD STRIP THE LOAD BREAKERS FROM THE BUS.

REFERENCES: DRAWING 208-040 SHEET MT-63, EC-206-021

SENSING ELEMENT: 27X RELAY, 27Y RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-02	P-02-02



**4 KV
UNIT BUS A
DEAD**

EVENT POINT 0645

INDICATED CONDITION:

- 4160V UNIT BUS 3A UNDER VOLTAGE DEVICE IS ACTUATED ON TWO OUT OF THREE PHASES SENSING < 3750 VOLTS AC AS SENSED BY THE FOLLOWING: RELAY 27-A, RELAY 27-B, RELAY 27-C.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATORS ON UNIT BUS 3A.
- COMPUTER POINT E-002.
- GREEN INDICATING LIGHT IS ON, LOCATED ON THE CONTROL STATION FOR BREAKER 3201.
- GREEN INDICATING LIGHT IS ON, LOCATED ON THE CONTROL STATION FOR BREAKER 3203.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO AP-545 PLANT RUNBACK PROCEDURE.

DISCUSSION:

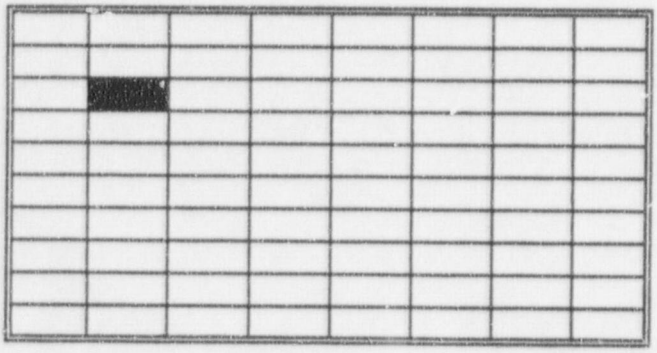
THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. THE LOSS OF UNIT BUS 3A WILL RESULT IN THE LOSS OF THE FOLLOWING:

AHF-14A	AHF-14C	MTSW-3E	RWP-1	SCP-1A	FWP-1A
CWP-1A	CWP-1C	CDP-1A	MTSW-3H	MTSW-3C	MTSW-3A

REFERENCES: DRAWING 208-040 SHEET MT-64, EC-206-011

SENSING ELEMENT: 27X RELAY, 27Y-2 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-03	P-02-03



4 KV
RX AUX BUS
DEAD

EVENT POINT 1990

INDICATED CONDITION:

- 4160V REACTOR AUX BUS UNDER VOLTAGE DEVICE IS ACTUATED ON TWO OUT OF THREE PHASES SENSING < 3750 VOLTS AC AS SENSED BY THE FOLLOWING: RELAY 27X-A, RELAY 27X-B, RELAY 27X-C.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATORS ON 4160V REACTOR AUX BUS.
- COMPUTER POINT E-016.
- GREEN INDICATING LIGHT IS ON, LOCATED ON THE CONTROL STATION FOR BREAKER 3105.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF BUS UNDERVOLTAGE.

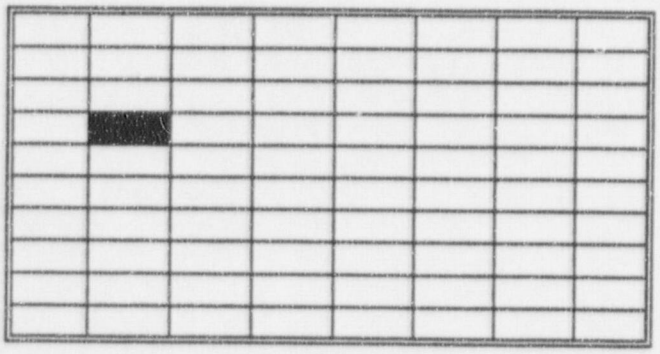
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. THE LOSS OF REACTOR AUX BUS WILL RESULT IN THE LOSS OF FWP-7.

REFERENCES: DRAWING 208-040 SHEET MT-136

SENSING ELEMENT: 27X RELAY, 27Y-1 RELAY

SSF ANNUNCIATOR RESPONSE	SSF-A1-02-04	P-02-04



**480 V
TURB AUX BUS A
DEAD**

EVENT POINT 0661

INDICATED CONDITION:

- 480V TURBINE AUX BUS 3A UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-3/33TA.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-007.
- GREEN LIGHT ON BREAKER 3303 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

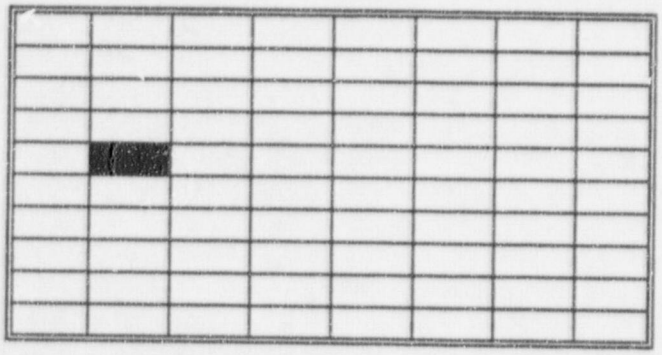
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040, MT-68

SENSING ELEMENT: 27Y-33TA

SSF ANNUNCIATOR RESPONSE	SSF-A1-02-05	P-02-05



480 V
RX AUX BUS A
DEAD

EVENT POINT 0657

INDICATED CONDITION:

- 480V REACTOR AUX BUS 3A UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-1/33RA.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-009.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3305 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

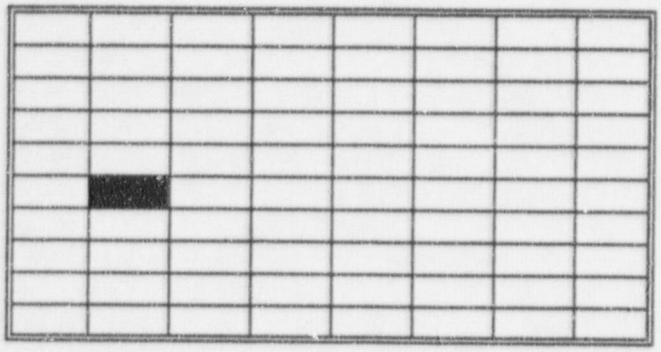
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-067

SENSING ELEMENT: 27Y-1/33RA

SSF ANNUNCIATOR RESPONSE	SSF-A1-02-06	P-02-06



**480 V
INTAKE BUS A
DEAD**

EVENT POINT 0665

INDICATED CONDITION:

- 480V INTAKE BUS 3A UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-1/33IA.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-011.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3307 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

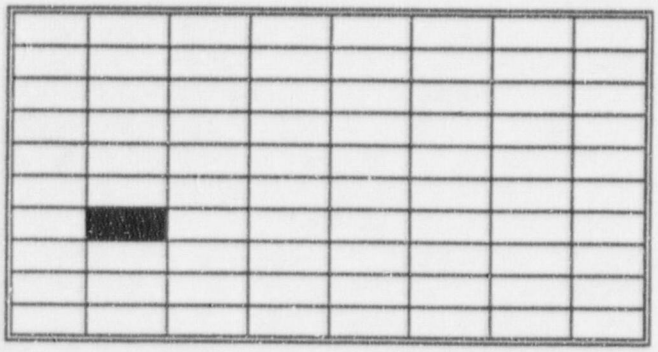
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-069

SENSING ELEMENT: 27Y-1/33IA

SSF ANNUNCIATOR RESPONSE	SSF-A1-02-07	P-02-07



480 V PLANT AUX BUS DEAD

EVENT POINT 0669

INDICATED CONDITION:

- 480V PLANT AUX BUS 3 UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-2/33P.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-006.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3312 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

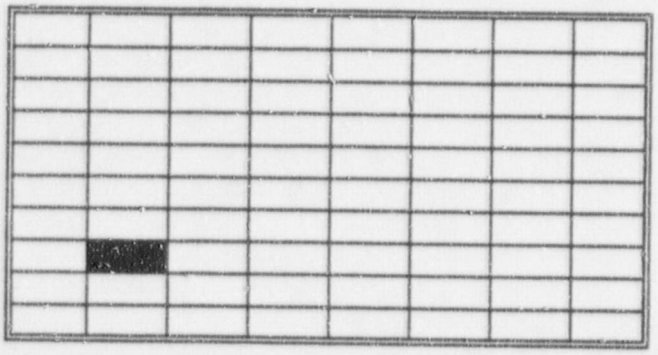
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. THIS CAUSES THE "B" CONTROL ROD DRIVE SYSTEM TO BE DEENERGIZED. ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-070

SENSING ELEMENT: 27Y-2/33P

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-08	P-02-08



6.9 KV RX AUX XFMR TEMP HIGH

EVENT POINT 2002

INDICATED CONDITION:

- TRANSFORMER ELECTRONIC TEMPERATURE MONITOR CONTACT K3 IS CLOSED DUE TO EITHER THE TRANSFORMER TEMPERATURE >200°C, OR A LOSS OF CONTROL POWER.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

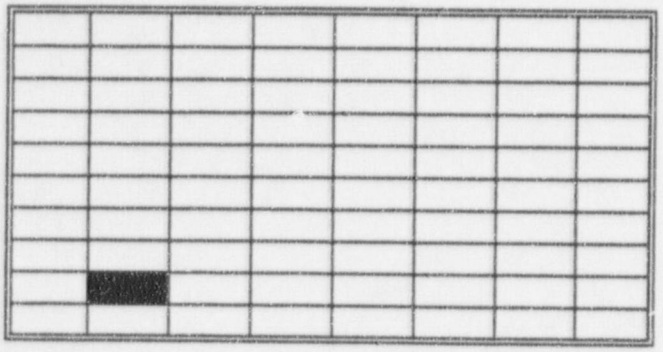
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE.

REFERENCES: DRAWING 208-040 SHEET MT-134

SENSING ELEMENT: ELECTRONIC TEMPERATURE MONITORING CONTACT K3

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0626

INDICATED CONDITION:

- BREAKER 3340 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-028.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER AT "B" 480 V ES UNIT 2B.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3B1.

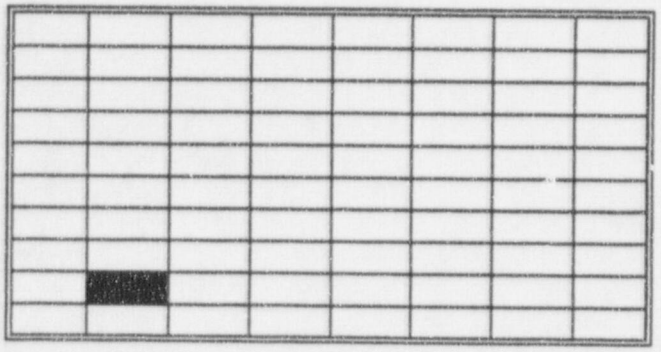
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-047

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC [illegible] R
OPEN

EVENT POINT 0627

INDICATED CONDITION:

- BREAKER 3343 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V TURB AUX BUS, UNIT 3C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON TURB MCC 3A.

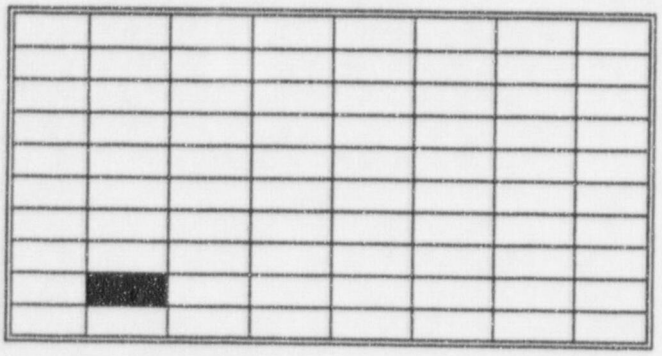
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-048

SENSING ELEMENT: R/b CONTACT

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0628

INDICATED CONDITION:

- BREAKER 3344 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V TURB AUX BUS, UNIT 3C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON TURB MCC 3B.

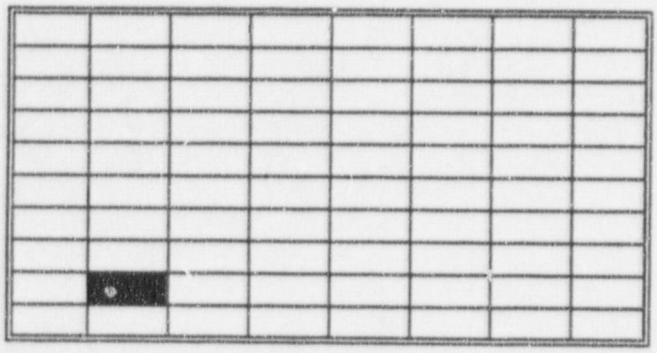
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-049

SENSING ELEMENT: R/b CONTACT

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0629

INDICATED CONDITION:

- BREAKER 3345 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V REACTOR AUX BUS, UNIT 3B.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON REACTOR MCC 3A1.

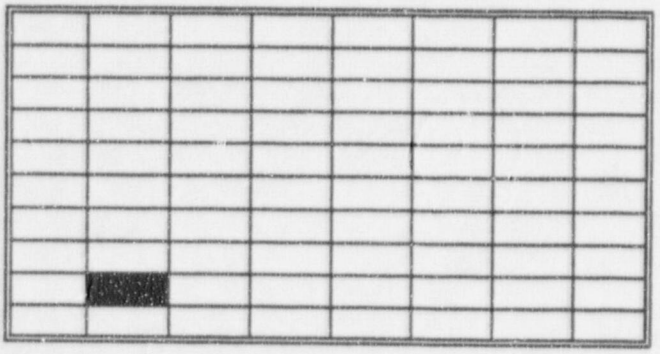
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-050

SENSING ELEMENT: R/b CONTACT

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0630

INDICATED CONDITION:

- BREAKER 3346 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V REACTOR AUX BUS, UNIT 3A.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON REACTOR MCC $3B_1$.

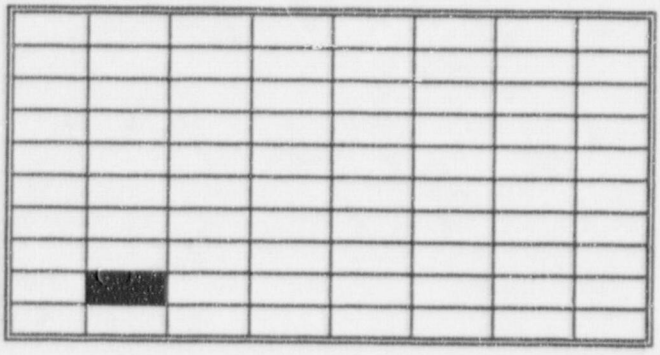
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-051

SENSING ELEMENT: R/b CONTACT

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



**480 V
MCC BREAKER
OPEN**

EVENT POINT 0633

INDICATED CONDITION:

- BREAKER 3341 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-026.
- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V ES BUS UNIT 3D.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3A1.

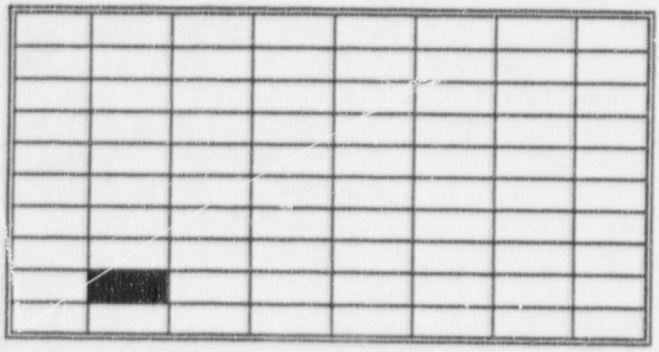
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-054

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0634

INDICATED CONDITION:

- BREAKER 3353 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480 V TURBINE AUX BUS, UNIT 3A.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON WATER TREATMENT MCC 3A.

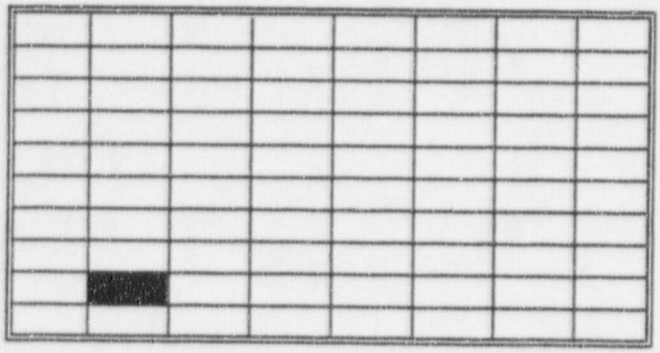
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-055

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-C



480 V
MCC BREAKER
OPEN

EVENT POINT 0635

INDICATED CONDITION:

- BREAKER 3354 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V TURBINE AUX BUS, UNIT 3B.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON WATER TREATMENT MCC 3B.

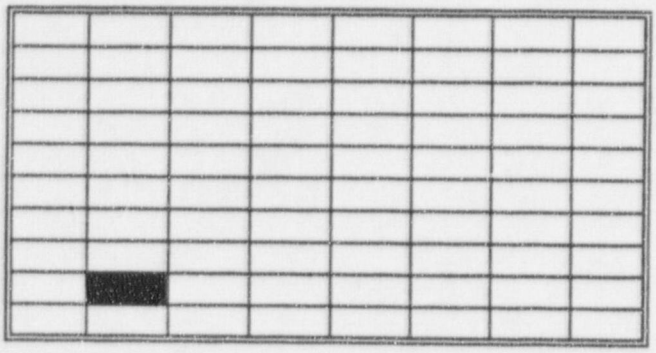
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-056

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0638

INDICATED CONDITION:

- BREAKER 3357 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT 480V INTAKE BUS 3 UNIT 4C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON INTAKE MCC 3.

