DOCUMENT REVISION DISTRIBUTION SHEET - UNIT II
OFF NORMAL & EMERGENCY OPER. PROCEDURE

DOCUMENT TITLE PLANT ANNUNCIATOR SUMMARY - UNIT 2

DOCUMENT FILE NUMBER 2-0030131

DOCUMENT REVISION NUMBER 2

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131
REVISION 2

1.0 TITLE:

Plant Annunciator Summary - Unit 2

2.0 REVIEW AND APPROVAL:

Review by Facility Review Group February 22, 1982 & March 17, 1983

Approved by C. M. Wethy Plant Manager March 17, 1983

Revision 2 Reviewed by FRG 8-24 & 9/2 19 83

Approved by [signature] Plant Manager 10-20- 1983

3.0 PURPOSE AND DISCUSSION:

This procedure provides an informative guide to operations personnel for resolving alarm conditions that are received on an annunciator panel in the St. Lucie Unit No. 1 Control Center and local annunciator panels throughout the plant.

The actions listed are intended to be a guide in response to single annunciators, and are not intended to be a substitute for good judgment based on thorough understanding of plant conditions and equipment.

In cases where many annunciators are lighted simultaneously, operators are expected to respond to the root cause of the condition and maintain the unit in a safe condition in accordance with applicable off-normal and emergency procedures. Such action will not necessarily correspond to that on this list.

4.0 SYMPTOMS:

Annunciator windows received.

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PLANT ANNUNCIATOR SUMMARY

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5.0 INSTRUCTIONS:

5.1 Annunciators are categorized on the following sheets by vertical rows from left to right.

5.2 Control Room Annunciator Panels are listed as follows:

(From right to left on control board)

PANEL LETTER	NAME	NO. OF SHEETS
1. A-	Station Auxiliaries B	10 Sheets
2. B-	Station Auxiliaries A	10 Sheets
3. C-	Generator & Transformers	10 Sheets
4. D-	Turbine & Generator Cooling	10 Sheets
5. E-	Circulating & Intatke Cooling Water	8 Sheets
6. F-	Heater Drain & Station Miscellaneous	8 Sheets
7. G-	Condensate & Feedwater	8 Sheets
8. H-	Reactor Coolant System	8 Sheets
9. J-	Reactor Coolant Pumps	8 Sheets
10. K-	C.E.A.	8 Sheets
11. L-	Reactor Protection	8 Sheets
12. M-	Chemical & Volume Control	8 Sheets
13. N-	Waste Management	8 Sheets
14. P-	Engineered Safeguards	10 Sheets
15. Q-	Engineered Safeguards	10 Sheets
16. R-	Engineered Safeguards	10 Sheets
17. S-	Engineered Safeguards	10 Sheets
18. T-	Containment HVAC	6 Sheets
19. U-	Containment HVAC	6 Sheets
20. V-	Shield Bldg/CNL Room HVAC	6 Sheets
21. W-	Control Room/RAB HVAC	6 Sheets
22. K-	Miscellaneous HVAC	6 Sheets
23. LA	Miscellaneous HVAC	6 Sheets
24. LB	Miscellaneous HVAC	6 Sheets
25. LC	Miscellaneous Aux Board	6 Sheets
26. LR	Line Repeat Panel	6 Sheets

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PLANT ANNUNCIATOR SUMMARY

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6.0 REFERENCES:

Listed in "Sensing Element Location" column for each annunciator.

7.0 RECORDS REQUIRED:

Normal Log Entries

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OFF-NORMAL OPERATING PROCEDURE 2000E 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGINAL ROOM INDICATION WHEN WORKED ON *PRESENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
START-UP XFMR 2B / UNIT/AUX TRIP A-1	1. Start-up XFMR 2B Lockout relay has been actuated by differential current, isolating the transformer. 2.(A) 2A06D GCB: B064 Indicates green. (B) XFMR 4.16-6.9KV output BKR 2-20101, 2-20102 indicate green. (C) If Load Harbor on S/U XFMR: Do Not trip on "B" elect. buses and loss of normal "B" Equip.	1. XFMR Lockout: (A) Both S/U XFMR 2A03D GCBs Open - (4E-41). (B) S/U XFMR output FDR BKR to 2B4-4.16, 2B4-6.9 KV buses open. (C) Possible loss of offsite power to "B" side 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030130.	≥ 40E Current Unbalance	74 B58 Diff. Current Relay Trip Alarm Relay --- 2B2 4160V	GAD's 902 \ 903
START-UP XFMR 2B FAULT PRESS TRIP A-11	1. S/U XFMR 2B Lockout relay has been actuated by high rate of pressure increase indicating fault. (Isolates XFMR) 2.(A) 2A06D GCBs B04-B04 Indicate green (B) XFMR 4.16-6.9 KV Output BKR 2-20101, 2-20102 indicate green. (C) If Load Harbor on S/U XFMR: Do not trip on "B" elect. buses and loss of normal "B" equipment.	1. S/U XFMR Lockout: (A) Both S/U XFMR 2A03D GCBs Open (4E-41). (B) S/U XFMR output FDR BKR to 2B4-4.16, 2B4-6.9 KV buses open. 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030130.	90-150 only sudden pressure	74SP Fault Press Relay --- 4160 V bus 2B2 (Later Ltr) (89 on 2B2)	GAD 903
START-UP XFMR 2B ALARM PANEL A-41	1. Local alarm at XFMR; Indicates damaged condition to 2B S/U XFMR. 2.(A) Temperature Recorder TR-22-31. (B) Transformer superstr	1. No Auto-Action (Alarm only) 2.(A) Have Operator check XFMR Alarm Panel at XFMR. (B) Refer to S/U XFMR Off Normal Procedure No. 2-0030130.	LABOR	74-X-1, 2, 3, 4 SGX 63-V Alarm Relays 2B S/U XFMR Cabinet	GAD 903
START-UP XFMR 2B 4.16 KV GROUND A-31	1. Indicates Presence of Ground on "B" S/U XFMR Secondary 4160V windings, 4KV bus, or connections to the bus. (Alarm only) 2. [illegible]	1. NONE -(Alarm only) 2.(A) Inspect 4160V bus ground fault relay targets. If ground current may have not been reset to clear local target. (B) Notify Electrical Dept. Immediately (C) Systematically remove bus loads to locate ground.	< 1.6 OHMS to Ground	64-SBB-2 4160 - Ground Relay --- BUS on 4160 V Bus 2B2 89 on 2B2	GAD 903
4KV BUS 2B2 BREAKER TRIP A-41	1.(A) Any S/U XFMR Feeder BKR or B/T bus tie trip - open from overload. (B) or, breaker has been racked out. (C) or, breaker test failure. 2.(A) Breaker BKR Lights - green. (B) Loss of "B" emergency power (Refer to Loss of Power).	1.(A) 2B2 4160V bus breaker BKR open - possible loss of offsite pwr. to "B" elect. sides. (B) Possible Turbine runback and Rx trip from loss of power. 2.(A) Refer to S/U or Aux. XFMR Off Normal Procedure. (B) If Rx trip, refer to Rx Trip Procedure No. 2-0120131.	LABOR	74/908 74/915	GAD 907 915
4KV BUS 2B2 SYNC. SW. A-41	1. Synch BKR 2-20102 Handle Switch in Outside [illegible] Room. 2. Indicates lights for BKR 2-20102.	1. No control - Offsite Electric Dist from Control Rm. 2.(A) Have Operator Investigate BKR 2-20102. (B) Refer to 0030131, 91, to "DISABL" If applicable	NO/ESS.	SS/1X6 Isolate Switch --- Outside SYNC Room on BKR 2-20102	GAD 907