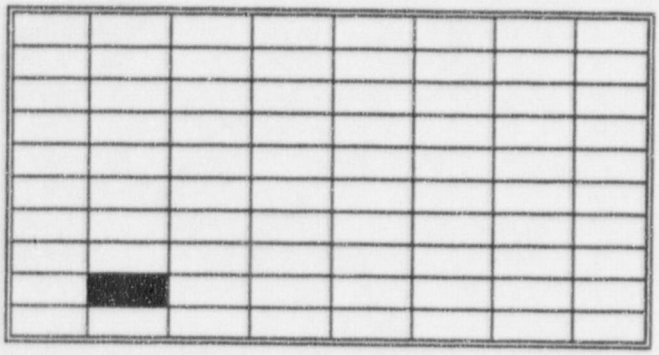
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-059

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0639

INDICATED CONDITION:

- BREAKER 3363 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT 480V TURBINE AUX BUS 3A UNIT 3D.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON VENTILATION MCC 3A.

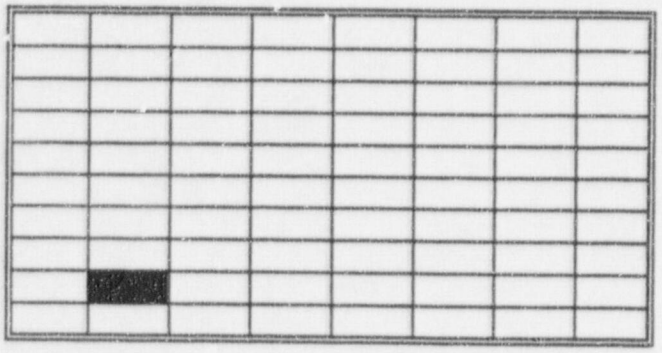
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-060

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0640

INDICATED CONDITION:

- BREAKER 3364 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V TURBINE AUX BUS, UNIT 3D.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON VENTILATION MCC 3B.

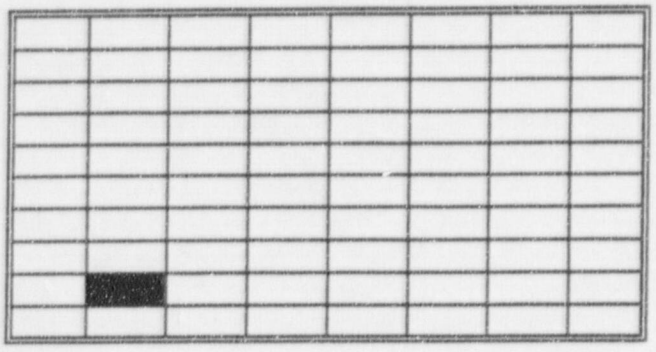
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-061

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0675

INDICATED CONDITION:

- BREAKER 3365 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V REACTOR AUX BUS, UNIT 3C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON REACTOR MCC 3A2.

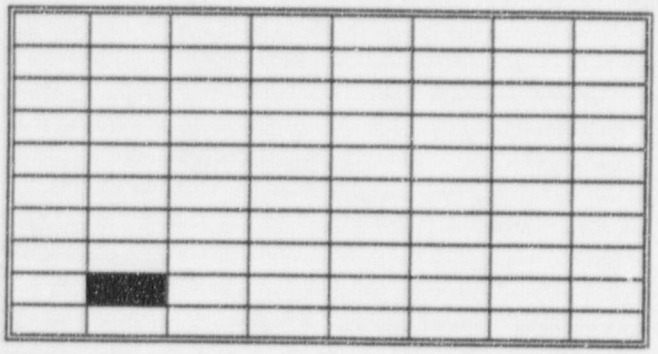
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-062

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0676

INDICATED CONDITION:

- BREAKER 3366 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V REACTOR BUS, UNIT 3C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON REACTOR MCC 3B2.

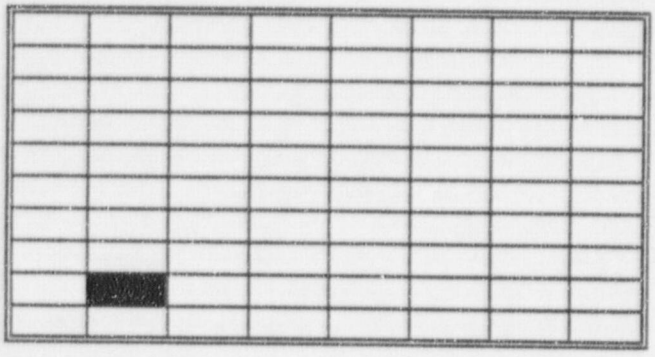
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-087

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0682

INDICATED CONDITION:

- BREAKER 3351 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-027.
- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V ES BUS, UNIT 2B.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3A2.

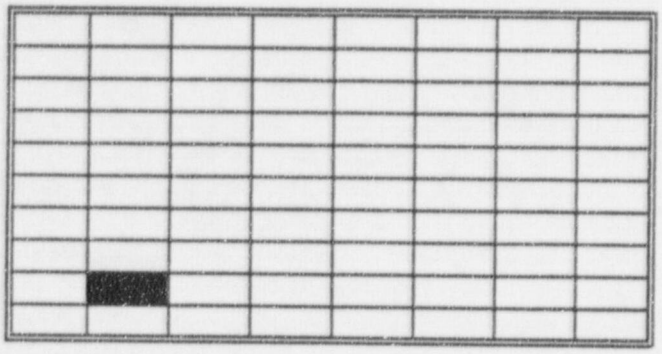
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-046

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



**480 V
MCC BREAKER
OPEN**

EVENT POINT 0763

INDICATED CONDITION:

- BREAKER 3331 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-023.
- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "A" 480V ES BUS, UNIT 2C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3A3.

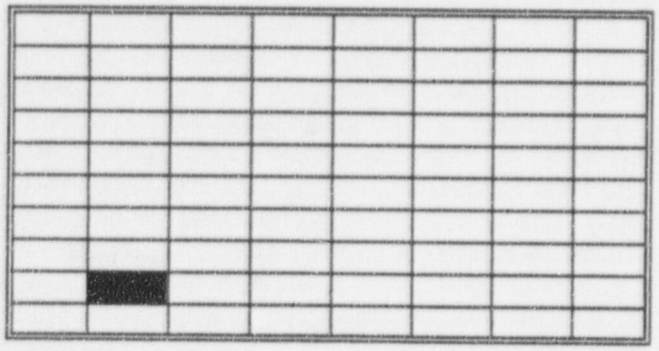
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-113

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 0764

INDICATED CONDITION:

- BREAKER 3330 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-024.
- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V ES BUS, UNIT 2C.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3B3.

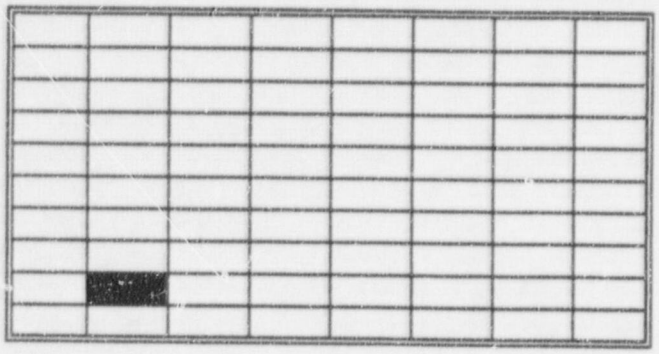
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-116

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-02-09	P-02-09



480 V
MCC BREAKER
OPEN

EVENT POINT 1119

INDICATED CONDITION:

- BREAKER 3350 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-021.
- GREEN LIGHT IS ON, LOCATED ON THE LOCAL INDICATION AT "B" 480V ES BUS, UNIT 3D.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO OP-700B FOR LOADS ON E.S. MCC 3B2.

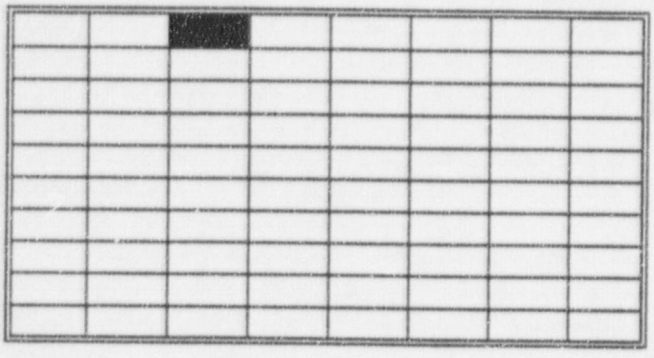
DISCUSSION:

THIS IS INDICATIVE OF A POSSIBLE FAULT ON THE MOTOR CONTROL CENTER, RESTORATION OF POWER SHOULD BE IN ACCORDANCE WITH OP-703.

REFERENCES: DRAWING 208-040 SHEET MT-119

SENSING ELEMENT: BREAKER CONTACT R/B

SSF ANNUNCIATOR RESPONSE	SSF-A1-03-01	P-03-01



6.9 KV
BUS B
DEAD

EVENT POINT 0643

INDICATED CONDITION:

- 6900V REACTOR AUX BUS 3B UNDER VOLTAGE DEVICE IS ACTUATED ON TWO OUT OF THREE PHASES SENSING < 4000 VOLTS AC AS SENSED BY THE FOLLOWING: RELAY 27X-A, RELAY 27X-B, RELAY 27X-C

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- 6900v REACTOR AUX BUS 3B-VOLTAGE ON MCB
- 6900v REACTOR AUX BUS 3B-VOLTAGE IN SWITCHGEAR ROOM

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY RCP-1B TRIPPED
- VERIFY RCP-1D TRIPPED
- REFER TO EOP

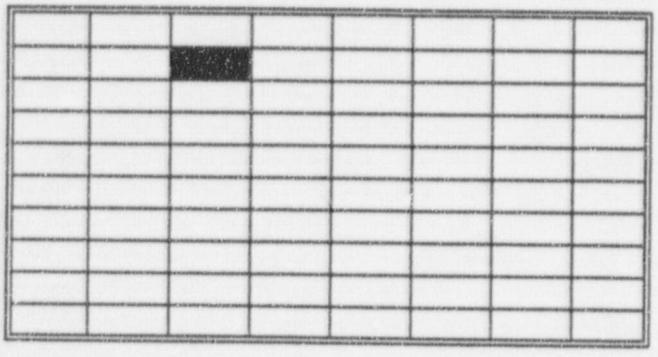
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. UNDERVOLTAGE RELAYING SHOULD STRIP THE LOAD BREAKERS FROM THE BUS.

REFERENCES: DRAWING 208-040 SHEET MT-63, EC-206-021

SENSING ELEMENT: 27X RELAY, 27Y RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-02	P-03-02



4 KV
UNIT BUS B
DEAD

EVENT POINT 0647

INDICATED CONDITION:

- 4160V UNIT BUS 3B UNDER VOLTAGE DEVICE IS ACTUATED ON TWO OUT OF THREE PHASES SENSING < 3750 VOLTS AC AS SENSED BY THE FOLLOWING: RELAY 27-A, RELAY 27-B, RELAY 27-C

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATORS ON UNIT BUS 3B.
- COMPUTER POINT E-003.
- GREEN INDICATING LIGHT ON CONTROL STATION FOR BREAKER 3202.
- GREEN INDICATING LIGHT ON CONTROL STATION FOR BREAKER 3204.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- REFER TO AP-545 PLANT RUNBACK PROCEDURE.

DISCUSSION:

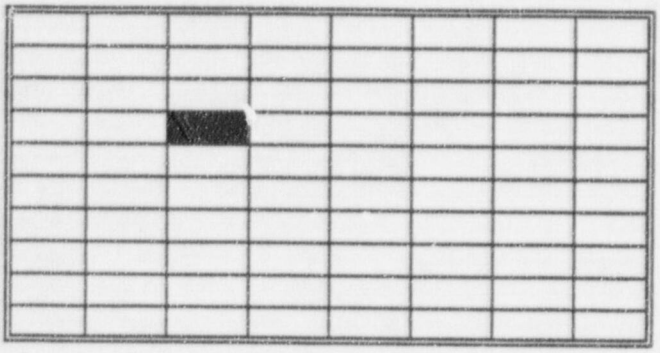
THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED. THE LOSS OF UNIT BUS 3B WILL RESULT IN THE LOSS OF THE FOLLOWING:

MTSW-3B	MTSW-3D	MTSW-3H	CDP-1B	CWP-1B	CWP-1D
FWP-1B	SCP-1B	SWP-1C	AHF-14B	AHF-14D	

REFERENCES: DRAWING 208-040 SHEET MT-64, EC-206-021

SENSING ELEMENT: 27A,B,&C RELAYS, 27Y-2 RELAY

SSF ANNUNCIATOR RESPONSE	SSF-A1-03-04	P-03-04



480 V
TURB AUX BUS B
DEAD

EVENT POINT 0663

INDICATED CONDITION:

- 480V TURBINE AUX BUS 3B UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-3/33TB.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-008.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3304 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

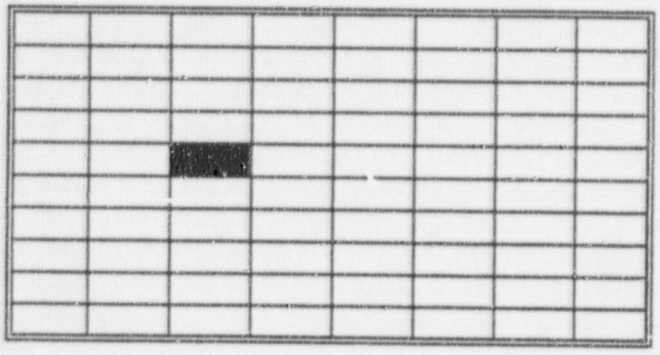
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-068

SENSING ELEMENT: 27Y-33TB

SSF ANNUNCIATOR RESPONSE	SSF-A1-03-05	P-03-05



480 V
RX AUX BUS B
DEAD

EVENT POINT 0659

INDICATED CONDITION:

- 480V REACTOR AUX BUS 3B UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-3/33RB.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-010.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3306 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

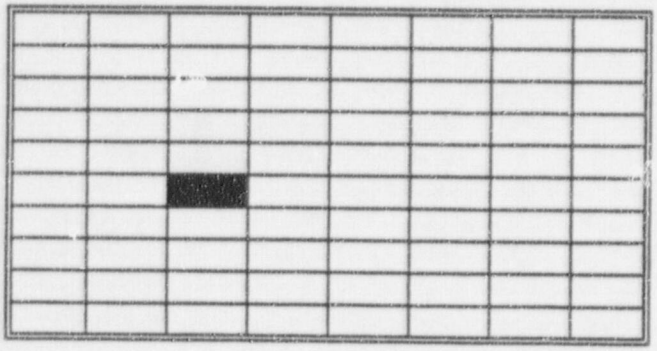
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-067

SENSING ELEMENT: 27Y-33RB

SSF ANNUNCIATOR RESPONSE	SSF-A1-03-06	P-03-06



480 V
INTAKE BUS B
DEAD

EVENT POINT 0667

INDICATED CONDITION:

- 480V INTAKE BUS 3B UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-1/33IB.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-012.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3308 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

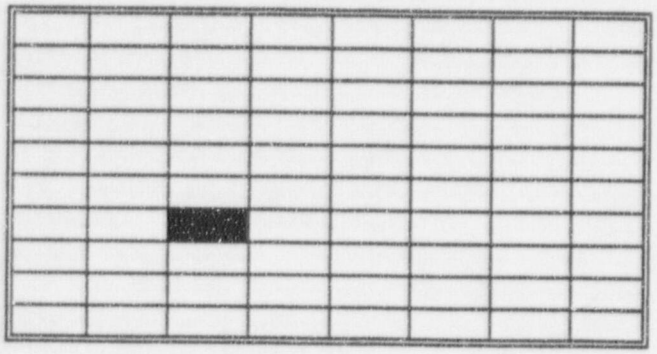
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-069

SENSING ELEMENT: 27Y-1/33IB

SSF ANNUNCIATOR RESPONSE	SSF-A1-03-07	P-03-07



480 V
HTG AUX BUS
DEAD

EVENT POINT 0671

INDICATED CONDITION:

- 480V HEATING AUX BUS 3 UNDERVOLTAGE RELAYING HAS ACTUATED DUE TO A BUS UNDERVOLTAGE AS SENSED BY RELAY 27Y-3/33H.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BUS VOLTAGE METER INDICATION.
- COMPUTER POINT E-025.
- GREEN LIGHT IS ON, LOCATED ON THE BREAKER 3309 CONTROL STATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- STABILIZE PLANT.
- INVESTIGATE THE CAUSE OF BUS UNDERVOLTAGE.

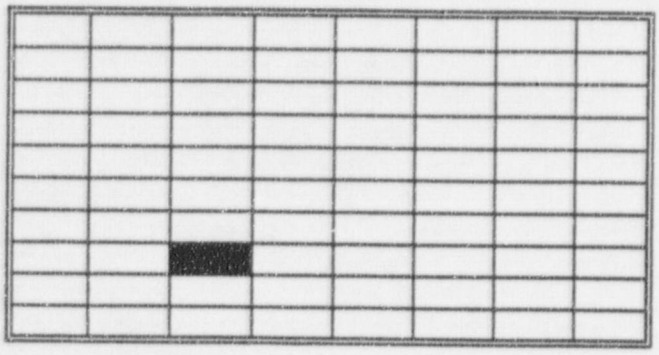
DISCUSSION:

THIS INDICATES THE UNDERVOLTAGE RELAYING FOR THE BUS HAS ACTUATED, ALL OF THE LOAD BREAKERS SHOULD OPEN ON UNDERVOLTAGE AND THEY WILL NEED TO BE RECLOSED LOCALLY AFTER THE CAUSE HAS BEEN CORRECTED.

REFERENCES: DRAWING 208-040 SHEET MT-070

SENSING ELEMENT: 27Y-3/33H

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V
XFMR TEMP
HIGH

EVENT POINT 0700

INDICATED CONDITION:

- TURBINE AUX BUS 3A TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

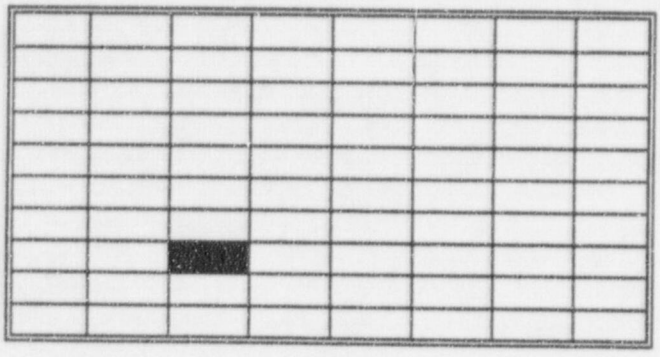
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-027

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0701

INDICATED CONDITION:

- TURBINE AUX BUS 3B TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3B TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

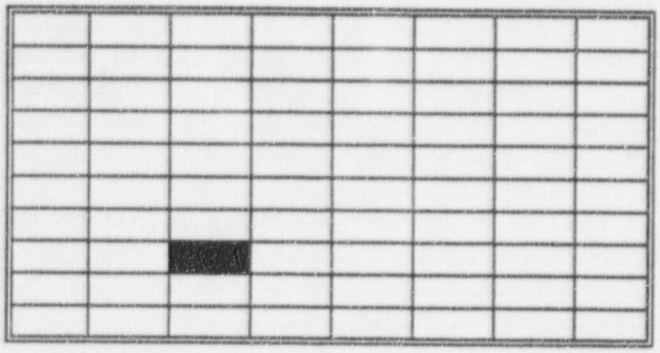
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-028

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0702

INDICATED CONDITION:

- REACTOR AUX BUS 3A TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3C TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

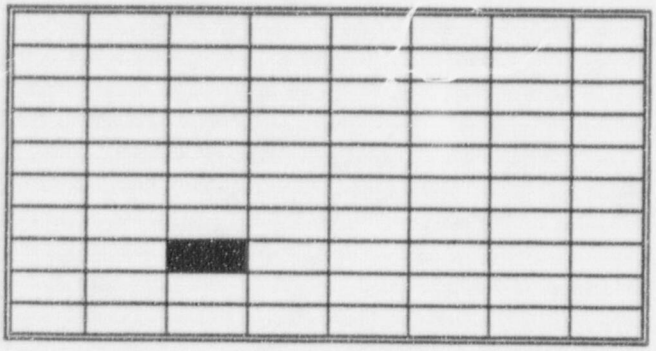
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-029

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0703

INDICATED CONDITION:

- REACTOR AUX BUS 3B TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3D TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

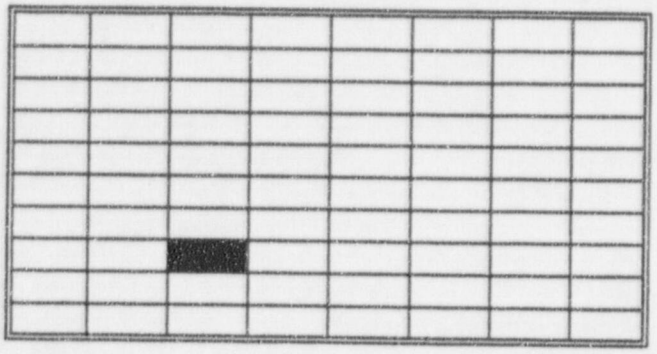
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-030

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0704

INDICATED CONDITION:

- INTAKE AUX BUS 3A TRANSFORMER TEMPERATURE IS >90°C AS SENSED BY HOT SPOT TEMPERATURE SW.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3H A TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

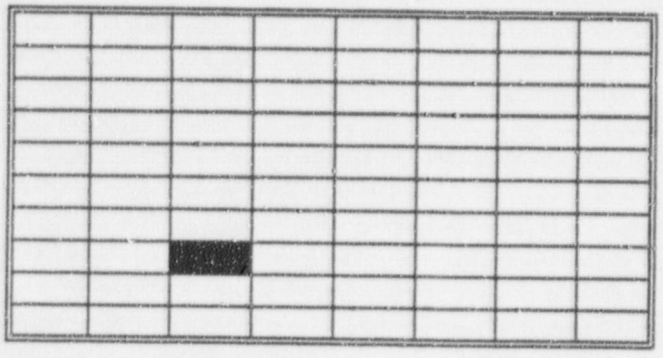
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE.

REFERENCES: DRAWING 208-040 SHEET MT-031

SENSING ELEMENT: TRANS TEMP SW

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0705

INDICATED CONDITION:

- INTAKE AUX BUS 3B TRANSFORMER TEMPERATURE IS >90°C AS SENSED BY HOT SPOT TEMPERATURE SW.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3H B TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

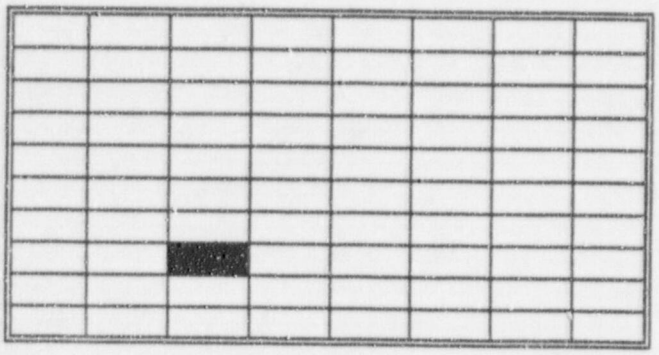
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE.

REFERENCES: DRAWING 208-040 SHEET MT-032

SENSING ELEMENT: TRANS TEMP SW

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0706

INDICATED CONDITION:

- HEATING AUX BUS 3 TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH [illegible] VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3E TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

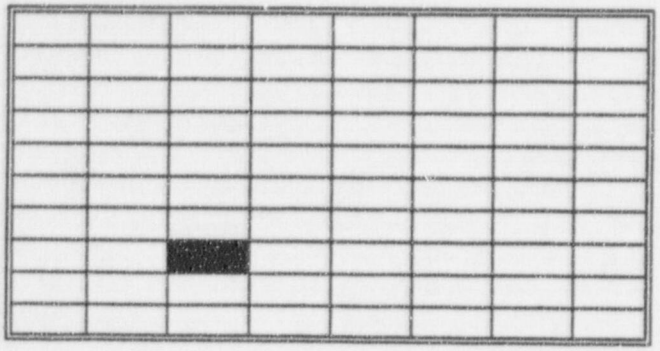
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-033

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0708

INDICATED CONDITION:

- ES 480V "B" TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3G TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

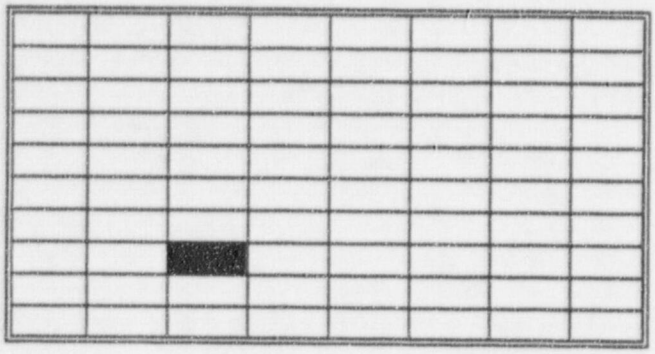
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE.

REFERENCES: DRAWING 208-040 SHEET MT-133

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V
XFMR TEMP
HIGH

EVENT POINT 0710

INDICATED CONDITION:

- ES 480V "A" TRANSFORMER TEMPERATURE IS **>200°C** AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3F TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

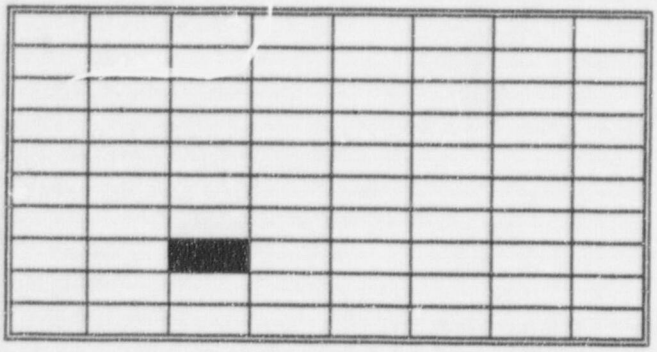
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE.

REFERENCES: DRAWING 208-040 SHEET MT-133

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-08	P-03-08



480V XFMR TEMP HIGH

EVENT POINT 0711

INDICATED CONDITION:

- PLANT AUX BUS 3 TRANSFORMER TEMPERATURE IS >200°C AS SENSED BY HOT SPOT TEMP. SW.2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH TEMPERATURE ON MTSW-3J TRANSFORMER TEMPERATURE MONITOR.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT THE TRANSFORMER FANS HAVE STARTED.

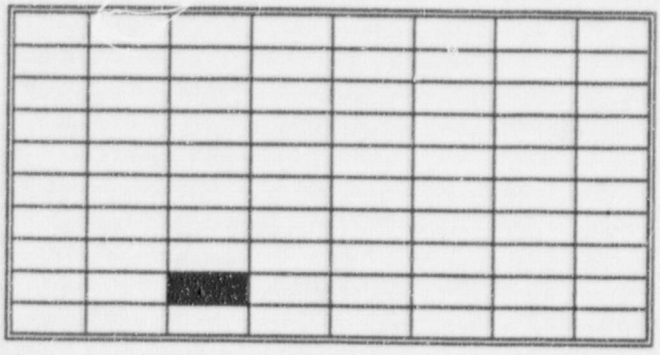
DISCUSSION:

THE ALARM INDICATES THAT THE TRANSFORMER DOES NOT HAVE ADEQUATE COOLING. TRANSFORMER LOAD SHOULD BE REDUCED AS MUCH AS POSSIBLE. THIS IS AN EXPECTED ALARM WHEN BUS IS DE-ENERGIZED.

REFERENCES: DRAWING 208-040 SHEET MT-036

SENSING ELEMENT: SW-2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-09	P-03-09



PZR
MCC BREAKER
OPEN

EVENT POINT 0636

INDICATED CONDITION:

- BREAKER 3355 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT ON LOCAL INDICATION AT REACTOR AUX BUS 3A UNIT 1C
- ZERO KW INDICATED ON RC-203-JI.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-305.

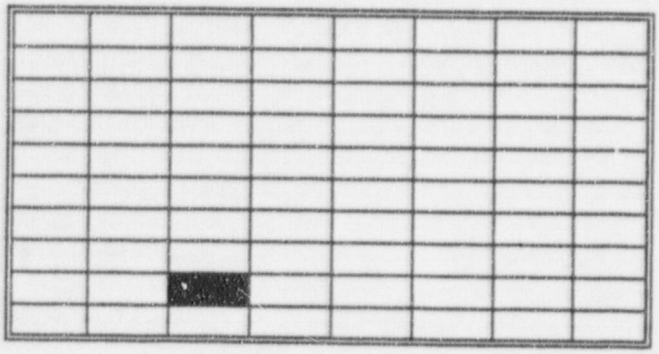
DISCUSSION:

THIS CONDITION INDICATES THAT THE PRESSURIZER HEATER MCC 3A FEEDER BREAKER IS OPEN. SUFFICIENT HEATER CAPACITY WILL REMAIN AVAILABLE TO MEET STS REQUIREMENTS FROM PRESSURIZER HEATER MCC 3B.

REFERENCES: DRAWING 208-040 SHEET MT-57

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-03-09	P-03-09



PZR
MCC BREAKER
OPEN

EVENT POINT 0637

INDICATED CONDITION:

- BREAKER 3356 IS OPEN AND RACKED IN.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- GREEN LIGHT IS ON, LOCATED ON THE "B" REACTOR AUX BUS UNIT 1C
- ZERO KW INDICATED ON RC-204-JI.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-305.

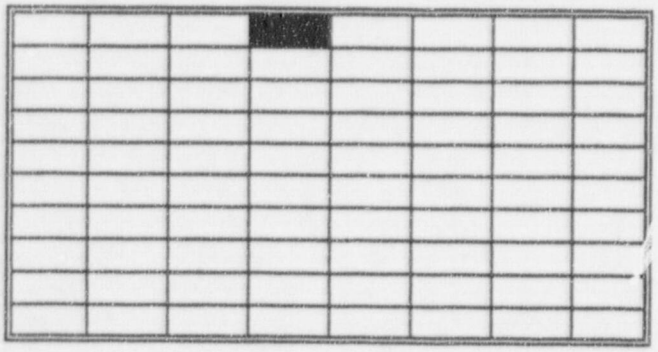
DISCUSSION:

THIS CONDITION INDICATES THAT THE PRESSURIZER HEATER MCC 3B FEEDER BREAKER IS OPEN. SUFFICIENT HEATER CAPACITY SHOULD REMAIN AVAILABLE TO MEET STS REQUIREMENTS FROM PRESSURIZER HEATER MCC 3A.

REFERENCES: DRAWING 208-040 SHEET MT-58

SENSING ELEMENT: BREAKER CONTACT R/b

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-01	P-04-01



INVERTER A FAILURE

EVENT POINT 0159

INDICATED CONDITION:

- LOSS OF INVERTER AC INPUT **<365 VAC**
  AND
  A LOSS OF DC INPUT **< 105 VDC**

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INVERTER POWER STATUS INDICATOR LIGHT IS OUT, LOCATED ON THE MCB.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT VBXS-1A HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-3 IS ENERGIZED.
- ENSURE THAT VBXS-3A HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-8 IS ENERGIZED.
- REFER TO OP-703.

DISCUSSION:

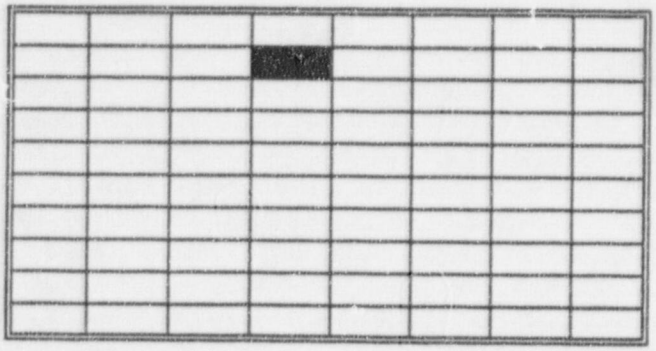
THIS IS INDICATIVE OF A FAILURE OF THE INVERTER, THE VITAL BUS SHOULD REMAIN ENERGIZED VIA THE TRANSFORMERS.

REFER TO STS FOR THE PROPER ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X21

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 0164

INDICATED CONDITION:

- INVERTER DC INPUT VOLTAGE IS < 135 VDC AS SENSED BY X7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SUPPLYING LOAD RED INDICATING LIGHT IS ON, LOCATED ON THE INVERTER.
- BATTERY SOURCE INPUT METER INDICATING > 50 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE LOSS OF AC INPUT TO THE INVERTER.
- REESTABLISH AC INPUT TO THE INVERTER.

DISCUSSION:

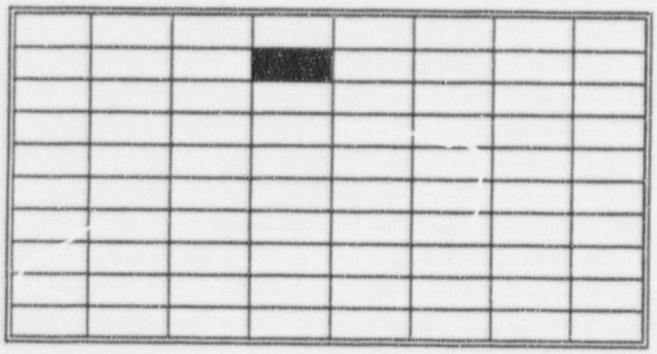
THIS IS AN INDICATION OF THE DC INPUT SUPPORTING THE INVERTER OUTPUT. THE CAUSE COULD BE INTERNAL TO THE INVERTER, OR POSSIBLY A LOSS OFF AC INPUT TO INVERTER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X-7

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 0169

INDICATED CONDITION:

- DC INPUT TO INVERTER IS > 200 AMPS DC AS SENSED BY X48.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT METER INDICATING > 200 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE OF THE HIGH LOAD ON THE INVERTER.
- REFER TO OP-700D.

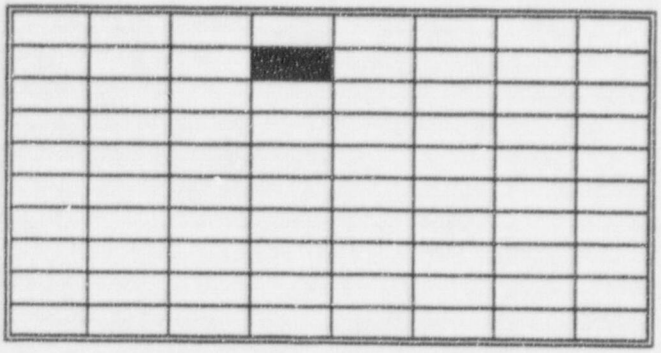
DISCUSSION:

- THIS IS INDICATIVE OF A PROBLEM WITH THE INVERTER, CONSIDERATION SHOULD BE GIVEN TO BYPASSING THE INVERTER. REFER TO OP-703.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X48

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 0174

INDICATED CONDITION:

- DC INPUT VOLTAGE FROM BATTERY IS **<105 VDC** AS SENSED BY RELAY X6.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY INPUT BREAKER TRIPPED LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF LOW INPUT VOLTAGE.
- RECLOSE DC INPUT BREAKER AFTER VOLTAGE IS RECOVERED.

DISCUSSION:

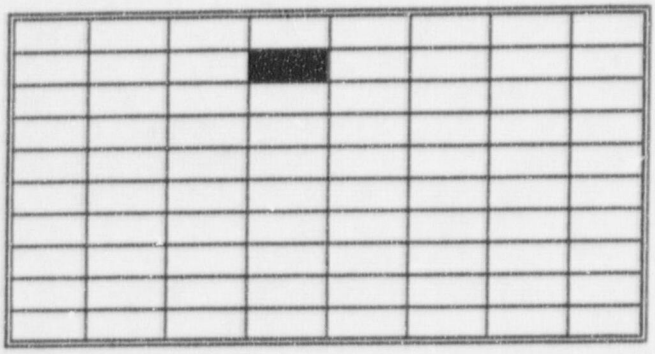
WITH A LOSS OF DC INPUT VOLTAGE THE INVERTER IS NOT ABLE TO FUNCTION DURING A LOSS OF AC INPUT POWER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X6

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 0179

INDICATED CONDITION:

- DC INPUT VOLTAGE TO INVERTER IS **>140 VDC** AS SENSED BY X16.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH OUTPUT VOLTAGE ON BATTERY CHARGERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE FOR VOLTAGE PROBLEMS.