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION/INDICATION WHICH VERIFY OR CLEARS TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SEQUENCE OF EVENTS NUMBER & LOCATION	REFERENCE
STA/CP-UP XFMR 2B 240KV GROUND TRIP A-2	1. S/U XFMR 2B lock-out relay has been actuated by 240KV side ground isolating the transformer. 2.(A) 2A0 CBs 8064-8A4 indicate - green (B) XFMR 4.16-6.9 KV output BKR 2-03701, 2-03502 - indicate - green. (C) If and Harbor on S/U XFMR, No volt sy on "B" short, burn out loss of transfer "B" equip	1. Transformer Lockout: (A) Both S/U XFMR 2A0 CBs open - (4E-4A) (B) XFMR output BKR 03K to 2B4-4.16, 2B1-6.9 KV buses open. (C) Possible loss of off-site power. 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030131		74-HSB	GAD 903
STA/CP-UP XFMR 2B LOCKOUT RELAY FAILURE A-12	1. Loss of lock-out protection for the 2B S/U XFMR due to loss of DC power to lock-out relay. 2. NOTE - unless trip signal for XFMR is generated, then the BKR will not trip.	1. NONE 2.(A) Immediately investigate cause; contact Elect. Dept. and monitor for XFMR trip condition. (B) Refer to S/U XFMR OFF-Normal Procedure No. 2-0030131.	"0" DC Volts	74 - STB	GAD 903
4KV SWGR TIES 2B2-2B1 OVRLD TRIP A-22	1.(A) Tie BKR have opened; possible loss of power to the 2B1 4160V bus. (B) OK, overload condition has opened BKR. 2.(A) Tie BKR - green indicator lights. (B) Loss of reading 2B1 Electrical Equipment.	1. Loss of power to 2AB 4160V 2.(A) Ensure other back up equipment reading and Inv. Engine cause for overload. (B) Strip all loads from bus. (C) Notify Electrical Department.		74/935 74-1-937	GAD-935 GAD-937
STA/CP-UP XFMR 2B 6.9KV GROUND A-32	1. Ground Fault on 6.9 KV bus (1) of the 2B S/U XFMR (alarm only). 2. NOTE	1. NONE - (Alarm only) 2.(A) Inspect 6.9 KV Bus Ground Relay Target* ground current may have not been enough to drop local target. (B) Notify Electrical Department Immediately. (C) System Notify reserve bus loads to locate ground.		64/STB-1	GAD 903
6.9KV SWGR 2B1 FEEDERS OVRLD TRIP A-42	1.(A) Feeder BKR to the 6.9KV 2B1 bus have opened from overload condition. (B) OK, breakers have been reset. 2.(A) Feeder Breakers - green lights (B) Zero voltage - 2B1 6.9KV bus (C) Loss of "B" PWR and 2B1 PA2 Bus	1.(A) Loss of power to 2B1 6.9KV bus. (B) Possible Turbine Runback, Rx TRIP 2.(A) If Rx trips, use Rx Trip Procedure No. 2-0030131. (B) Open all breakers on bus. (C) Notify Electrical Department		74/935 74/913	GAD-935 GAD-913
4KV SWGR TIES 2B2/2B1 CROSS TIE/ SS TRIP. A-52	1. Indication SWGR ties will not close due to loss of DC control power or 2B1B/T3R SW. to TRIP position. 2. Possible loss of BKR indicate lights on BKR.	1. NONE 2. Return BKR/T3R SW. to NORMAL. If normal, then notify Electrical Department.		74-2/937 SS/Ind 935 SS/Ind 937	GAD-935

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PLANT ANNUNCIATOR SUMMARY

PANEL/BAY: P/B1, A VERTICAL COLUMN: 3

WINDOW TITLE	1. INDICATED CONDITION 2. OBSERVE ROOM INDICATION WHICH VERIFY OR PERTAIN TO THE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
6.9KV SWGR 2B1 OVERCURRENT TRIP A-3	1. Indicates 2B1 6.9KV SWGR Feeder BKR have opened, from a differential current trip. 2.(A) Feeder BKR lights green. (B) No voltage 6.9KV 2B1 bus. (C) Loss of B UNIT, 2B1, 2A1 BKR's.	1. Determination of the 6.9 2B1 bus loss of all running equipment on the bus. 2.(A) If Rx trips, see OP 2-0030130. (B) Open all BKR on bus. (C) Notify Electrical Department	LATER	86/2B1	GAI-905
6KV SWGR 2B2 OVERCURRENT TRIP A-11	1. Indicates feeder BKR to the bus have opened from a differential current trip. 2.(A) Feeder BKR lights green. (B) Zero voltage on 2B2 4160V bus, not any other buses being fed from 2B2. (C) Loss of "B" condensate pump, BKR lights green.	1. Determination of the 4160V 2B2 (A) Bus - Loss of all equipment fed (B) Possible backbus runback, Rx trip. 2.(A) Stand diesel picking up essential bus. (B) If Rx trips, see OP 2-0030130. (C) Notify Electrical Department	LATER	86/2B2	GAI-947
6.9KV SWGR 2B1 /4KV SWGR 2B2 UNDERVOLTAGE A-23	1. Indicates low voltage present on 2B1 6.9KV and/or 2B2 4160V bus. 2. Respective bus voltmeters reading low voltage	1. ERR 2.(A) Check plant electrical parameters to Alternate cause for low voltage. (B) Check station condition by calling Division Dispatcher. (C) Contact Electrical Department. (D) Check for possible XMER problem.	LATER	27X1/2B1 27X1/2B2	GAI-952
BLANK A-31					
LOW AC PRESS BUS 1B/2B-1/2A INVERTER TROUBLE R A-51	1. Indicates problem with 2A1 Inverter, 2B Instrument bus, 2B-1 Instrument bus, Static Inverter 2B, or PP 3A7 2. Possible loss of 1 channel of ESFAS, RPS, RI's, and half of Rx Trip BKRs open.	1.(A) Possible loss of "B" channel ESFAS, RPS, RIs, & Rx trip BK, Q2416. (B) If 2 bus, AC buses are lost; Rx trip will occur. 2.(A) If Rx Trip occurs; see OP 2-0030130. (B) Put Inst Bus auto xmfr bypass XMR. (C) Check Refl Lsh IND RA-RAB-13 (D) Notify Electrical Department	VARIOUS	RA-RAB-13 RA-RAB-29 Refl Lsh Panels (1) South wall of B Cable Spreading Rm. (2) Wall behind B Battery Charger	GAI-1010 GAI-1013
LOW AC PRESS BUS 1B/2B-1 INVERTER TROUBLE A-51	1. Indicates problem with 2B1 Inverter, 2B1 Instrument bus, or 2B1-1 Instrument bus 2. Loss of 1 channel of ESFAS, RPS, RI's, and half Rx Trip BKRs open. Possible loss of Static Inverter.	1.(A) Possible loss of "B" channel ESFAS, RPS, RIs, Rx trip BK. (B) If 2 bus, AC buses are lost; Rx trip will occur. 2.(A) If Rx Trip occurs, see OP 2-0030130. (B) Put Inst Bus auto xmfr bypass XMR. (C) Check Refl Lsh IND RA-RAB-15 (D) Notify Electrical Department	VARIOUS	RA-RAB-15 Refl Lsh Panel South Wall of B Cable Spreading Room	GAI-1010 GAI-1009

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ANNUNCIATOR PANEL A VERTICAL COLUMN 4