DISCUSSION:

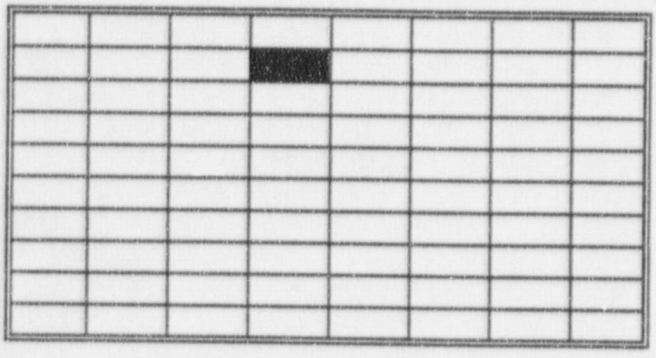
THIS CONDITION MAY CAUSE PROBLEMS WITH INVERTER RELIABILITY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X16

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 0189

INDICATED CONDITION:

- INVERTER AC OUTPUT VOLTAGE IS < **114 VAC** AS SENSED BY RELAY X26.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATOR ON INVERTER FACE INDICATING < 114 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- TRANSFER VITAL BUS TO ALTERNATE SOURCE IF AVAILABLE.
- REFER TO OP-703.

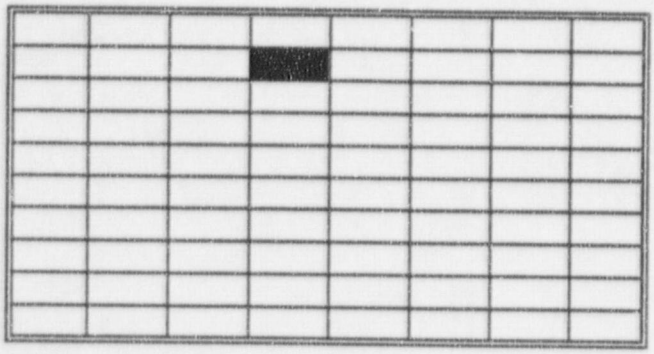
DISCUSSION:

LOW OUTPUT VOLTAGE RESULTS FROM EITHER EXCESSIVE LOAD ON THE INVERTER, OR FROM LOW INPUT VOLTAGE. THE INVERTER SHOULD TRANSFER TO THE ALTERNATE SOURCE ON A LOW VOLTAGE.

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X26

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-04-02	P-04-02



INVERTER A TROUBLE

EVENT POINT 1523

INDICATED CONDITION:

- "A" INVERTER FAN FAILURE

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- "A" INVERTER CABINET COOLING FAN(S) NOT RUNNING

OPERATOR ACTIONS FOR A VALID ALARM:

- CHECK TEMPERATURE OF "A" INVERTER
- NOTIFY ELECTRIC SHOP

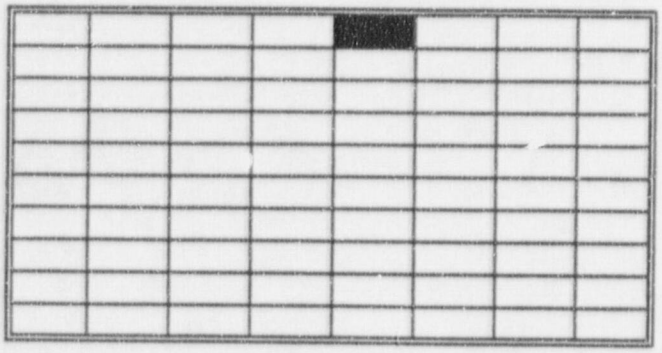
DISCUSSION:

EXCESSIVE TEMPERATURE COULD CAUSE LOSS OF INVERTER, CONSIDERATION SHOULD BE GIVEN TO SUPPLYING VITAL BUS POWER FROM ALTERNATE SOURCE PER OP-703

REFERENCES: 209-058 VB-01 AND 20-102649

SENSING ELEMENT: X9

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-01	P-05-01



INVERTER B FAILURE

EVENT POINT 0160

INDICATED CONDITION:

- LOSS OF INVERTER AC INPUT < 365 VAC
  AND
  A LOSS OF DC INPUT < 105 VDC

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INVERTER POWER STATUS INDICATOR LIGHT IS OFF, LOCATED ON THE MCB.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT VBXS-1B HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-4 IS ENERGIZED.
- ENSURE THAT VBXS-3B HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-10 IS ENERGIZED.
- REFER TO OP-703.

DISCUSSION:

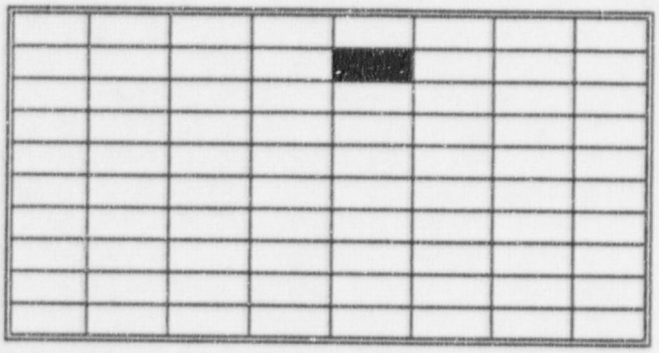
THIS IS INDICATIVE OF A FAILURE OF THE INVERTER, THE VITAL BUS SHOULD REMAIN ENERGIZED VIA THE TRANSFORMERS.

REFER TO STS FOR THE PROPER ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL11

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-02	P-05-02



INVERTER B TROUBLE

EVENT POINT 0165

INDICATED CONDITION:

- INVERTER DC INPUT AMPERAGE IS > 50 AMPS AS SENSED BY RL2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT RED INDICATING LIGHT IS ON, LOCATED ON THE INVERTER.
- BATTERY SOURCE INPUT METER VB-002-II1 INDICATING > 50 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE LOSS OF AC INPUT TO THE INVERTER.
- REESTABLISH AC INPUT TO THE INVERTER.

DISCUSSION:

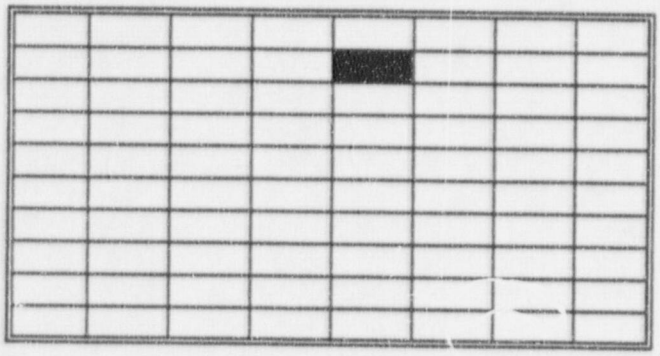
THIS IS AN INDICATION OF THE DC INPUT SUPPORTING THE INVERTER OUTPUT. THE CAUSE COULD BE INTERNAL TO THE INVERTER, OR POSSIBLY A LOSS OFF AC INPUT TO INVERTER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-02	P-05-02



INVERTER B TROUBLE

EVENT POINT 0170

INDICATED CONDITION:

- DC INPUT TO INVERTER IS > **168 AMPS DC** AS SENSED BY RL3.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT METER VB-002-II: INDICATING >168 AMPS LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE OF THE HIGH LOAD ON THE INVERTER.
- REFER TO OP-700D.

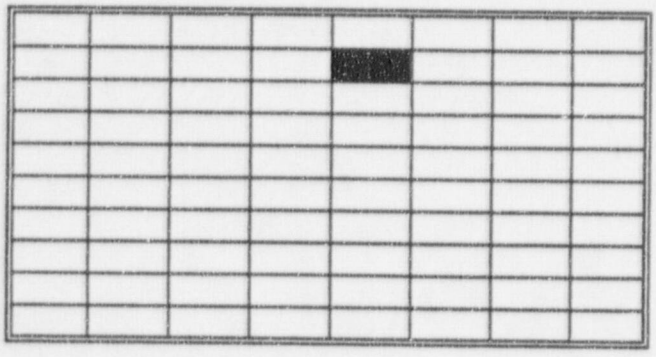
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE INVERTER, CONSIDERATION SHOULD BE GIVEN TO BYPASSING THE INVERTER. REFER TO OP-703.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL3

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-02	P-05-02



INVERTER B TROUBLE

EVENT POINT 0175

INDICATED CONDITION:

- DC INPUT VOLTAGE FROM BATTERY IS **<105 VDC** AS SENSED BY RELAY RL6.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY INPUT BREAKER TRIPPED LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF LOW INPUT VOLTAGE.
- RECLOSE DC INPUT BREAKER AFTER VOLTAGE IS RECOVERED.

DISCUSSION:

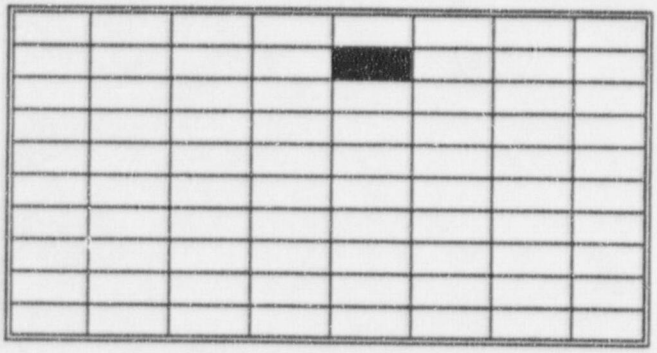
WITH A LOSS OF DC INPUT VOLTAGE THE INVERTER IS NOT ABLE TO FUNCTION DURING A LOSS OF AC INPUT POWER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL6

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-02	P-05-02



INVERTER B TROUBLE

EVENT POINT 0180

INDICATED CONDITION:

- DC INPUT VOLTAGE TO INVERTER IS **>140 VDC** AS SENSED BY RL7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH OUTPUT VOLTAGE ON BATTERY CHARGERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE FOR VOLTAGE PROBLEMS.

DISCUSSION:

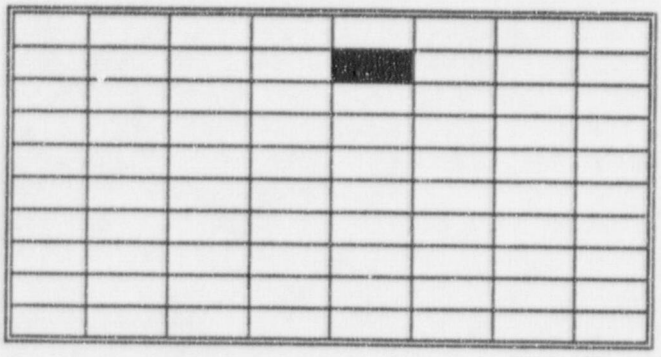
THIS CONDITION MAY CAUSE PROBLEMS WITH INVERTER RELIABILITY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL7

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-05-02	P-05-02



INVERTER B TROUBLE

EVENT POINT 0190

INDICATED CONDITION:

- INVERTER AC OUTPUT VOLTAGE IS < 114 VAC AS SENSED BY RELAY RL1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATOR VB-006-II ON INVERTER FACE INDICATING < 114 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- TRANSFER VITAL BUS TO ALTERNATE SOURCE IF AVAILABLE.
- REFER TO OP-703.

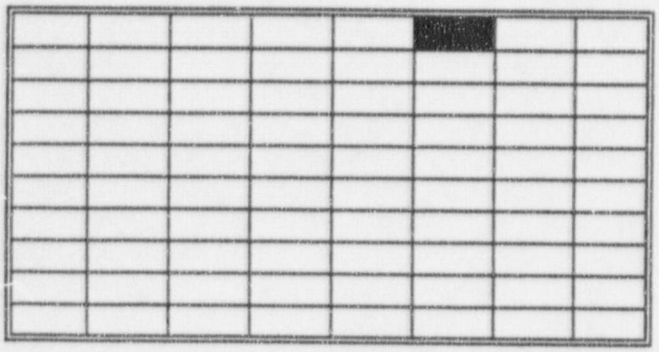
DISCUSSION:

LOW OUTPUT VOLTAGE RESULTS FROM EITHER EXCESSIVE LOAD ON THE INVERTER, OR FROM LOW INPUT VOLTAGE. THE INVERTER SHOULD TRANSFER TO THE ALTERNATE SOURCE ON A LOW VOLTAGE.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-01	P-06-01



INVERTER C FAILURE

EVENT POINT 0161

INDICATED CONDITION:

- LOSS OF INVERTER AC INPUT **<365 VAC**
  AND
  A LOSS OF DC INPUT **< 105 VDC**

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INVERTER POWER STATUS INDICATOR LIGHT IS OFF, LOCATED ON THE MCB.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT VBXS-1C HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-5 IS ENERGIZED.
- ENSURE THAT VBXS-3C HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-9 IS ENERGIZED.
- REFER TO OP-703.

DISCUSSION:

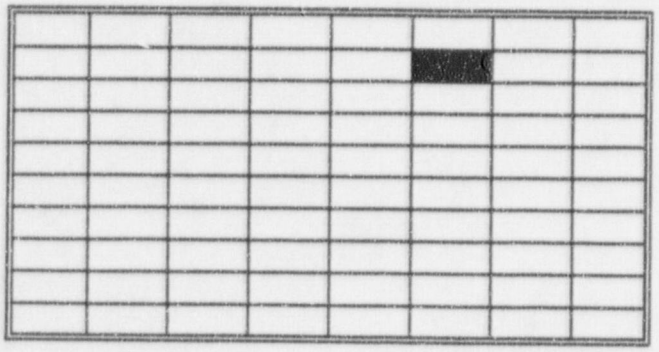
THIS IS INDICATIVE OF A FAILURE OF THE INVERTER, THE VITAL BUS SHOULD REMAIN ENERGIZED VIA THE TRANSFORMERS.

REFER TO STS FOR THE PROPER ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X21

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 0166

INDICATED CONDITION:

- INVERTER DC INPUT VOLTAGE IS < 135 VDC AS SENSED BY X7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SUPPLYING LOAD RED INDICATING LIGHT IS ON, LOCATED ON THE INVERTER.
- BATTERY SOURCE INPUT METER INDICATING > 50 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE LOSS OF AC INPUT TO THE INVERTER.
- REESTABLISH AC INPUT TO THE INVERTER.

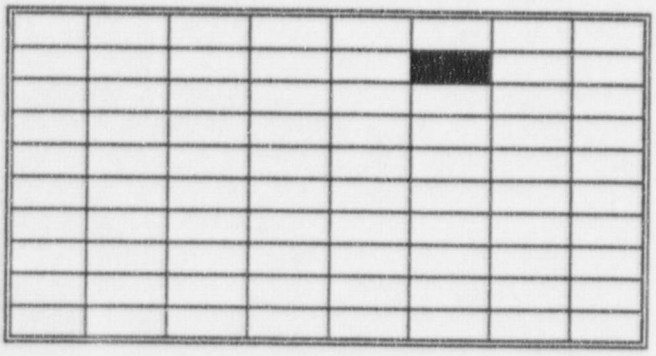
DISCUSSION:

THIS IS AN INDICATION OF THE DC INPUT SUPPORTING THE INVERTER OUTPUT. THE CAUSE COULD BE INTERNAL TO THE INVERTER, OR POSSIBLY A LOSS OFF AC INPUT TO INVERTER. REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X7

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 0171

INDICATED CONDITION:

- DC INPUT TO INVERTER IS > 200 AMPS DC AS SENSED BY X48.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT METER INDICATING > 200 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE OF THE HIGH LOAD ON THE INVERTER.
- REFER TO OP-700D.

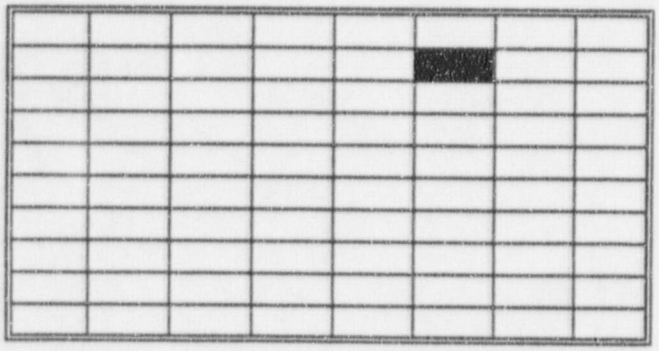
DISCUSSION:

- THIS IS INDICATIVE OF A PROBLEM WITH THE INVERTER, CONSIDERATION SHOULD BE GIVEN TO BYPASSING THE INVERTER. REFER TO OP-703.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X48

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 0176

INDICATED CONDITION:

- DC INPUT VOLTAGE FROM BATTERY IS **<105 VDC** AS SENSED BY RELAY X6.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY INPUT BREAKER TRIPPED LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF LOW INPUT VOLTAGE.
- RECLOSE DC INPUT BREAKER AFTER VOLTAGE IS RECOVERED.

DISCUSSION:

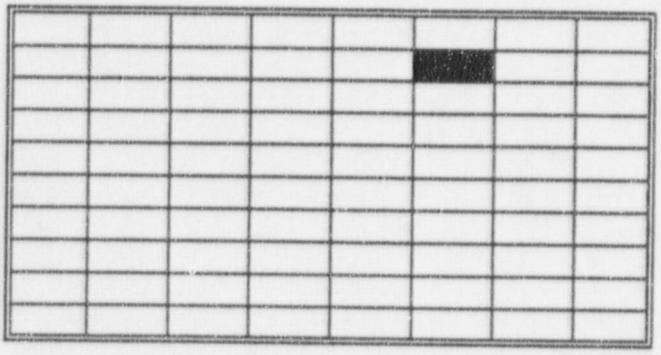
WITH A LOSS OF DC INPUT VOLTAGE THE INVERTER IS NOT ABLE TO FUNCTION DURING A LOSS OF AC INPUT POWER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X6

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 0181

INDICATED CONDITION:

- DC INPUT VOLTAGE TO INVERTER IS **>140 VDC** AS SENSED BY X16.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH OUTPUT VOLTAGE ON BATTERY CHARGERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE FOR VOLTAGE PROBLEMS.