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PERTINENT TO ABOVE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
6.9KV/4KV STAR 2B1/2B2/2B3 DIFF CURRENT RELAYS FAILURE B A-5	1. Loss of Lockout Protection for one or more Elect. Buses Noted. Indicates loss of relay DC Control power. 2. NOTE, unless trip signal is present from one of the indicated relays; then the trip, 86/4XX may trip	1. NONE 2.(A) Contact electrical department. (B) Investigate local relay targets. (C) Monitor Switchgear parameters closely to Electrical trip condition	0" DC VOLTS	RA-RAB-1 Reflash Panel South Wall of B Cable Spreading Room	OAP-1553
4KV STAR 2B1 DELTA CURRENT TRIP A-14	1. Indicates Feeder BRK tripped due to differential bus current. 2.(A) Feeder BRK green light. (B) Loss of voltage on 2B1 4160V bus (C) Loss of 2B1 Bus loads; RDF, CCW, CVCS. (D) Start-Up of 2B diesel generator.	1. 2B1 loads trip, diesel starts up, and loads will resequence onto 2.(A) Determine cause for bus trip (B) Notify Electrical Department (C) Ensure essential equipment running.	LATER	86/2B1	OAP-305
START UP XFMR 2B 6.9KV/4KV BUS FAILURE A-24	1. Indicates BRK Trip signal was sent to BRK to open, or BRK failed to open. 2. Respective BRK lights 6.9KV/ 2A05?, 4160V; 2B05B - Red or out.	1. Protective action to isolate XFMR is Inoperative or failed. 2. Notify System Protection via handiate contact of Operation Dispatcher.	N/A	74/BRK	OAP-903 903
SEA 480V XFMR 2B5 ALARM B A-34	LATER	LATER	LATER	Reflash Panel Wall Behind 2B5 480V Load Center	OAP-1711
4KV STAR THRU 2B3/2AB OVLD TRIP A-44	1.(A) Indicates 2AB has overload condition (B) Or, the breakers are tripped out. 2.(A) The BRK lights green. (B) Loss of 2AB 4160V loads - dewatering, RDF, CCW. (C) Zero voltage on 2AB 4160V bus.	1.(A) 2B3-2AB tie breakers open (B) Possible loss of voltage on 2AB 2.(A) Contact Electrical Dept. to investigate cause for 2AB bus overload condition.	LATER	74-1/939 74-1/941	OAP-939 OAP-941
4KV STAR THRU 2B3/2AB CABLE FAIL/ SS ISOL A-54	1.(A) Indicates 2B3 to 2AB 4160V BUS fail to close or local BRKR/ISOL SW. to Isolate position. (B) Loss of BRK Indicator lights.	1. NONE 2.(A) Have Operator verify BRKR/ISOL Switch in NORMAL position. (B) If in NORMAL, notify Electrical Dept.	BRKR/ISOL Switches in "ISOL."	74-2 SS/Isol/939 74-2 SS/Isol/941 Fail Circuit Rly/ Isolate Switches	OAP-939 OAP-941

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ANNUNCIATOR PANEL A VERTICAL COLUMN 5

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. ADDITIONAL HIGH INDICATION WHICH VERIFIES OR PROVIDE TROUBLE	1. AUTO ACTION 2. OPERATOR CHECK - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
4KV SWGR 2AB LOAD SHED RLY FAILURE A-5	1. Load shed relay has failed for 4160V SWGR 2AB, indicates relay DC control power is lost. 2. NONE	1. NONE 2. Notify Electrical Department.	"0" DC VOLTS	74-4	GAD-951
4KV SWGR 2B3 LOAD SHED RLY FAILURE A-15	1. Load shed relay has failed for 4160V SWGR 2B3, indicates relay DC control power is lost. 2. NONE	1. NONE 2. Notify Electrical Department.	"0" DC VOLTS	74-4	GAD-950
S/U SWGR 2B TIE SWGR 2B4 BUS BKR OVERLOAD TRIP A-25	LATER	LATER	LATER	74	GAD-1286
480V SWGR 2B5 VOLT $\leq$ 90% / GROUND A-35	LATER	LATER	LATER	27X1 64, 2-3 27 IX/2B5	GAD-1711 GAD-1357
480V SWGR 2B5 LOAD SHED RLY FAILURE A-45	1. Load shed relay has failed for 480V bus 2B5, indicates loss of relay DC control power. 2. NONE	1. NONE 2. Notify electrical department	0" DC Volts	74	GAD-1711
4KV TIE SWGR 2B5 TO BUS 2 FEED BUS BREAKER FAIL A-55	1. 2B5 480V bus lockout relay has failed and will not operate, due to loss of DC power. 2. NONE.	1. NONE 2. Notify System Protection Dept., via contact of Division of Operations.	"0" DC VOLTS	74B-2B4	GAD-1289

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A , VERTICAL COLUMN 6

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. ORDINAL AND INDICATION USED TO VERIFY OR PROVIDE TRIGGER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIESEL DG 2B BREAKER FAILURE A-6	1. The D/G output BRK has been given an automatic or control sw. close signal, and has failed to close. 2. D/G output BRK - green or off.	1. NONE 2.(A) Attempt re-close breaker (B) Check BRK locally, notify Electrical Department if necessary.		74-1	OAP-963
DIESEL DG 2B OVR ENGINE START FAILURE A-10	1. One of 2 diesel engines is either not started, or not carrying sufficient load. 2. Inability to attain full diesel load.	1. NONE 2.(A) Check exhaust temperatures locally (B) Attempt to balance diesels with raise/lower buttons. (C) If 1 diesel is motoring, shut D/G set down.	>200° Exhaust A/B Diesel Temp. Diff.	EDCX ENGINE EXHAUST TEMP DETECTORS A/B DIESEL EXHAUSTS	OAP-972
DIESEL DG 2B TRIP / SS TRB. A-7b	1. Diesel lockout mechanism has tripped & locked out or DGX/TRX switches have been put to the "ISOLATE" position. 2. Possible diesel trip if lockout actuates.	1. Possible diesel trip or loss of remote control capability. 2.(A) Determine cause for the alarm locally. (B) Return DGX/TRX SW to NORM. if applicable.	Any of Multiple (1) DG/TRX Switch In TRX.	86 SWGR, SS-1 SS-3, BR SS/1616	OAP-1129
DIESEL DG 2B LOCAL ALARM A-7c	1. Local alarm relay has energized at Diesel control panel, or from diesel fire alarm. 2. DRAK, unless diesel trips.	1. Possible diesel trip or fire sprinkler activation. 2. Determine cause for alarm locally.		76b6	OAP-1129
DIESEL GEN 2B BUS VOLT < 90%	1. 2B1 4160V Bus voltage has dropped to < 3744 volts 2. Voltmeter on RRB-2B1	1. If volts continues to decay, undervoltage 2.(A) Increase excitation if on diesel.	Volts	2-1 2T1R 2B3	OAP-1B3J
DIESEL DG 2B BREAKER START FAILURE / SS TRB. A-5b	1.(A) No DC power on 2B DC bus available to start diesel. 2. D/G start and/or BRK control switch inoperative; lights out.	1. D/G will not start or close onto bus from Control Room. 2.(A) Investigate DC power loss. (B) Rack in D/G output BRK if applicable. (C) Return output BRK DGX1/TRX SW. to "NORM" if applicable.	Batt BRK Open DGX1/TRX. TRX. 4160V BRK Racked Out	74/3 SS/1B6. 74/3 LATCH	OAP-963 OAP-1B02

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL COLUMN 7

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. OPERATOR BOARD INDICATION THAT VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STA SERV SEAL 2B1 TROUBLE R A-7	1.(A) Sudden cooling pressure decrease, (B) OR, Winding temp. high, or high-high, (C) OR, Pressure relief device actuation. 2. Loss of XFMR - green RCS lights.	1. Possible Station service XFMR trip. 2. Check SPT locally.	(A) LATER (B) HI-112°C HI-HI 177°C Others LATER	RA-T-7 Refrish Panel N. Wall In Front 2A1 480 V Load Center	C40-988
480V SWGR 2B1 FEEDERS OVRLD TRIP A-17	1.(A) 2B1 SS XFMR 480V feeder BK overload trip, racked out, or fuses blown. (B) OR; 2B1 SS XFMR 480V output BK overload trip or racked out. 2. XFMR BK lights out or green, loss of volts and loads on 2B 480V load Center.	1. Loss of 2B1 480V bus and operating loads on the bus. 2. If not from RMS-9417; Investigate cause locally.	LATER	74/947 R/976 LATER	C40-947 C40-976
480V SWGR 2B1 UNDERVOLTAGE / GROUND A-17	1.(A) Ground on 2B1 SS XFMR low side. (B) Ground in loads fed from 2B1 480V bus. (C) Undervolt qy condition in SWGR (later) 2. Possible alarms A7, A17 (Lot of possible loss of SWGR)	1. LATER 2.(A) Isolate loads to identify ground (B) Check 2B1 SS XFMR for ground.	LATER	27, 64 LATER	C40-988
480V SWGR 2B1/2B2/2B5 BUS TIES OVRLD TRIP A-17	1. Overload trip of any BUS tie BK on 2B1, 2B2, or 2B5 480V buses. 2. Possible indication by loss of BUS equipment which tripped.	1. BUS trip open on overloaded feeder breaker 2. Investigate cause for feeder BK overload.	LATER	R LATER	C40-989 C40-993 C40-1713 C40-935
480V SWGR 2B1/2B2/2B5 FDRS OVRLD TRIP A-17	1.(A) 2B2 SS XFMR 480V feeder BK has tripped on overload, or BK is racked out or fuses blown. (B) 2B2 SS XFMR 480V output BK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BUS indication lights or loss of bus voltage.	1. Overtrip of overloaded BK. 2.(A) Check feeder(s) locally. (B) Replace blown fuses. (C) Consult elect. Dept. If necessary.	LATER	74-1/947 R/980 R/1712 LATER	C40-948 C40-1712 C40-930
480V SWGR 2B2/2B5 FDRS CNTRL FAIL/ SS TRIP. A-17	1.(A) Indicated feeders did not close from control switch to "CLOSE" position. (B) OR, loss of DC control power. (C) OR, RX1T/RX4 switch(es) in "TRIP" position. 2. Loss of BUS indicator lights.	1. Loss of remote breaker control 2.(A) Investigate alarm locally. (B) Place F-RX1/RX4 SS into RESET position if applicable.	A) Control Sz. Circuits B) "O" DC V. C) RX1/RX4 Switch to "TRIP."	74-2 SS/980 SS/1712 LATER	C40-980 C40-1712

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ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT MODIFICATION SUMMARY

ANNUNCIATOR PANEL A VERTICAL COLUMN 8

MIMIC TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATIONS USED TO VERIFY OR PROBABLE CAUSE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SEA 480V XFMR 2B2 TROUBLE R A-31	1. Trouble or trip of 2B2 station service XFMR from: (A) Sudden pressure alarm/trip (B) Winding temperature HI/HI-HI alarm (C) OIL level low/high temp. (D) Pressure relief actuation. 2. If XFMR trips: loss of running equip. on 2B & 2B5 480V load centers.	1. If XFMR trips - FAC and output BRK will open. 2.(A) Investigate alarm locally. (B) If XFMR trips, ensure other backup equip. switch. (C) Notify Electrical Department.	(A) 90 - 150 mm Hg sudden (B) HI - 112°C (C) Lo Level HI Temp. 90°C (D) Actuation	RA-RAB-20 Reflash Panel Behind 2A5 480V MCC	GAD-992
BLANK A-4B					
480V SWGR 2B2 VOLT ≤ 90% GROUND A-2B	1. 2B2 480V Load Center, bus voltage to voltage is ≤ 432 volts. 2. 2B2 4160 V bus voltage indication.	1. If voltage continues to decay, undervoltage auto-start has will occur at approx 88%. 2.(A) Investigate cause of actuation if on diesel. (B) Check system conditions.	432 Volts	27 X 1, 64 Located In 480V SWGR 2B2 Instr. Compartment	GAD-992 GAD-178
480V SWGR BUS TIES 2B2 - 2A8 OVRLD TRIP A-3B	1. 2B2-2A8 480V bus tie BRK has tripped open due to overcurrent condition on 2A8 bus. 2.(A) Has tie BRK lights - green. (B) Loss of running equipment on 2A8 480V load center and 2A8 MCC.	1. Tie BRK open on overcurrent. 2.(A) Investigate cause of BRK trip. (B) Notify Electrical Department.	Time Dependent O.C. Trip	52 BKRS 2-4050A/2B2 L.C. 2-4050/2A8 L.C. O.C. Trip Coils located in above Breakers	GAD-981 GAD-982 ED & ED Sh. 15
125V DC BATT 2B DISCH HI / BRK OPEN A-5B	LATER	LATER	LATER	52B 74 LATER	GAD-1832
480V SWGR BUS TIE 2B2-2A8 SS TRIP A-6B	1. Bus tie BRK 2B2-2A8 control has been isolated from Control Room. 2. Loss of one or both tie BRK indication lights.	1. Loss of BRK control from Control Room. 2.(A) Investigate cause for alarm. (B) Return BKR/TRIP SW to "NORMAL" position if applicable.	BKR/TRIP Switch In "ISOLATE" Position	SS/TRIP - 981/982 Switches on L.C. 2A8 and 2B2	GAD-981 GAD-982

ST. LUCIE UNIT 2
OFF NORMAL OPERATING PROCEDURE NUMBER 2-0130131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL ORDER 9

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID AFTER	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
PZR HTR XFMR 2B TROUBLE A-9	1. Transformer problem or trip; (A) Hi spot temp high (D) Low Oil Level (B) Hi spot temp trip (E) Hi Oil Temp. (C) Pressure relief device (F) Winding Temp. Hi or Hi Hi. 2. Loss of XFMR will show PZR HTR – green and loss of pressurizer heaters.	1. LATER 2.(A) Transmit PZR heaters P-2, HP-4, 5 & 6 until problem is resolved. (B) Have operator check XFMR locally. (C) Notify Elect. Department if necessary.	A) HI 112°C B) HI-HI 177°C Others Later	RA-9AB-1 Ref Lash Panel South Wall of B Cable Spreading Room	OAD-132
PZR HTR XFMR 2B1 4KV FEEDER OVRLD TRIP A-19	1. Overload condition on 2B1 SS XFMR feeder HTR to PZR htr bnk. 2.(A) Feeder HTR indication – green. (B) Loss of 1/2 of pressurizer heaters.	1. 2B1 SS XFMR feeder HTR open. 2.(A) Transmit PZR heaters P-2, HP-4, 5 & 6 until problem is resolved. (B) Notify Elect. Dept. and investigate cause for no trip.	BH & Later	74-1 LATER	OAD-954 BH & HD
480V SWGR 2B2 LOAD SHED RLY FAILURE A-29	1. Loss of DC ctrl power to 2B2 480V load shed relays. 2. NONE	1. Loss of load shedding ability on 2B2 480V load center. 2.(A) Check for blown fuses, or DC power fail. (B) Notify Electrical Department.	"0" DC VOLTS	74 LATER	OAD-992
480V MCC 2B5/2B6/2B3 BKR ESS SHUT DOWN A-39	1. Indicates non-essential section of one or all the MCCs listed has been locked trip; ed by LOCA. 2. Loss of any vending equip. on the non-essential section of the bus(es).	1. Opening of one or more MCC non-essential bus feeder bkr(s). 2.(A) When blk out conditions have cleared, or if bkr can easily handle the added load, close the isolated non-ess. BKR.	LATER	H/BH3 H/BH6 H/BH4 LATER	OAD-1016 OAD-1013
480V SWGR 2B1 TIE TO 2A1 OVRLD TRIP A-59	1. The BKR 2A1-2B1 480V turbine bkr has opened on overload, possibly causing a loss of power to one of the buses. 2.(A) Has the BKR 2-4820 indicate Higher – green. (B) Loss of vending equip. on tripped bus.	1. 2A1-2B1 MCC tie BKR 2-4820 open. 2.(A) Identify cause for trip before reloading through the tie bkr. (B) Contact Electrical Dept if necessary.	LATER	R LATER	OAD-975
PZR HTR XFMR 2B1 FOR GROUP FAIL/ SS TRIP. A-59	1. Indicates inability to close PZR htr SS XFMR 480V feeder BKR due to loss of DC control power, or O/C/I/SW. SW in "ISOLATE" position. 2. Loss of XFMR for BKR indicate Higher.	1. Inability to close 2B1 SS XFMR 480V FDR BKR and/or loss of feeder BKR Control capability 2.(A) Investigate alarm locally. 2.(B) Check fuses, DC power supply. (C) If O/C/I/SW. SI in "ISOLATE" return to "NORMAL" if applicable.	"0" VOLTS O/C/I/SW. Switch to "ISOLATE"	74-2 SS/ISOL. LATER	OAD-954