DISCUSSION:

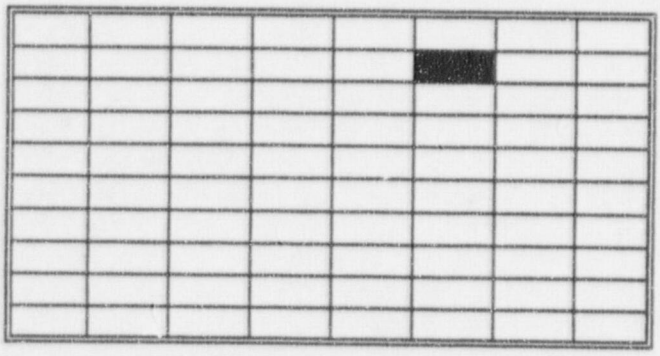
THIS CONDITION MAY CAUSE PROBLEMS WITH INVERTER RELIABILITY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X16

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 0191

INDICATED CONDITION:

- INVERT AC OUTPUT VOLTAGE IS < **114 VAC** AS SENSED BY RELAY X26.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATOR ON INVERTER FACE INDICATING < 114 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- TRANSFER VITAL BUS TO ALTERNATE SOURCE IF AVAILABLE.
- REFER TO OP-703.

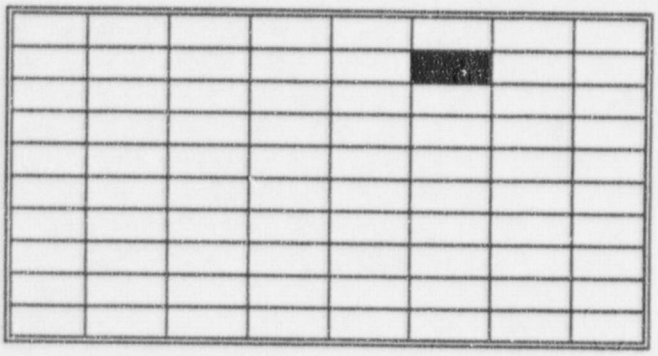
DISCUSSION:

LOW OUTPUT VOLTAGE RESULTS FROM EITHER EXCESSIVE LOAD ON THE INVERTER, OR FROM LOW INPUT VOLTAGE. THE INVERTER SHOULD TRANSFER TO THE ALTERNATE SOURCE ON A LOW VOLTAGE.

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X26

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-02	P-06-02



INVERTER C TROUBLE

EVENT POINT 1599

INDICATED CONDITION:

- "C" INVERTER FAN FAILURE

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- "C" INVERTER CABINET COOLING FAN(S) NOT RUNNING

OPERATOR ACTIONS FOR A VALID ALARM:

- CHECK TEMPERATURE OF "C" INVERTER
- NOTIFY ELECTRIC SHOP

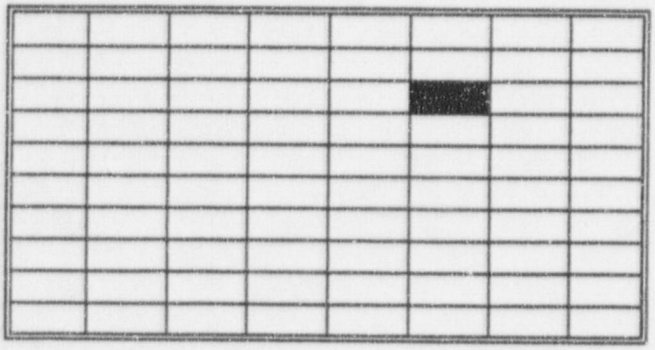
DISCUSSION:

EXCESSIVE TEMPERATURE COULD CAUSE LOSS OF INVERTER, CONSIDERATION SHOULD BE GIVEN TO SUPPLYING VITAL BUS POWER FROM ALTERNATE SOURCE PER OP-703

REFERENCES: 209-058 VB-03 AND 20-102649

SENSING ELEMENT: X9

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-03	P-06-03



INVERTER BYPASSED

EVENT POINT 1594

INDICATED CONDITION:

- VBXS-1A **AND/OR** VBXS-3A SUPPLYING "A" VITAL BUS POWER FROM ALTERNATE SOURCE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- ON THE AFFECTED VBXS: EITHER THE ALTERNATE SOURCE SUPPLYING LOAD RED INDICATING LIGHT IS ON, **OR** THE MANUAL TRANSFER SWITCH IS SELECTED TO ALTERNATE SOURCE.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-700D FOR AFFECTED LOADS.

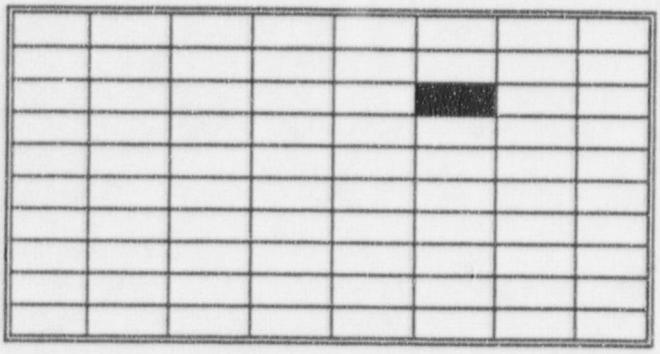
DISCUSSION:

THIS INDICATES THAT VBDP-3 AND/OR VBDP-8 ARE BEING SUPPLIED FROM THE ALTERNATE SOURCE. THE STATUS OF THE TRANSFER SWITCH MAY NOT BE OBVIOUS AS THE ISOLATION REQUIRES THE ALTERNATE SOURCE INPUT BREAKER TO BE OPEN WHEN TRANSFER IS COMPLETE TO PREVENT BACKFEED TO THE INVERTER.

REFERENCES: DRAWING 209-058 SHEETS VB-06, AND VB-11, VEND DWG 015C18517,

SENSING ELEMENT: RELAY 1102 INTERNAL TO VBXS

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-03	P-06-03



INVERTER BYPASSED

EVENT POINT 1595

INDICATED CONDITION:

- VBXS-1B **AND/OR** VBXS-3B SUPPLYING "B" VITAL BUS POWER FROM ALTERNATE SOURCE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- ON THE AFFECTED VBXS: EITHER THE ALTERNATE SOURCE SUPPLYING LOAD RED INDICATING LIGHT IS ON, OR THE MANUAL TRANSFER SWITCH IS SELECTED TO ALTERNATE SOURCE.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-700D FOR AFFECTED LOADS.

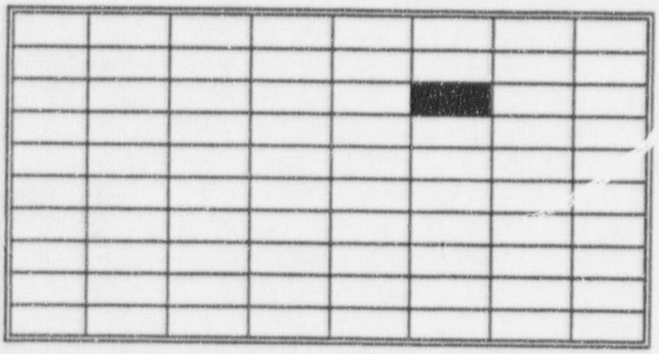
DISCUSSION:

THIS INDICATES THAT VBDP-4 AND/OR VBDP-10 ARE BEING SUPPLIED FROM THE ALTERNATE SOURCE. THE STATUS OF THE TRANSFER SWITCH MAY NOT BE OBVIOUS AS THE ISOLATION REQUIRES THE ALTERNATE SOURCE INPUT BREAKER TO BE OPEN WHEN TRANSFER IS COMPLETE TO PREVENT BACKFEED TO THE INVERTER.

REFERENCES: DRAWING 209-058 SHEETS VB-06, AND VB-11, VEND DWG 015C18517,

SENSING ELEMENT: RELAY 1102 INTERNAL TO VBXS

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-03	P-06-03



INVERTER BYPASSED

EVENT POINT 1596

INDICATED CONDITION:

- VBXS-1C **AND/OR** VBXS-3C SUPPLYING "C" VITAL BUS POWER FROM ALTERNATE SOURCE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- ON THE AFFECTED VBXS: EITHER THE ALTERNATE SOURCE SUPPLYING LOAD RED INDICATING LIGHT IS ON, **OR** THE MANUAL TRANSFER SWITCH IS SELECTED TO ALTERNATE SOURCE.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-700D FOR AFFECTED LOADS.

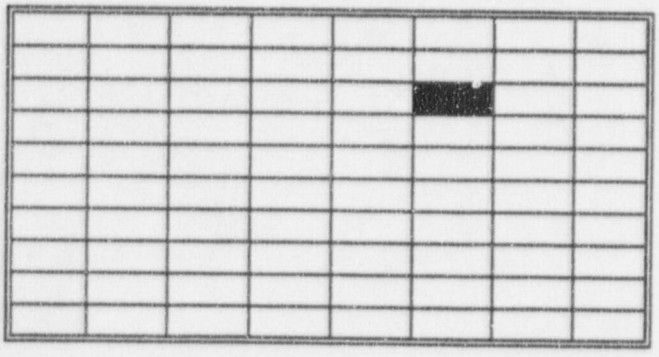
DISCUSSION:

THIS INDICATES THAT VBDP-5 AND/OR VBDP-9 ARE BEING SUPPLIED FROM THE ALTERNATE SOURCE. THE STATUS OF THE TRANSFER SWITCH MAY NOT BE OBVIOUS AS THE ISOLATION REQUIRES THE ALTERNATE SOURCE INPUT BREAKER TO BE OPEN WHEN TRANSFER IS COMPLETE TO PREVENT BACKFEED TO THE INVERTER.

REFERENCES: DRAWING 209-058 SHEETS VB-06, AND VB-11, VEND DWG 015C18517,

SENSING ELEMENT: RELAY 1102 INTERNAL TO VBXS

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-03	P-06-03



INVERTER BYPASSED

EVENT POINT 1597

INDICATED CONDITION:

- VBXS-1D **AND/OR** VBXS-3D SUPPLYING "D" VITAL BUS POWER FROM ALTERNATE SOURCE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- ON THE AFFECTED VBXS: EITHER THE ALTERNATE SOURCE SUPPLYING LOAD RED INDICATING LIGHT IS ON, **OR** THE MANUAL TRANSFER SWITCH IS SELECTED TO ALTERNATE SOURCE.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-700D FOR AFFECTED LOADS.

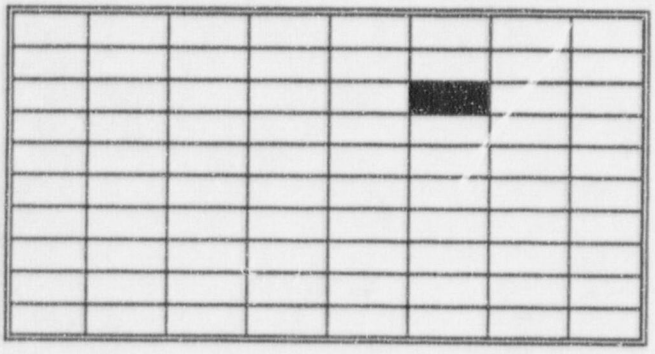
DISCUSSION:

THIS INDICATES THAT VBDP-6 AND/OR VBDP-11 ARE BEING SUPPLIED FROM THE ALTERNATE SOURCE. THE STATUS OF THE TRANSFER SWITCH MAY NOT BE OBVIOUS AS THE ISOLATION REQUIRES THE ALTERNATE SOURCE INPUT BREAKER TO BE OPEN WHEN TRANSFER IS COMPLETE TO PREVENT BACKFEED TO THE INVERTER.

REFERENCES: DRAWING 209-058 SHEETS VB-06, AND VB-11, VEND DWG 015C18517

SENSING ELEMENT: RELAY 1102 INTERNAL TO VBXS

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-03	P-06-03



INVERTER BYPASSED

EVENT POINT 1598

INDICATED CONDITION:

- VBXS-1E IS SUPPLYING LOADS WITH ALTERNATE SOURCE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NORMAL POWER SOURCE BREAKER IS OFF AND ALTERNATE POWER SOURCE BREAKER IS ON, LOCATED ON THE MANUAL TRANSFER SWITCH.

OPERATOR ACTIONS FOR A VALID ALARM:

- REFER TO OP-700D FOR AFFECTED LOADS.

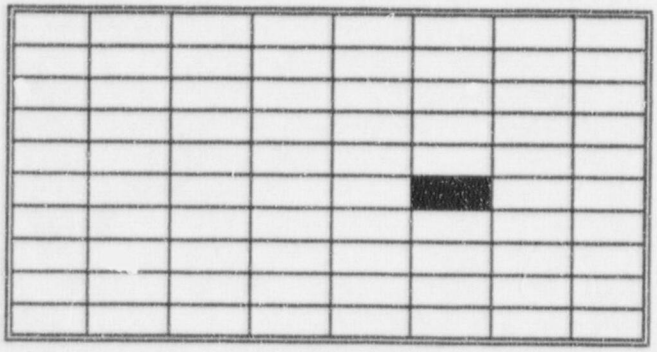
DISCUSSION:

THIS INDICATES THAT VBDP-7 IS BEING SUPPLIED FROM THE ALTERNATE SOURCE.

REFERENCES: DRAWING 209-058 SHEET VB-06

SENSING ELEMENT: AUXILIARY CONTACTS ON BREAKER

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-06	P-06-06



BATTERY A DISCHARGE HIGH

EVENT POINT 1944

INDICATED CONDITION:

- DPBA-1A1 IS DISCHARGING CURRENT **>50 AMPS** AS SENSED BY AMMETER 1 BUS 1 ALARM RELAY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPDP-1A LOCAL CURRENT METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BATTERY CHARGER IS ALIGNED TO THE BUS AND OPERATIONAL.

DISCUSSION:

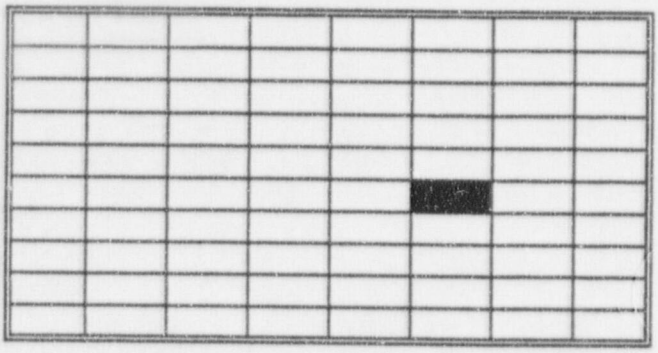
LOSS OF A BATTERY CHARGER OR DC LOADS ON BUS WITH >50 AMPS BEING SUPPLIED FORM THE BATTERY WILI CAUSE THIS ALARM TO OPERATE.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 209-023 SHEET DP-07

SENSING ELEMENT: AMMETER ALARM RELAY 1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-06-06	P-06-06



BATTERY A DISCHARGE HIGH

EVENT POINT 1945

INDICATED CONDITION:

- DPBA-1A2 IS DISCHARGING CURRENT >50 AMPS AS SENSED BY AMMETER 2 BUS 1 ALARM RELAY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPDP-1A LOCAL CURRENT METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BATTERY CHARGER IS ALIGNED TO THE BUS AND OPERATIONAL.

DISCUSSION:

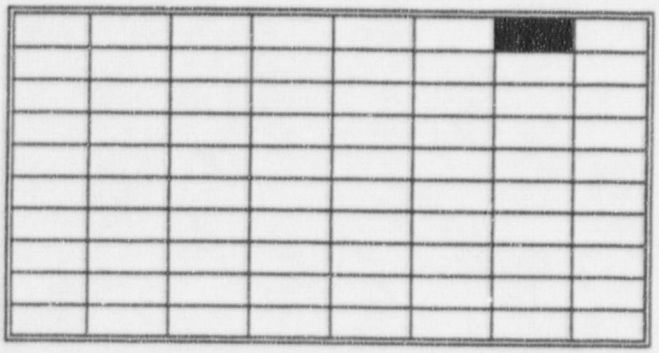
LOSS OF A BATTERY CHARGER OR DC LOADS ON BUS WITH >50 AMPS BEING SUPPLIED FORM THE BATTERY WILL CAUSE THIS ALARM TO OPERATE.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 209-023 SHEET DP-07

SENSING ELEMENT: AMMETER ALARM RELAY 2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-01	P-07-01



INVERTER D FAILURE

EVENT POINT 0162

INDICATED CONDITION:

- INVERTER HAS SUFFERED A LOSS OF AC INPUT **<365 VAC**
  AND
  A LOSS OF DC INPUT **< 105 VDC**

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- INVERTER POWER STATUS INDICATOR LIGHT IS OUT, LOCATED ON THE MCB.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT VBXS-1D HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-6 IS ENERGIZED.
- ENSURE THAT VBXS-3D HAS TRANSFERRED TO ALTERNATE SOURCE AND THAT VBDP-11 IS ENERGIZED.
- REFER TO OP-703.

DISCUSSION:

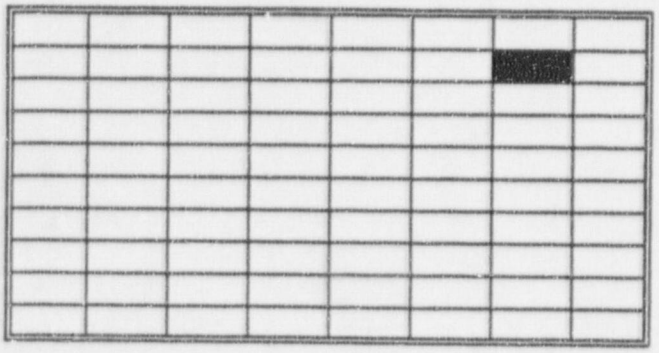
THIS IS INDICATIVE OF A FAILURE OF THE INVERTER, THE VITAL BUS SHOULD REMAIN ENERGIZED VIA THE TRANSFORMERS.

REFER TO STS FOR THE ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL11

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-02	P-07-02



INVERTER D TROUBLE

EVENT POINT 0167

INDICATED CONDITION:

- INVERTER DC INPUT AMPERAGE IS > **50 AMPS** AS SENSED BY RL2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT RED INDICATING LIGHT IS ON LOCATED ON THE INVERTER.
- BATTERY SOURCE INPUT METER VB-003-II1 INDICATING > 50 AMPS ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE LOSS OF AC INPUT TO THE INVERTER.
- REESTABLISH AC INPUT TO THE INVERTER.