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WINDOW TITLE	1. INDICATED CONDITION 2. OTHER IND. BOTH INDICATION AND VERIFY OR ELEMENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
125V DC BUS 2A/2AB GROUND A-10	1. Positive or negative ground on 2A-2AB 125V DC bus, or equipment fed from bus. 2.(A) Observe if alarm can be concurred with change in status of any plant equip. which could be fed from bus. (B) Check DC bus electrical parameters.	1. Severe ground could trip DC BUS. 2.(A) If possible, START/RE-ENERGIZE strongly suspected equip. which was started/energized concurrent with annunciator receipt. (B) Follow 1.3 Ground Isolation Off-Normal Procedure No. 2-OPO6031.	79.5 K To Ground	64N, 64P Ground Actuating Relay - - - - - - - - - - - To 2AB Batt. Charger	OSD-1002 OSD-1502 PID & MD Sheet 68A
125 V DC BUS 2A/2AB BATT CHGR 2A/2AB TROUBLE R A-20	1. Battery charger 2A or 2AB trouble or trip from: (A) HI or Low voltage (B) HI voltage shutdown (C) Loss of AC power (D) Control power off (E) Re charge alarm 2. Check 2A-2AB DC bus voltage and charge/discharge amperage.	1. HI Voltage: Will shut down the battery CHG. 2.(A) Investigate cause for alarm locally. (B) If HI Voltage shutdown, try to reset HVSD relay, Battle charger. (C) If charger trips, ensure other 2A or 2AB charger is readily carrying the load. (D) If both chargers are lost, or if one cannot handle the load, charging could be aided by the use of 2AB charger through the 2AB-3B bus tie. (E) Notify Electrical Department.	HI Volts: >144.1 VDC - - - - - - LO Volts <125 VDC - - - - - - HI Volts S/D >151.9 VDC	RA-RAB-10	OSD-1002 OSD-1502
125V DC BUS 2B BATTERY TRACE A-30	1. 125V 2B-2BB bus voltage has dropped to LATER V. 2. Check the 2B-2BB DC bus voltage and charger discharge amperage.	1. BBB 2.(A) Check for charger trip. (B) Reset HI charge if possible.	LATER	27	OSD-1002
125V DC BUS 2AB GROUND R A-50	1. Positive or negative ground on 2A-2AB 125V DC bus, or equipment fed from bus. 2.(A) Observe if alarm can be concurred with change in status of any plant equip. which could be fed from bus. (B) Check DC bus voltage and charge/discharge amperage.	1. If ground is severe in nature equip., DC's DC BUS could trip from overload. 2.(A) If possible START/RE-ENERGIZE strongly suspected equipment which was started/energized concurrent with annunciator receipt. (B) Follow 1.3 Ground Isolation Off-Normal Procedure No. 2-OPO6031.	LATER	64P, 64N GAR	OSD-1003
125V DC BUS 2AB BATT CHGR TROUBLE R A-50	1. Battery charger 2AB trouble or trip (A) HI or low voltage (B) HI voltage shutdown (C) Loss of AC power (D) Control power off (E) Re charge alarm 2. Check 2AB DC Bus voltage, charge/discharge amperage. Loss of charger may not cause loss of power to 2AB DC bus.	1. HI-voltage: Will shut down the Batt. Charger. 2.(A) Investigate cause for alarm locally. (B) If HI-voltage shutdown, try to reset HVSD relay. (C) If charger trips, ensure power supply from 2A or 2B DC bus via the BUSs. (D) Notify Electrical Department.	LATER	RA-RAB-12	OSD-1003
125V DC BUS 2AB BREAKER TRIP A-60	1. 125V 2AB DC bus voltage has dropped to LATER V. 2. Check the voltage and charge/discharge amperage on the DC bus feeding the 2AB bus.	1. BBB 2.(A) Start bus charger if not running, and close output bkr to 2AB bus. (B) Swap the load to the other DC bus if available.	LATER	27	OSD-1003

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 , VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. ERROR, BOTH INDICATION WHICH VERIFY OR PERSONNEL ERROR	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
START - UP XFMR 2A DIFFERENTIAL TRIP B-1	1. S/U XFMR 2A lockout relay has been actuated by differential current, isolating the XFMR. 2.(A) S/U OCBs 8423-8450 indicate - green. (B) XFMR 4.16-6.9KV output BKR 2-3308, 2-3309 indicate - green. (C) If auxiliaries are S/U XFMR: No voltage on elect. heat and loss of number equipment	1. XFMR lockout: (A) Both S/U XFMR S/U OCBs open - (2E-24) (B) XFMR output BKR 3BK to 2A4-4.16, 2A1-6.9 KV bus 1 open. (C) Possible loss of offsite power to "A" side. 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030130.	LATER	74 HSA	OAD-901
START - UP XFMR 2A FAULT PRESS TRIP B-11	1. S/U XFMR 2A lockout relay has been actuated by DI rate of pressure increase indicating fault. (Isolates XFMR) 2.(A) S/U OCBs 8423-8450 indicate - green. (B) XFMR 4.16-6.9KV output BKR 2-3308, 2-3309 indicate - green. (C) If auxiliaries on S/U XFMR: No voltage on elect. heat and loss of number equip.	1. XFMR lockout: (A) Both S/U XFMR S/U OCBs open - (2E-24) (B) XFMR output BKR 3BK to 2A4-4.16, 2A1-6.9 KV bus 1 open. (C) Possible loss of offsite power to "A" side. 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030130.	LATER	74 SP Fault Press Relay on 2A2 4160V bus (BOC panel #152-212-2)	OAD-901
START - UP XFMR 2A ALARM PANEL B-21	1. Local alarm at XFMR; indicates abnormal condition in 2A S/U XFMR. 2. Temp. recorder TR-22-30, XFMR temperature.	1. No direct automatic action (alarm only). 2.(A) Have Operator check XFMR alarm panel at XFMR. (B) Refer to S/U XFMR Off-Normal Procedure No. 2-0030130.	LATER	74-X	OAD-908
START - UP XFMR 2A GND OVERLOAD B-31	1. Indicates presence of ground on 2A S/U XFMR low 4160V windings, 4KV bus, or connections to the bus (alarm only). 2. None	1. None - Alarm only 2.(A) Inspect 4160V bus ground fault relay target. Ground current may have not been enough to drop local target. (B) Notify Electrical Department immediately. (C) Systematically remove bus loads to locate ground	LATER	64 STA-2	OAD-
4KV SWGR 2A2 FEEDERS OVERLOAD TRIP B-41	1.(A) Any S/U XFMR FBK BRK to 2A2 bus have tripped open from overload. (B) OR, BRK has been racked out (C) OR, BRK Fuse failure 2.(A) Feeder BRK Lights - green (B) Loss of "A" condensate pump - heater drain pump	1.(A) 2A2 4160V bus Feeder BRK open - possible loss of offsite power to "A" elect (B) Possible turbine runback and Rx trip 2.(A) Refer to S/U or Aux XFMR Off-Normal Procedure. (B) If Rx trips, refer to Rx trip Procedure No. 2-0020120.	LATER	74/906 74/914	OAD-906 OAD-914
4KV SWGR 2A2 SYS TRB. B-51	1. Feeder BRK 2-20102 BKR/TRIP switch in "TRIP" position in Turbine Bldg. room. 2. No BRK indicate lights for BRK 2-20102.	1. BRK control ability lost from Control Room. 2.(A) Have Operator Investigate BRK 2-20102. (B) Return BKR/TRIP SW to "NORMAL." If applicable.	CS in "TRIP."	SS/TSOR. Turbine Bldg Room	OAD-906

ST. LUCIE UNIT 2

OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 6 VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTINENT TO ISSUE	1. AUTOMATION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
START - UP XFMR 2A 230KV GROUND TRIP B-2	1. S/U XFMR A lockout relay has been actuated by 230KV side ground, isolating the XFMR. 2.(A) 230KV CBs 8450-8452 indicate - green. (B) XFMR 4.16-6.9KV output BKR 2-3460H, 2-3480H indicate green. (C) If unit Harfer on S/U XFMR: No voltage on "A" short, buses and loss of annunciator "A" windows	1. XFMR is lost: (A) Both S/U XFMR 230KV CBs open - (2H-2A) (B) XFMR output FOR BKR to 2A2-4.16, 2A1-6.9 KV buses open. (C) Possible loss offsite power to "A" side. 2. Refer to S/U XFMR Off-Normal Procedure No. 2-0030131 (Book)		74 - NSA	GAI-901
START - UP XFMR 2A LOCKOUT RLY FAILURE B-12	1. Loss of lockout protection for the 2A S/U XFMR, due to loss of DC power to lockout relay. 2. BKR - unless trip signal for unit is present, then the BKR will not trip.	1. None 2.(A) Immediately investigate cause; contact Elec. D/A and monitor for XFMR trip condition. (B) Refer to S/U XFMR Off-Normal Procedure No. 2-0030131.	"D" DC Volts	74B STA	GAI-901
4kV XFMR TIES 2A2-2A1 OVRLD TRIP B-22	1.(A) The BKR have opened; possible loss of power to the 2A1 4160V bus. (B) OR, overload condition has caused BKR. 2.(A) The BKR - green indication lights (B) Loss of running 2A1 electrical equip.	1. Possible loss of power to 2AB 4160V equip. 2. If power is lost: (A) Dispatch other makeup equipment running and investigate cause for overload. (B) Strip all loads from bus. (C) Notify Electrical Department.		74/934 74-1-936	GAI-934 GAI-936
START - UP XFMR 2A 6.9KV GROUND B-32	1. Ground fault on 6.9KV bus side of the 2A S/U XFMR (alarm only). 2. NONE	1. None (alarm only). 2.(A) Loss of 6.9KV bus ground fault relay trip. Ground current may not have been enough to drop local target. (B) Notify Electrical Department immediately. (C) Systematically remove bus loads to locate ground.		64/STA-1	GAI-901
6.9KV XFMR 2A1 FEEDERS OVRLD TRIP B-42	1.(A) Feeder BKR to the 6.9KV 2A1 bus have opened from overload condition. (B) OR, breakers have been racked out. 2.(A) Feeder BKR - green lights (B) Zero voltage - 2A1 6.9KV bus (C) Loss of "A" MOP and 2A1, 2B1 MCCs.	1.(A) Loss of power to 2A1 6.9KV bus and all running equip. on the bus (B) Possible faulted racked, Rx trip. 2.(A) If Rx trips, use Rx Trip Procedure No. 2-0030111. (B) Open all feeders on bus. (C) Notify Electrical Department		74/904 74/912	GAI-934 GAI-912
4kV BUS TIES 2A2-2A1 CLOSE PULL/ TRIP ENB. B-52	1. Indicates XFMR ties will not close due to loss of DC control power or 8811/1A, 2A to 8338A1 Bus. 2. Possible loss of BKR bulb for lights on BKR.	1. None 2. Return 8811/1A, 2A to NORMAL, IF NORMAL then notify Electrical Department.		74-2 SS/ENB. 934 SS/ENB. 936	GAI-934 GAI-936

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B VERTICAL ORDER 3

WINDOW TITLE	1. INDICATED CONDITION 2. ORDER, BOOTH INDICATION WHICH VERIFY OR EFFECTING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
6.9KV SWGR 2A1 OVERCURR TRIP B-3	1. Indicates 2A1 6.9KV SWGR FDR BRK has opened, from a differential current trip. 2.(A) FDR BRK lights green. (B) No voltage on 6.9KV 2A1 bus. (C) Loss of HVAC, 2A1, 2B2 RCP.	1. De-energization of the 6.9 2A1 bus loss of all running equipment on the bus. 2.(A) If Rx trip, see OP 2-0030130 (B) Open all B-3 on bus. (C) Notify Electrical Department.	LATER	86/2A1	OAD-904
4KV SWGR 2A2 OVERCURR TRIP B-13	1. Indicates FDR BRK to the bus have opened from a differential current trip. 2.(A) FDR BRK lights - green (B) Zero voltage on 2A2 4160V bus, and any other buses being fed from. (C) Loss of "A" Containment pump, heater, hydrogen.	1. De-energization of the 4160V 2A2 (A) Bus - loss of all equip. fed from bus. (B) Possible Turbine runback, Rx trip. 2.(A) Ensure diesel picking up essential bus. (B) If Rx trips, see OP 2-0030130 (C) Notify Electrical Department	LATER	86/2A2	OAD-905
6.9KV SWGR 2A1 /4KV SWGR 2A2 UNDERVOLTAGE B-23	1. Indicates low voltage present on 2A1 6.9 KV and/or 2A2 4160V bus. 2. Respective bus voltmeters reading low voltage.	1. None 2.(A) Check plant electrical parameters to determine cause for low voltage (B) Check plant annunciators by calling Division dispatcher. (C) Contact Electrical Department (D) Check for possible NSR problem.	LATER	27x1/2A1 27x1/2A2	OAD-952
VIT. INSTRUMENT 120 VAC INVRS TROUBLE R B-33	LATER	LATER		RA-RAB-4 RA-RAB-33 RA-RAB-34	OAD-1008 OAD-1029 OAD-1305 OAD-1306
120V AC INSTR BUS 1A/1A-1/1A INVERTER TROUBLE R B-43	1. Indicates problem with 1A1 Inverter, 1A Instrument bus, 1A1-1 Instrument bus, static inverter 2A, or PT 2B1 Possible loss of 1 channel of ESFAS, RPS, NIS, and half Rx Trip BRK open. Possible loss of QSPDS display.	1.(A) Possible loss of "A" channel ESFAS, RPS, NIS, Rx Trip BRK, QSPDS (B) If 2 bus, AC buses are lost; Rx trip will occur. 2.(A) If Rx Trip occurs; see OP 2-0030130 (B) Put test bus auto inhibit bypass XFMR. (C) Check Ref Flash IND RA-RAB-28 (D) Notify Electrical Department	VARIOUS	RA-RAB-16 RA-RAB-28	OAD-1009 OAD-1303
120V AC INSTR BUS 2B/2B-1 INVERTER TROUBLE B B-53	1. Indicates problem with 2B1 Inverter, 2B Instrument bus, or 2B1-1 Instrument bus. 2. Loss of 1 channel of ESFAS, RPS, NIS, and half Rx Trip BRK open.	1.(A) Possible loss of "C" channel ESFAS, RPS, NIS, Rx Trip BRK. (B) If 2 bus AC buses are lost; Rx trip will occur. 2.(A) If Rx Trip occurs; see OP 2-0030130 (B) Put test bus auto inhibit bypass XFMR. (C) Check Ref Flash IND RA-RAB-14 (D) Notify Electrical Department	VARIOUS	RA-RAB-14	OAD-1009