DISCUSSION:

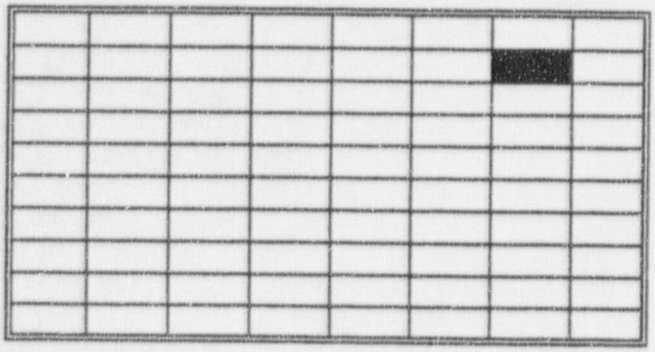
THIS IS AN INDICATION OF THE DC INPUT SUPPORTING THE INVERTER OUTPUT. THE CAUSE COULD BE INTERNAL TO THE INVERTER, OR POSSIBLY A LOSS OFF AC INPUT TO INVERTER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-02	P-07-02



INVERTER D TROUBLE

EVENT POINT 0172

INDICATED CONDITION:

- DC INPUT TO INVERTER IS > **168 AMPS DC** AS SENSED BY RL3.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT METER VB-003-II1 INDICATING >168 AMPS LOCALLY ON THE INVERTER.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE OF THE HIGH LOAD ON THE INVERTER.
- REFER TO OP-700D.

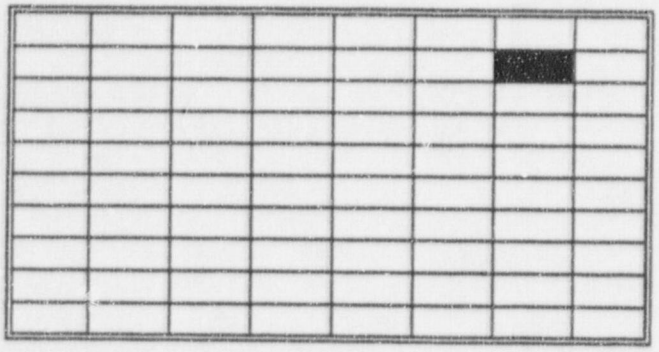
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE INVERTER, CONSIDERATION SHOULD BE GIVEN TO BYPASSING THE INVERTER. REFER TO OP-703.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL3

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-02	P-07-02



INVERTER D TROUBLE

EVENT POINT 0177

INDICATED CONDITION:

- DC INPUT VOLTAGE FROM BATTERY IS **<105 VDC** AS SENSED BY RELAY RL6.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY INPUT BREAKER TRIPPED LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF LOW INPUT VOLTAGE.
- RECLOSE DC INPUT BREAKER AFTER VOLTAGE IS RECOVERED.

DISCUSSION:

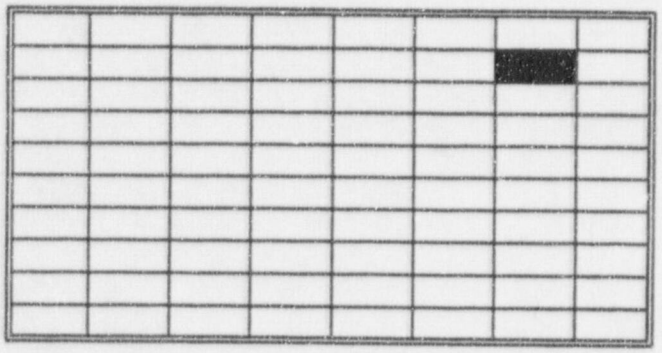
WITH A LOSS OF DC INPUT VOLTAGE THE INVERTER IS NOT ABLE TO FUNCTION DURING A LOSS OF AC INPUT POWER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL6

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-02	P-07-02



INVERTER D TROUBLE

EVENT POINT 0182

INDICATED CONDITION:

- DC INPUT VOLTAGE TO INVERTER IS **>140 VDC** AS SENSED BY RL7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH OUTPUT VOLTAGE ON BATTERY CHARGERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE FOR VOLTAGE PROBLEMS.

DISCUSSION:

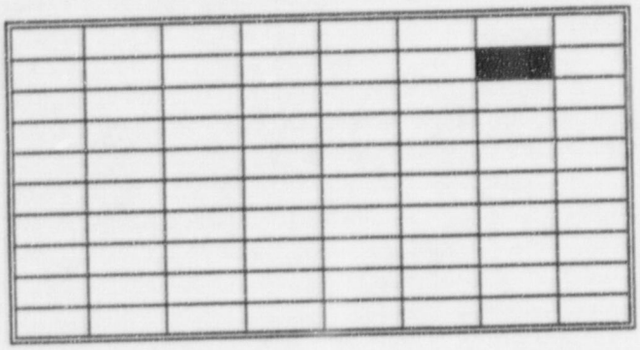
THIS CONDITION MAY CAUSE PROBLEMS WITH INVERTER RELIABILITY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL7

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-02	P-07-02



INVERTER D TROUBLE

EVENT POINT 0192

INDICATED CONDITION:

- INVERT AC OUTPUT VOLTAGE IS < 114 VAC AS SENSED BY RELAY RL1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATOR VB-006-II ON INVERTER FACE INDICATING < 114 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- TRANSFER VITAL BUS TO ALTERNATE SOURCE IF AVAILABLE.
- REFER TO OP-703.

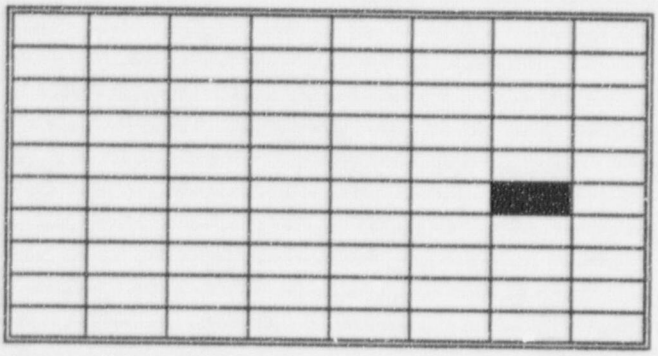
DISCUSSION:

LOW OUTPUT VOLTAGE RESULTS FROM EITHER EXCESSIVE LOAD ON THE INVERTER, OR FROM LOW INPUT VOLTAGE. THE INVERTER SHOULD TRANSFER TO THE ALTERNATE SOURCE ON A LOW VOLTAGE.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-06	P-07-06



BATTERY B DISCHARGE HIGH

EVENT POINT 1946

INDICATED CONDITION:

- DPBA-1B1 IS DISCHARGING CURRENT **>50 AMPS** AS SENSED BY AMMETER 1 BUS 2 ALARM RELAY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPDP-1B LOCAL CURRENT METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BATTERY CHARGER IS ALIGNED TO THE BUS AND OPERATIONAL.

DISCUSSION:

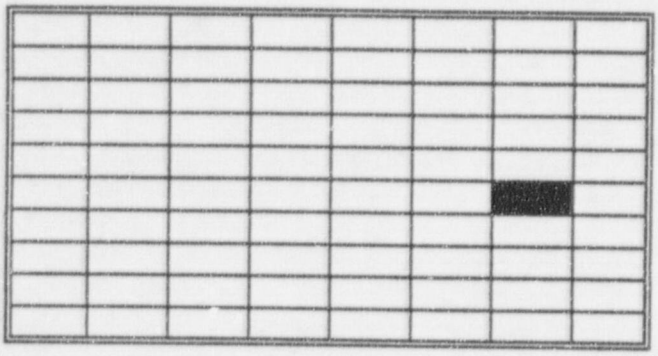
LOSS OF A BATTERY CHARGER OR DC LOADS ON BUS WITH >50 AMPS BEING SUPPLIED FORM THE BATTERY WILL CAUSE THIS ALARM TO OPERATE.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 209-023 SHEET DP-07

SENSING ELEMENT: AMMETER ALARM RELAY 1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-06	P-07-06



BATTERY B DISCHARGE HIGH

EVENT POINT 1947

INDICATED CONDITION:

- DPBA-1B2 IS DISCHARGING CURRENT **>50 AMPS** AS SENSED BY AMMETER 2 BUS 2 ALARM RELAY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPDP-1B LOCAL CURRENT METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BATTERY CHARGER IS ALIGNED TO THE BUS AND OPERATIONAL.

DISCUSSION:

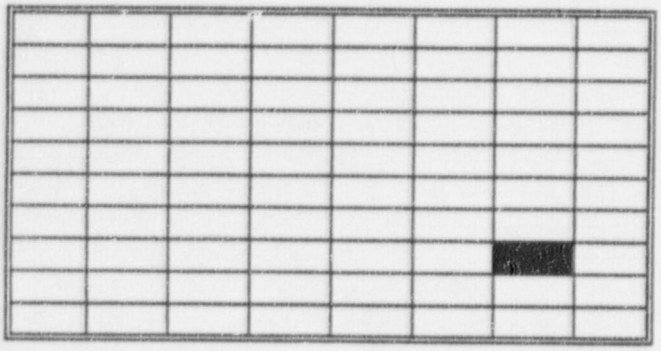
LOSS OF A BATTERY CHARGER OR DC LOADS ON BUS WITH >50 AMPS BEING SUPPLIED FORM THE BATTERY WILL CAUSE THIS ALARM TO OPERATE.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 209-023 SHEET DP-07

SENSING ELEMENT: AMMETER ALARM RELAY 2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 0888

INDICATED CONDITION:

- DPBC-1I AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON 480V REACTOR AUX BUS 3A < 430 VAC.
- VOLTAGE INDICATED ON 480V REACTOR AUX BUS 3B < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RETURN NORMAL CHARGER TO SERVICE IF AVAILABLE.
- REFER TO OP-705.

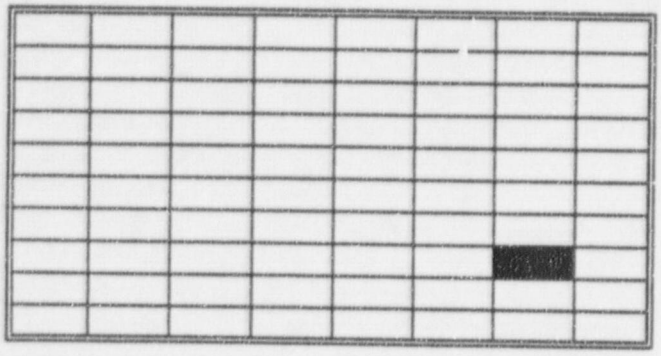
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE NORMAL CHARGER SHOULD BE RETURNED TO SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: DRAWING 209-023 SHEET DP-10, KBC-2475-130, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1570

INDICATED CONDITION:

- DPBC-1A AC VOLTAGE IS < 108 VAC AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-037.
- VOLTAGE INDICATED ON 480V ES BUS 3A < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

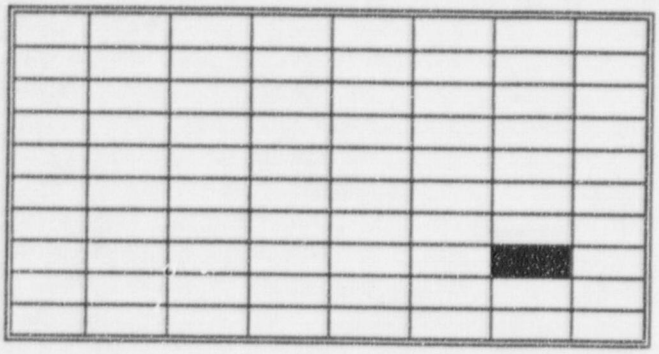
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1571

INDICATED CONDITION:

- DPBC-1B AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-038.
- VOLTAGE INDICATED ON 480V ES BUS 3B < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

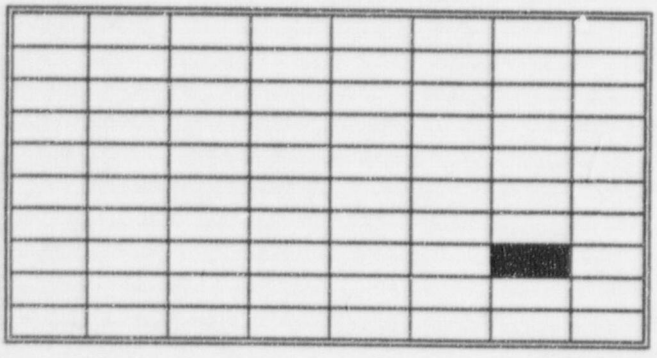
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1572

INDICATED CONDITION:

- DPBC-1C AC VOLTAGE IS < 108 VAC AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-039.
- VOLTAGE INDICATED ON 480V ES BUS 3A < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

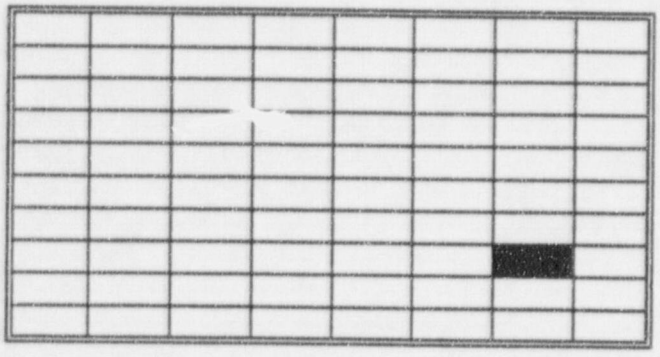
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1573

INDICATED CONDITION:

- DPBC-1D AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-040.
- VOLTAGE INDICATED ON 480V ES BUS 3B < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

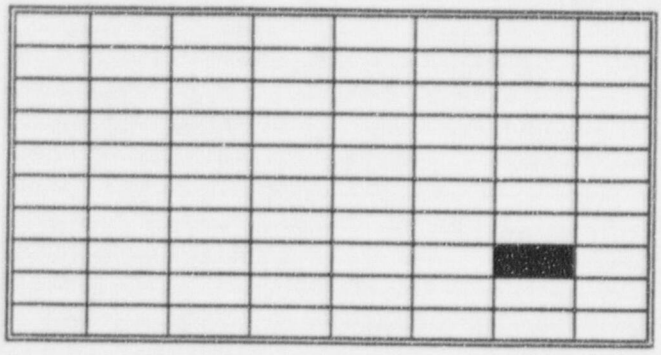
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1574

INDICATED CONDITION:

- DPBC-1E AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-041.
- VOLTAGE INDICATED ON 480V ES BUS 3A < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE THE NORMAL DUTY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

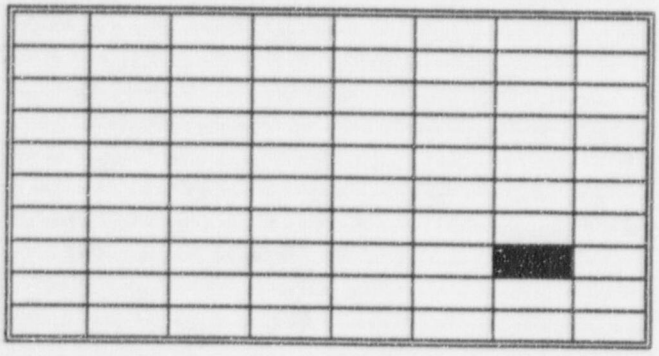
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE NORMAL DUTY CHARGER SHOULD BE RESTORED TO SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1575

INDICATED CONDITION:

- DPBC-1F AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-042.
- VOLTAGE INDICATED ON 480V ES BUS 3B < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE THE NORMAL DUTY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

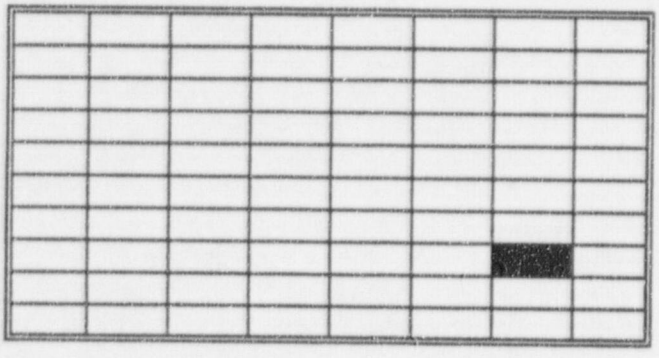
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE NORMAL DUTY CHARGER SHOULD BE RESTORED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1576

INDICATED CONDITION:

- DPBC-1A DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE LVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1A FACE < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR

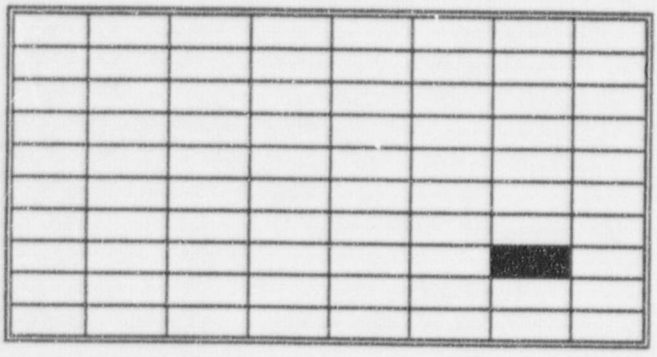
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF RAISING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1577

INDICATED CONDITION:

- DPBC-1B DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1B FACE < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR

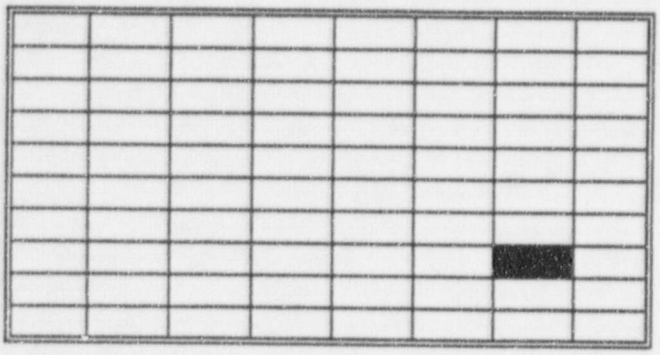
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF RAISING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1578

INDICATED CONDITION:

- DPBC-1C DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE LVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1C < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR

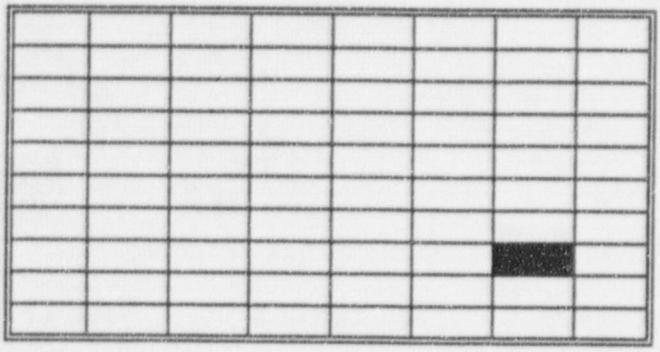
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF RAISING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1579

INDICATED CONDITION:

- DPBC-1D DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE LVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1D < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR.

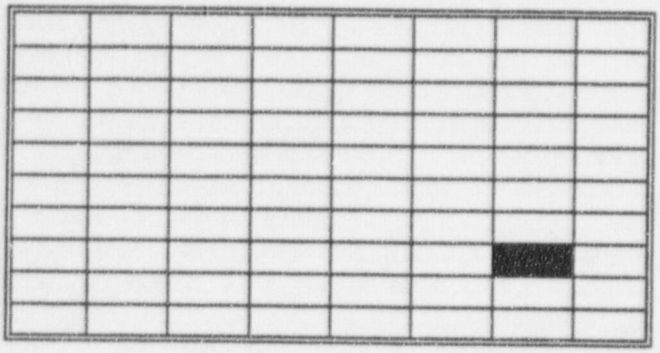
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF RAISING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1580

INDICATED CONDITION:

- DPBC-1E DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE LVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1E < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- RETURN NORMAL CHARGER TO SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SUPERVISOR.

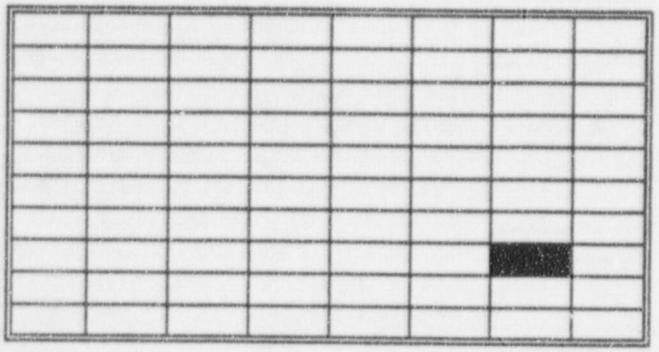
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1581

INDICATED CONDITION:

- DPBC-1F DC VOLTAGE < **124.4 VDC** AS SENSED BY K5L RELAY ON THE LVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON DPBC-1F < 130 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- RAISE BUS VOLTAGE.
- RETURN NORMAL CHARGER TO SERVICE IF AVAILABLE.
- REFER TO OP-70E.
- NOTIFY ELECTRICAL SHOP SUPERVISOR.

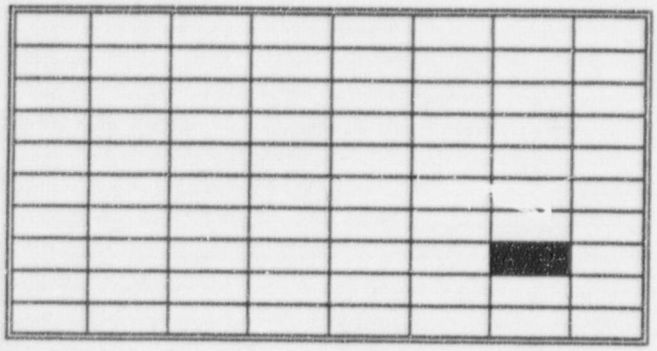
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: LVA w/TD BOARD, K5L RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1790

INDICATED CONDITION:

- DPBC-1G AC VOLTAGE IS < **108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATED ON 480V REACTOR AUX BUS 3A < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

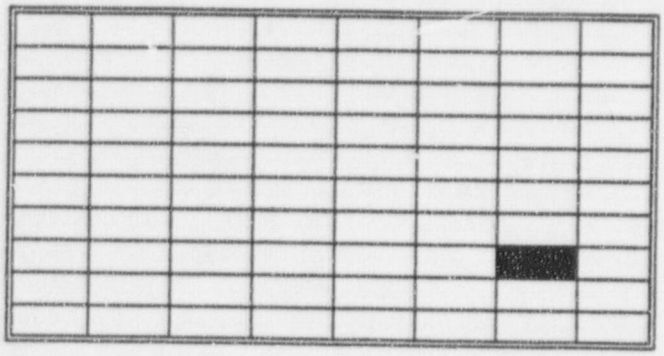
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: DRAWING 209-023 SHEET DP-10, KBC-2475-130, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1793

INDICATED CONDITION:

- DPBC-1H AC VOLTAGE IS **<108 VAC** AS SENSED BY K1 RELAY ON ACPFAR CARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-043.
- VOLTAGE INDICATED ON 480V ES BUS 3B < 430 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- PLACE STANDBY CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.

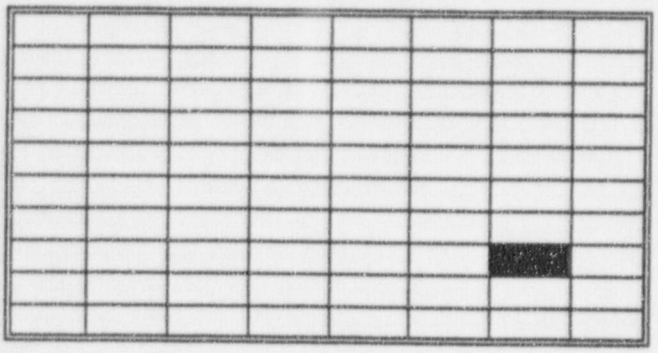
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE POWER FEED TO THE CHARGER. A LOW BUS VOLTAGE ON THE AC POWER INPUT TO THE CHARGER MAY BE THE PROBLEM. IF THIS IS NOT THE PROBLEM THEN THE SWING CHARGER SHOULD BE PLACED IN SERVICE UNTIL THE PROBLEM CAN BE RESOLVED.

REFERENCES: VENDOR DRAWING KBC-2475-130, C&D MANUAL #33

SENSING ELEMENT: ACPFAR-K1 RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1938

INDICATED CONDITION:

- DPBC-1A DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1A DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- PLACE THE SWING CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR

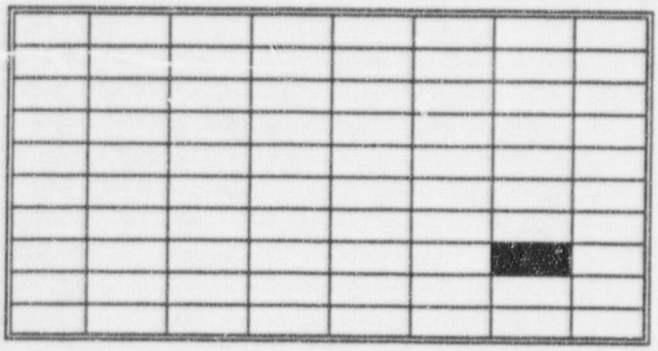
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1939

INDICATED CONDITION:

- DPBC-1B DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1B DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- PLACE THE SWING CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR

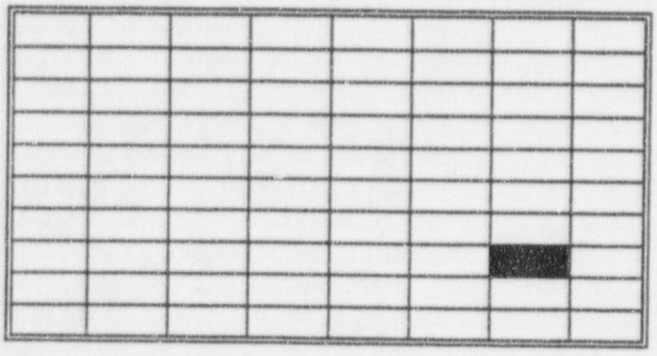
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1940

INDICATED CONDITION:

- DPBC-1C DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1C DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- PLACE THE SWING CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY THE ELECTRICAL SHOP SUPERVISOR.

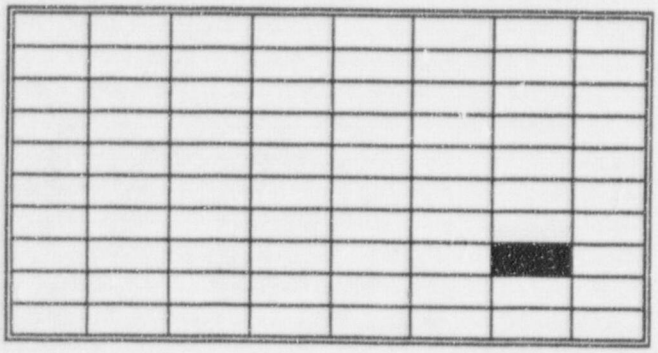
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1941

INDICATED CONDITION:

- DPBC-1D DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1D DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- PLACE THE SWING CHARGER IN SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY ELECTRICAL SHOP SUPERVISOR.

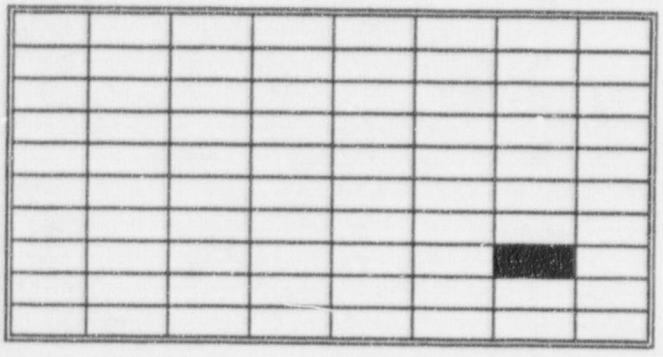
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE SWING CHARGER SHOULD BE PLACED IN SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1942

INDICATED CONDITION:

- DPBC-1E DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1E DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- RETURN THE NORMAL CHARGER TO SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY THE ELECTRICAL SHOP SUPERVISOR

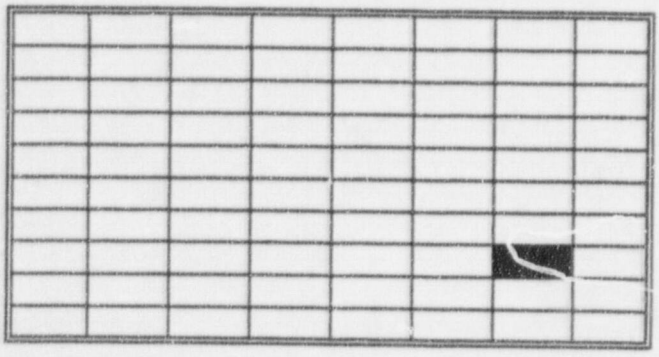
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE NORMAL CHARGER SHOULD BE RETURNED TO SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1943

INDICATED CONDITION:

- DPBC-1F DC VOLTAGE > **139.6 VDC** AS SENSED BY K5H RELAY ON THE HVA w/TD CONTROL BOARD

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPBC-1F DC OUTPUT VOLTAGE > 139 VDC.

OPERATOR ACTIONS FOR A VALID ALARM:

- LOWER BUS VOLTAGE.
- RETURN THE NORMAL CHARGER TO SERVICE IF AVAILABLE.
- REFER TO OP-705.
- NOTIFY THE ELECTRICAL SHOP SUPERVISOR.

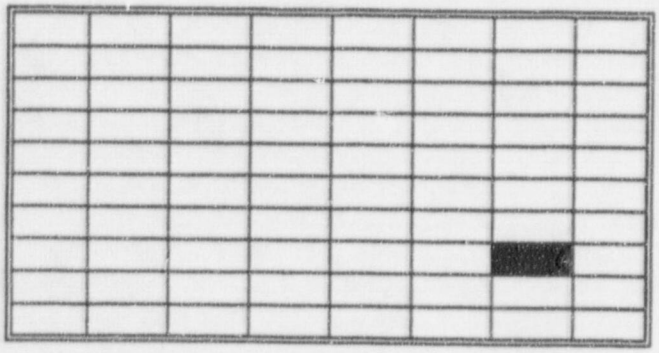
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE OUTPUT OF THE CHARGER. IF LOWERING INPUT VOLTAGE TO THE CHARGER DOES NOT CORRECT THE PROBLEM THE NORMAL CHARGER SHOULD BE RETURNED TO SERVICE. IF VOLTAGE REMAINS HIGH OR CONTINUES TO INCREASE THE CHARGER MAY EXPERIENCE A HIGH VOLTAGE SHUTDOWN.

REFERENCES: VENDOR DRAWING MBC-4766, PM-141, C&D MANUAL #33

SENSING ELEMENT: HVA w/TD BOARD, K5H RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1948

INDICATED CONDITION:

- DPBC-1A HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO **>145 VDC** AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE SWING CHARGER IN SERVICE.
- REFER TO OP-705.

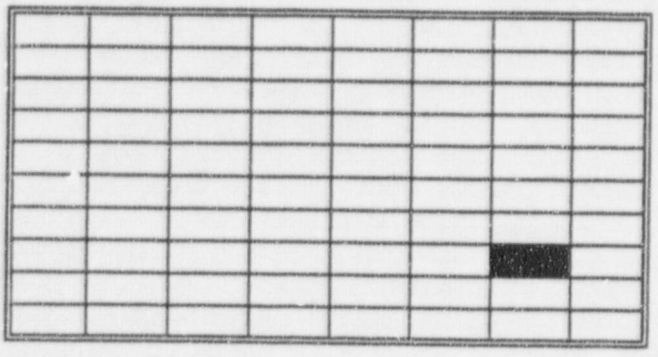
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1949

INDICATED CONDITION:

- DPBC-1B HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO **>145 VDC** AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1B.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE SWING CHARGER IN SERVICE.
- REFER TO OP-705.

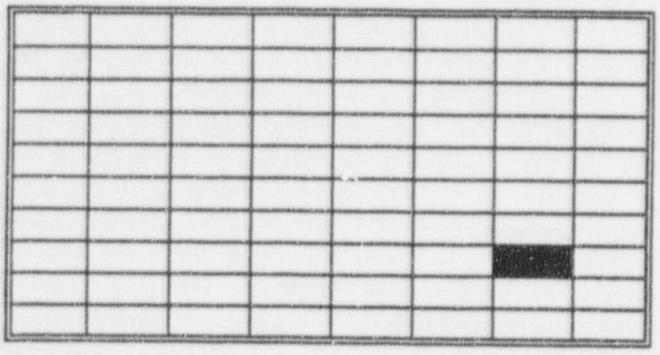
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1950

INDICATED CONDITION:

- DPBC-1C HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO **>145 VDC** AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1C.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE SWING CHARGER IN SERVICE.
- REFER TO OP-705.

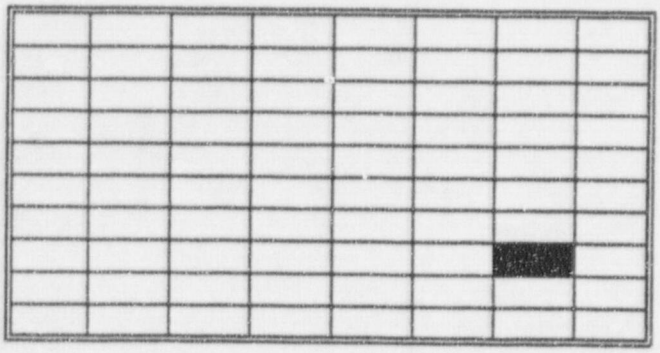
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1951

INDICATED CONDITION:

- DPBC-1D HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO >145 VDC AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1D.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE SWING CHARGER IN SERVICE.
- REFER TO OP-705.

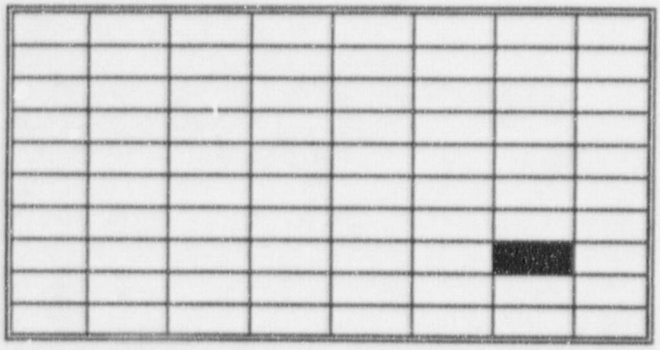
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1952

INDICATED CONDITION:

- DPBC-1E HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO >145 VDC AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1E.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE NORMAL DUTY CHARGER IN SERVICE.
- REFER TO OP-705.

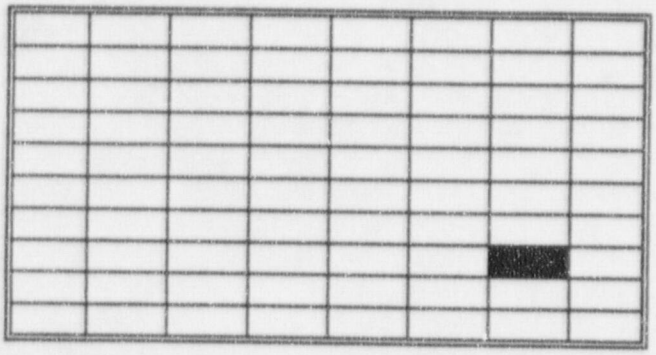
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-08	P-07-08



BATTERY CHARGER TROUBLE

EVENT POINT 1953

INDICATED CONDITION:

- DPBC-1F HIGH VOLTAGE SHUT DOWN RELAY HAS ACTUATED DUE TO >145 VDC AS SENSED BY HVSDR.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- NO VOLTAGE OR AMPERAGE INDICATIONS ON DPBC-1F.

OPERATOR ACTIONS FOR A VALID ALARM:

- MINIMIZE DC LOADS ON AFFECTED BATTERY BUS.
- PLACE THE NORMAL DUTY CHARGER IN SERVICE.
- REFER TO OP-705.