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ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
6.9/4KV SWGR 2A1/2A2/2A3/AB DIFF LOCKOUT RELAYS FAILURE R B-4	1. Loss of lockout protection for one or more Elect. buses listed indicates loss of relay DC Cont. Pwr. 2. NONE, unless trip signal is generated for one of the indicated relays, then annunc. BRK will not trip	1. None 2.(A) Contact Electrical Department. (B) Investigate local relay targets (C) Monitor SWGR parameters closely to identify a trip condition.	"0" DC VOLTS	RA-RAB-3	CWD-1551
4KV SWGR 2A3 CURRENT TRIP B-14	1. Indicates FDR BRK tripped due to differential bus current. 2.(A) Feeder breaker green light (B) Loss of voltage on 2A3 4160V bus. (C) Loss of 2A3 bus loads; ICW, CCW, (D) Start-up of 2A D/G	1. 2A3 bus trip, diesel starts up, and loads will re-sequence onto diesel. 2.(A) Determine cause for bus trip (B) Notify Electrical Department (C) Ensure essential equipment running	N/A	86/2A3/924	CWD-201
START - UP XFMR 2A 6.9KV/4KV BKR FAILURE B-24	1. Indicates BRK trip signal sent to BKR to open but BRK failed to open 2. Respective BRK lights 6.9KV, 2-20102, 4KV; 2-20401 red or out	1. Protective action to isolate XFMR is inoperative or failed 2. Notify System Protection via immediate contact of Division Dispatcher	LATER	74/BSA	CWD-901
STA SERV XFMR 2A5 TROUBLE R B-34	LATER	LATER	LATER	RA-RAB-25	CWD-1701
4KV SWGR TIES 2A3/2AB OVRLD TRIP B-44	1.(A) Indicates 2AB bus overload condition (B) Or, tie breakers are racked out 2.(A) Tie bkr lights green (B) Possible loss of 2AB 4160V load - charging, ICW, CCW (C) Zero voltage on 2AB 4160V bus possibly	1.(A) 2A3 - 2AB tie breakers open (B) Possible loss of voltage on 2AB bus 2.(A) Contact Electrical Dept. to investigate cause for 2AB bus overload condition		74-1/938 74-1/960	CWD-938 CWD-960
4KV SWGR TIES 2A3/2AB CLOSE FAIL/ CS ISOL B-54	1.(A) Indicates 2A3 to 2AB 4160V BKR fail to close or local NORM/ISOL SW in ISOLATE position. (B) Loss of BRK indicator lights.	1. None 2.(A) Have operator verify NORM/ISOL SW in NORM position (B) If in ISOL., notify Electrical Dept.	NORM/ISOL Switches in "ISOL"	74-2 SS/ISOL/938 74-2 SS/ISOL/960 2A3-2AB 4160 TIE BRK Cable Spreading Room	CWD-938 CWD-960

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ST. LUCIE UNIT 2
OFF NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGIN, ROOM INDICATION WHICH VERIFY OR PERSONNEL NUMBER	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
4KV SWGR 2A4 OVERCURR TRIP B-5	1. 2A4 4160V SWGR has been Initiated on differential current trip 2.(A) Zero volts on 2A4 4160V bus (B) Loss of running "C" equipment (C) Bus tie BRK - green	1. Opening of both sets of the BRK to 2A4 4160V bus 2.(A) Open all BRK on the bus (B) Ensure proper backup equipment (C) Notify Electrical Department	"0" DC VOLTS	86/2A4	GAI-935
4KV SWGR 2A3 LOAD SHED GEN FAILURE B-15	1. Load shed relay has failed or 4160V SWGR 2A3 Indicates relay DC control power is lost. 2. None	1. None 2. Notify Electrical Department	"0" DC "0" DC VOLTS	74-4	GAI-959
5/6 XFMR 2A TIE SWGR 2A5 FOR BRK OVERLOAD TRIP B-25	LATER	LATER	LATER	74	GAI-1201
480V SWGR 2A5 VOLT & SYNC/ GUARD B-35	LATER	LATER	LATER	2781, 64.701 2-3, 2715, 2 5/1836	GAI-1701 GAI-1336
480V SWGR 2A5 LOAD SHED RLY FAILURE B-45	1. Load shed relay has failed or 4160 bus 2A5. Indicates loss of relay DC control power. 2. None	1. None 2. Notify Electrical Department	"0" DC Volts	74	GAI-1701
4KV TIE SWGR 2A4 (BUS 2 NEED BUS TRANSF RELAY FAIL B-55	1. 2A4 4160V bus lockout relay has failed and will not operate, due to loss of DC control power.	1. None 2. Notify System Protection Dept. via contact of Division Dispatcher	"0" DC Volts	74B-2A4	GAI-1201

ST. LUCIE UNIT 2
OFF NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION(S) TO VERIFY OR PERSONNEL TO DISPATCH	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
DIESEL DG 2A BOARDS FAILURE B-6	1. Later 2. D/G output BRK - green light.	1. Later 2. Later	LATER	74-1	OAP-963
DIESEL DG 2A GOVERNOR START FAILURE B-16	1. Later 2. D/G voltage, frequency not start - yellow light not lit.	1. Later 2. Check local alarm for fault later	LATER	EDX	OAP-962
DIESEL DG 2A LOCKOUT/ SS TRIP. B-26	1. Diesel lockout switch has tripped and locked out or 86X1/TRIP, SS have been put to the TRIP position. 2. Possible diesel trip if lockout actuates.	1. Possible diesel trip or loss of remote control capability. 2. Determine the cause for the alarm locally.	LATER	86, SHOX1 SS-TRIP.-1,3,B SS/1606	OAP-1119
DIESEL DG 2A LOCAL ALARM B-36	1.(A) Local alarm relay has energized at diesel control panel, or from diesel fire alarm. 2. None, unless diesel trips.	1. Possible diesel trip or fire sprinkler activation. 2. Determine cause for alarm locally.	LATER	70X6	OAP-1118
DIESEL 480V SWGR 2A3 VOLT < 90%	LATER	LATER	LATER	2-1 27UC 2A3	OAP-1036
DIESEL DG 2A BOARDS START FAILURE/ SS TRIP. B-56	1.(A) No DC Power on 2AA DC bus available to start diesel. (B) D/G Output 4160V BRK 86X1/TRIP, SS in TRIP/ATE (C) D/G Output 4160V BRK has locked out. 2. D/G start and/or BRK control SS indicating lights out.	1. D/G will not start or close onto bus from Control Room. 2.(A) Investigate DC power loss. (B) Rack in D.G. output BRK if applicable (C) Return output BRK 86X1/TRIP, SS to NORMAL if applicable	Both BRK Open 86X1/TRIP. TRIP. 4160V BRK Racked out	74-2 SS/TRIP. 52/B	OAP-963 OAP-1002