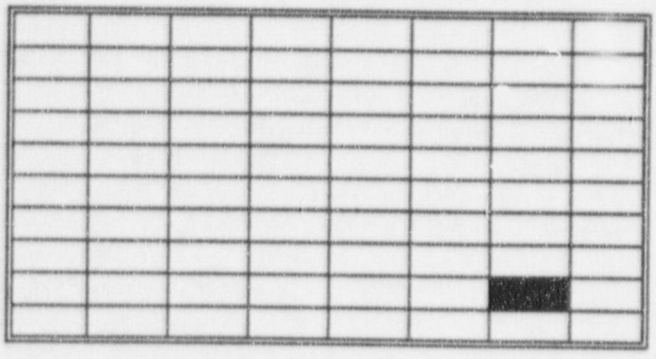
DISCUSSION:

THIS CONDITION CAN OCCUR WHEN THERE IS A SEVERE LOAD ON THE BATTERY, AND IT IS ABRUPTLY INTERRUPTED. RECOVERY FROM HIGH VOLTAGE SHUT DOWN TO THE BATTERY CHARGER REQUIRES THAT THE MANUAL RESET BE DEPRESSED IT IS LOCATED ON THE HVSDR CARD INSIDE THE CHARGER CABINET.

REFERENCES: VENDOR DRAWING KBC-2475-130, PM-141, C&D MANUAL # 33

SENSING ELEMENT: HVSDR RELAY

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-09	P-07-09



BATTERY GROUND

EVENT POINT 1190

INDICATED CONDITION:

- A GROUND <20 KOHMS AS SENSED BY DPGD-1C HAS BEEN DETECTED ON DPBA-1C.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-215.
- LOCAL READOUT ON DPGD-1C.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTE ANY EQUIPMENT RECENTLY STARTED OR STOPPED.
- NOTIFY ELECTRICIANS TO BEGIN TROUBLESHOOTING.

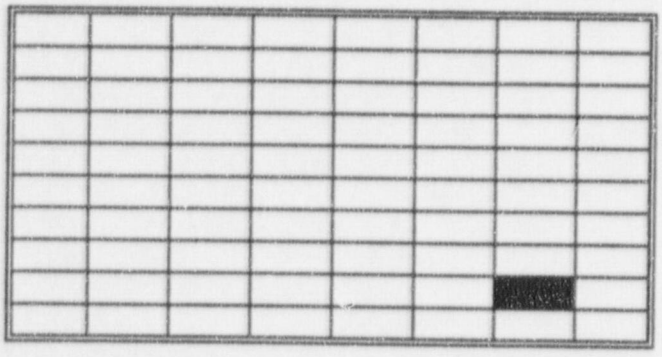
DISCUSSION:

A GROUND ON THE DC POWER SYSTEM IS AN UNDESIRABLE CONDITION WHICH COULD LEAD TO FURTHER DEGRADATION. EVERY EFFORT SHOULD BE MADE TO ISOLATE THE GROUND AND REPAIR IT AS SOON AS PRACTICAL.

REFERENCES: DRAWING 209-023 SHEET DP-013

SENSING ELEMENT: DPGD-1C

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-09	P-07-09



BATTERY GROUND

EVENT POINT 1582

INDICATED CONDITION:

- A GROUND **<20 KOHMS** AS SENSED BY DPGD-1A HAS BEEN DETECTED ON DPBA-1A.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E-213.
- LOCAL READOUT ON DPGD-1A.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTE ANY EQUIPMENT RECENTLY STARTED OR STOPPED.
- NOTIFY ELECTRICIANS TO BEGIN TROUBLESHOOTING.

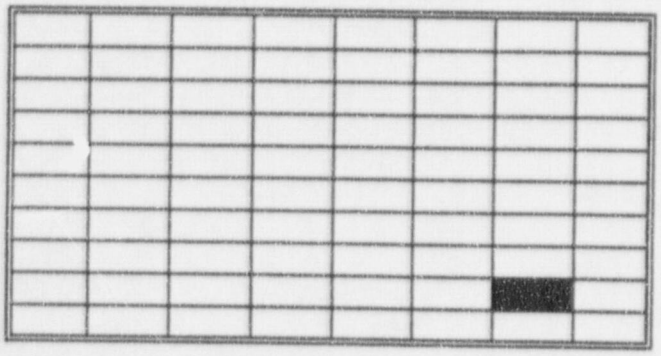
DISCUSSION:

A GROUND ON THE DC POWER SYSTEM IS AN UNDESIRABLE CONDITION WHICH COULD LEAD TO FURTHER DEGRADATION. EVERY EFFORT SHOULD BE MADE TO ISOLATE THE GROUND AND REPAIR IT AS SOON AS PRACTICAL.

REFERENCES: DRAWING 209-023 SHEET DP-009

SENSING ELEMENT: DPGD-1A

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-07-09	P-07-09



BATTERY GROUND

EVENT POINT 1583

INDICATED CONDITION:

- A GROUND **<20 KOHMS** AS SENSED BY DPGD-1B HAS BEEN DETECTED ON DPBA-1B.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- COMPUTER POINT E 214.
- LOCAL READOUT ON DPGD-1B.

OPERATOR ACTIONS FOR A VALID ALARM:

- NOTE ANY EQUIPMENT RECENTLY STARTED OR STOPPED.
- NOTIFY ELECTRICIANS TO BEGIN TROUBLESHOOTING.

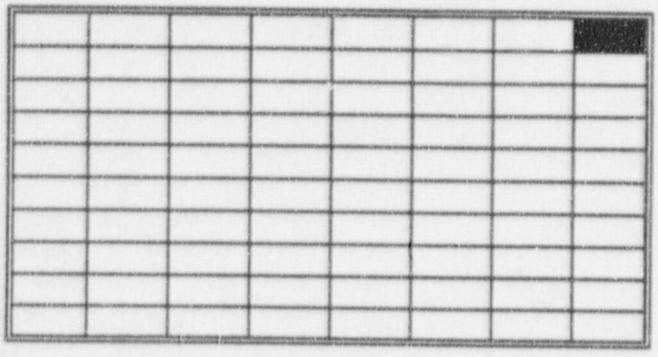
DISCUSSION:

A GROUND ON THE DC POWER SYSTEM IS AN UNDESIRABLE CONDITION WHICH COULD LEAD TO FURTHER DEGRADATION. EVERY EFFORT SHOULD BE MADE TO ISOLATE THE GROUND AND REPAIR IT AS SOON AS PRACTICAL.

REFERENCES: DRAWING 209-023 SHEET DP-009

SENSING ELEMENT: DPGD-1B

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-01	P-08-01



INVERTER E FAILURE

EVENT POINT 0163

INDICATED CONDITION:

- LOSS OF INVERTER AC INPUT < 365 VAC
  AND
  A LOSS OF DC INPUT < 105 VDC

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- PLANT COMPUTER DEENERGIZED.

OPERATOR ACTIONS FOR A VALID ALARM:

- MANUALLY TRANSFER VBDP-7 TO ALTERNATE POWER SOURCE.
- REFER TO OP-703.

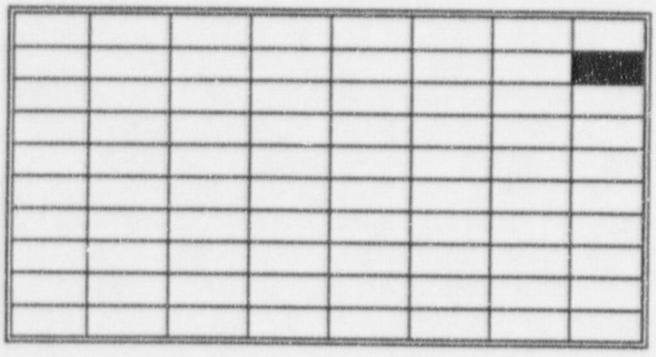
DISCUSSION:

LOSS OF THE INVERTER WILL CAUSE ALARMS ON THE ICS PANEL DUE TO THE NNI-Y ALTERNATE POWER SOURCE BEING FROM VBDP-7, AND THE TRANSFER SWITCH BEING A MANUAL TRANSFER SWITCH.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL11

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-02	P-08-02



INVERTER E TROUBLE

EVENT POINT 0168

INDICATED CONDITION:

- INVERTER DC INPUT AMPERAGE IS > 50 AMPS AS SENSED BY RL2.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT, RED INDICATING LIGHT ON LOCALLY.
- BATTERY SOURCE INPUT METER VB-005-III INDICATING > 50 AMPS LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE LOSS OF AC INPUT TO THE INVERTER.
- REESTABLISH AC INPUT TO THE INVERTER.

DISCUSSION:

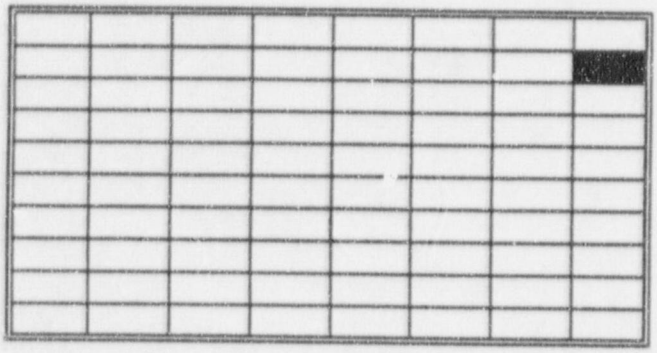
THIS IS AN INDICATION OF THE DC INPUT SUPPORTING THE INVERTER OUTPUT. THE CAUSE COULD BE INTERNAL TO THE INVERTER, OR POSSIBLY A LOSS OFF AC INPUT TO INVERTER.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL2

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-02	P-08-02



INVERTER E TROUBLE

EVENT POINT 0173

INDICATED CONDITION:

- DC INPUT TO INVERTER IS > 168 AMPS DC AS SENSED BY RL3.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY SOURCE INPUT METER VB-005-III INDICATING >168 AMPS LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE THE CAUSE OF THE HIGH LOAD ON THE INVERTER.
- REFER TO OP-700D.

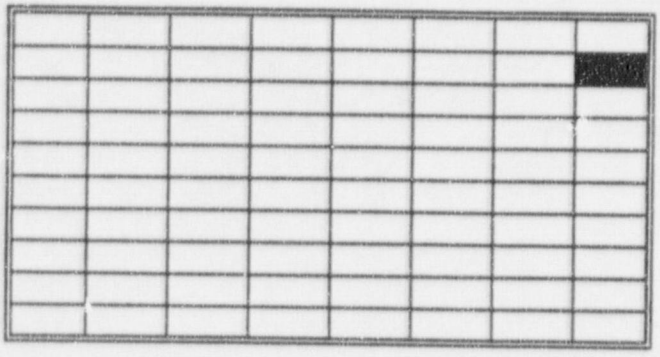
DISCUSSION:

THIS IS INDICATIVE OF A PROBLEM WITH THE INVERTER, CONSIDERATION SHOULD BE GIVEN TO BYPASSING THE INVERTER. REFER TO OP-703.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL3

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-02	F-08-02



INVERTER E TROUBLE

EVENT POINT 0178

INDICATED CONDITION:

- DC INPUT VOLTAGE FROM BATTERY IS **<105 VDC** AS SENSED BY RELAY RL6.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- BATTERY INPUT BREAKER TRIPPED LOCALLY.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE OF LOW INPUT VOLTAGE.
- RECLOSE DC INPUT BREAKER AFTER VOLTAGE IS RECOVERED.

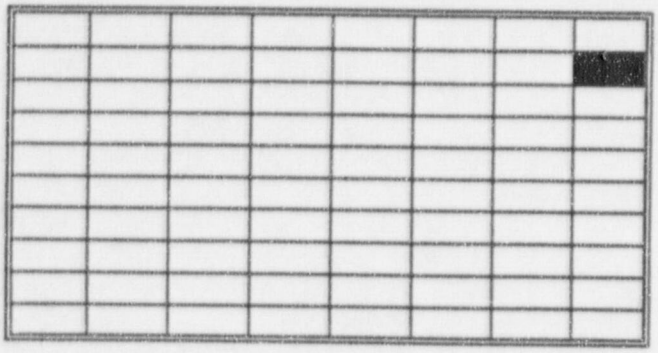
DISCUSSION:

WITH A LOSS OF DC INPUT VOLTAGE THE INVERTER IS NOT ABLE TO FUNCTION DURING A LOSS OF AC INPUT POWER. REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL6

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-02	P-08-02



INVERTER E TROUBLE

EVENT POINT 0183

INDICATED CONDITION:

- DC INPUT VOLTAGE TO INVERTER IS **>140 VDC** AS SENSED BY RL7.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- HIGH OUTPUT VOLTAGE ON BATTERY CHARGERS.

OPERATOR ACTIONS FOR A VALID ALARM:

- INVESTIGATE CAUSE FOR VOLTAGE PROBLEMS.

DISCUSSION:

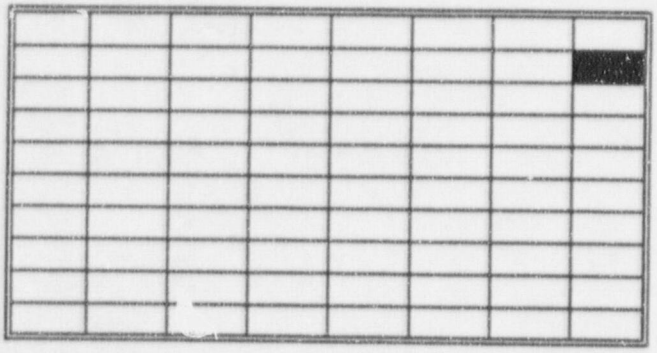
THIS CONDITION MAY CAUSE PROBLEMS WITH INVERTER RELIABILITY.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL7

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-02	P-08-02



INVERTER E TROUBLE

EVENT POINT 0193

INDICATED CONDITION:

- INVERT AC OUTPUT VOLTAGE IS < 114 VAC AS SENSED BY RELAY RL1.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- VOLTAGE INDICATOR VB-006-II ON INVERTER FACE INDICATING < 114 VAC.

OPERATOR ACTIONS FOR A VALID ALARM:

- TRANSFER VITAL BUS TO ALTERNATE SOURCE IF AVAILABLE.
- REFER TO OP-703.

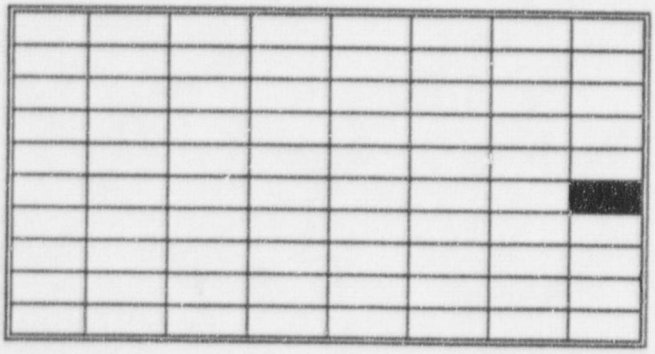
DISCUSSION:

LOW OUTPUT VOLTAGE RESULTS FROM EITHER EXCESSIVE LOAD ON THE INVERTER, OR FROM LOW INPUT VOLTAGE. THE INVERTER SHOULD TRANSFER TO THE ALTERNATE SOURCE ON A LOW VOLTAGE.

REFERENCES: DRAWING 204-058 SHEET A, 2D6589 30 KVA, AND 2D6590 15 KVA

SENSING ELEMENT: RL1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-06	P-08-06



BATTERY C DISCHARGE HIGH

EVENT POINT 0920

INDICATED CONDITION:

- DPBA-1C IS DISCHARGING CURRENT >10 **AMPS** AS SENSED BY AMMETER 1 BUS 3 ALARM RELAY.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- DPDP-1C LOCAL CURRENT METER.

OPERATOR ACTIONS FOR A VALID ALARM:

- VERIFY BATTERY CHARGER IS ALIGNED TO THE BUS AND OPERATIONAL.

DISCUSSION:

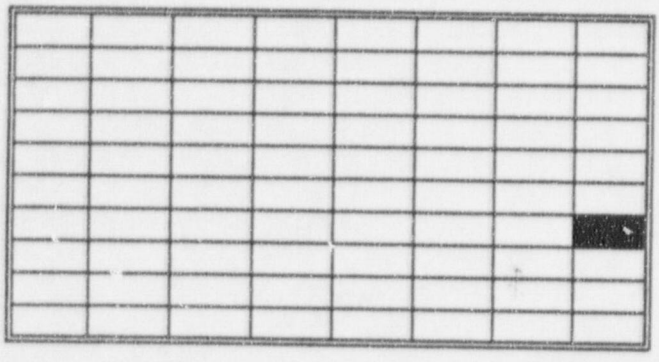
LOSS OF A BATTERY CHARGER, OR DC LOADS ON BUS WITH >10 AMPS BEING SUPPLIED FROM THE BATTERY WILL CAUSE THIS ALARM TO OPERATE.

REFER TO STS FOR ADMINISTRATIVE REQUIREMENTS.

REFERENCES: DRAWING 209-023 SHEET DP-13

SENSING ELEMENT: AMMETER ALARM RELAY 1

SSF-A1 ANNUNCIATOR RESPONSE	SSF-A1-08-07	P-08-07



BATTERY C BREAKER OPEN

EVENT POINT 1992

INDICATED CONDITION:

- DPDP-1C CUBICLE 1 DISCONNECT FOR DPBA-1C IS OPEN AS SENSED BY AN AUXILIARY SWITCH IN THE CUBICLE.

REDUNDANT INDICATION WHICH WILL VERIFY ALARM:

- LOCAL DISCONNECT POSITION VERIFICATION.

OPERATOR ACTIONS FOR A VALID ALARM:

- ENSURE THAT BATTERY CHARGERS ARE IN SERVICE FOR BOTH BANKS OF DPBA-1C
- INVESTIGATE THE CAUSE FOR THE DISCONNECT BEING OPEN.
- RECLOSE DPBA-1C DISCONNECT AS SOON AS POSSIBLE.

DISCUSSION:

THE BATTERY DISCONNECT CAN BE OPENED WITH THE BATTERY CHARGERS IN SERVICE AND STILL MAINTAIN DC POWER TO ALL LOADS. THE LOSS OF AC POWER WITH THIS DISCONNECT OPEN WOULD CAUSE A COMPLETE LOSS OF ALL NON-1E DC LOADS.

REFERENCES: DRAWING 209-023 SHEET DP-013

SENSING ELEMENT: BREAKER AUXILIARY CONTACTS