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL ORDER 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORDER BOOK INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STA SERV XFMR 2A1 BUSBAR B-7	1.(A) Sudden cooling pressure increase or trip. (B) Winding temperature hig or HI -hyn. (C) Pressure relief device actuate. (D) Oil temp high. 2. Loss of XFMR - green LT lts.	1. Possible protection device XFMR trip 2. Check XFMR locally.	(A) Later (B) HI-112[°C] HI HI-117[°C] Others LATER	RA-T-7	OAD-936
480V SWGR 2A1 FEEDERS OVLD TRIP B-17	1.(A) 2A1 SS XFMR 4160V FDR bkr overload trip, racked-out, or fuses blown. (B) OR 2A1 SS XFMR 480V output BKR overload trip, or racked out. 2. XFMR BKR lights out or green, loss of voltage and loads on 2A1 480V load center	1. Loss of 2A1 480V bus and operating loads on the bus. 2. If not tripped/racked; Investigate cause locally.	LATER	74/965 R/973	OAD-965 OAD-973
480V SWGR 2A1 480V BUS 2C UNDERVOLTAGE/ GROUND B-27	1.(A) Ground on 2A1 SS XFMR low side. (B) Ground in loads fed from 2A1 480V bus. (C) Undervoltage condition in SWGR (Later). 2. Possible alarms 67, 817. (Later Possible loss of XFMR)	1. Later 2.(A) Isolate loads to identify ground. (B) Check 2A1 SS XFMR for ground.	LATER	27 64/986 27/726	OAD-936 OAD-726 726
480V SWGR 2A-1/2/5 BUS FDRS OVLD TRIP B-37	1. Overload trip of any BUS FDR BKR on 2A1, A2, or A5 480V buses. 2. Possible lockout by loss of DC control which tripped.	1. BKR trip open on overloaded feeder. 2. Investigate cause for feeder BKR overload	LATER	R	OAD-987 OAD-991 OAD-1701 OAD-984
480V SWGR 2A2/2A5 FDRS OVLD TRIP B-47	1.(A) 2A2 SS XFMR 4160V FDR BKR tripped on overload, or BKR racked out, or fuses blown. (B) 2A2 SS XFMR 480V output BKR to 2A2 or 2A5 load centers tripped on overload or racked out. 2. BKR indication lights or loss of bus voltage.	1. Opening of overloaded BKR. 2.(A) Check breaker(s) locally. (B) Replace blown fuses. (C) Consult Elect. Dept. if necessary.	LATER	74-1/946 R/977 R/1702	OAD-986 OAD-1702 OAD-977
480V SWGR 2A2/2A5 FDRS GAGE FAIL/ SS ESR. B-57	1.(A) Isolation feeders did not close when SW to close position. (B) Loss of DC control power. (C) ESR/ESR switches in "MANUAL" position. 2. Loss of BKR indicate lights.	1. Loss of remote breaker control. 2.(A) Investigate cause for alarm locally. (B) Place ESR/ESR SW into "NORMAL" position	N/A	74-2 SS/ESR - 946 SS/977 SS/1702	OAD-946 OAD-977 OAD-1702

ST. LUCIE UNIT 2
OFF NORMAL OPERATING PROCEDURE NUMBER 2-0010131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL GROUP 8

WINDOW TITLE	1. INDICATED CONDITION 2. ADDITIONAL HOW INDICATION (DIRECT VERIFY OR PERSONNEL DISPATCH)	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STA SERV XFMR 2A2 TROUBLE R B-8	1. Trouble or Trip of the 2A2 Sta Serv Xfmr from: (A) Winding temperature high (B) Sudden pressure high or trip (C) Oil level low (D) Pressure relief device actuate 2. If XFMR trips; loss of running equip. on 2A2 and 2A5 480V load centers.	1. If XFMR trips - feeder and output bkrs will open. 2.(A) Investigate alarm locally (B) If XFMR trips; ensure back-up equip. running (C) Notify Electrical Department	LATER	RA-RAB-29	OAD-990
BLANK B-15					
480V SWGR 2A2 VOLTAGE < 90%/ GROUND B-28	1. Later 2. Later	LATER	LATER	27X1 64	OAD-990
480V SWGR BUS TIES 2A2-2AB GROUND TRIP B-38	1. 2A2-2AB 480V bus tie BRK has tripped open due to overload condition on 2AB bus. 2.(A) Bus tie Bkr lights - green. (B) Loss of running equipment on 2AB 480V load center and BRK fed from it.	1. Tie BRK open on overload. 2.(A) Investigate cause for bkr trip. (B) Notify Electrical Department.	LATER	R/978 R/979	OAD-978 OAD-979
2AB SWGR/ 2AB MCC UNDERVOLTAGE B-48	1. Undervoltage on: (A) 2AB 4160V bus (B) And/or 2AB 480V load center bus. (C) And/or 2AB 480V MCC. 2. Buses directly from 2AB, only following loss of A or B bus feeding the AB.	1. Bus 2.(A) Determine cause for undervoltage. (B) Notify elect. dept. if necessary. (C) Check bus ties locally.	LATER	27A/942 27X2/996 27/1008	OAD-996
480V SWGR BUS TIE 2A2-2AB SS ESW. B-58	1. Bus tie BRK 2A2-2AB control has been isolated from control room. 2. Loss of one or both BRK indicate lights.	1. Loss of BC control from Control Room. 2.(A) Investigate cause for alarm locally. (B) Return SWGR/ESW. switch to "NORMAL" position.	NORM/ESW. Switch to ISOLATE Position	SS/ESW. - 978, 979	OAD-978 OAD-979

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 9

MIMIC TITLE	1. INDICATED CONDITION 2. ORDER FROM INDICATION WHICH VERIFY OR PTRBOINT NUMBER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PZR HTR XFMR 2A TROUBLE R B-9	1. XFMR problem or trip; (A) Hot spot temp high (D) Low oil level (B) Hot spot temp trip (E) High oil temp (C) Pressure relief device (F) Winding temp HI or HI-HI. 2. Loss of XFMR will show PZR HTR - group and loss of pressurizer heaters.	1. Later 2.(A) Turn OFF PZR heaters P-2, BD-4, 6, & 8 until problem is resolved. (B) Have Operator check XFMR locally. (C) Notify Elect. Dept. if necessary.	A) HI 112°C B) HI HI 117°C Others LATER	RA-RAB-3	OAP-131
PZR HTR XFMR 2A3 480V BKR/FR OVRLD TRIP B-19	1. Overload condition on 2A1 SS XFMR PZR HTR BUS to PZR heater bus. 2. (A) Breaker BUS indication - open (B) Loss of 1/2 pressurizer heaters	1. 2A3 SS XFMR breaker has open. 2.(A) Turn OFF PZR heaters P-2, BD-4, 5 & 6, until problem is resolved. (B) Notify Elect Dept. and investigate cause for overload.	LATER	74-1	OAP-963
480V SWGR 2A2 / 2A4 LOAD SHED BLK R FAILURE B-29	1. Loss of DC control power to 2A2 and/or 2A4 SWGR load shed relays rendering inoperable. 2. None	1. Loss of load shedding ability on 2A4/2A2 480V bus contactors. 2.(A) Check for blown fuses, or DC power fail (B) Notify Electrical Department.	"0" DC Volts	RA-RAB-2	OAP-1551
480V BUS 2A3/2A5/2A7 NON ESS SECT LOCKOUT B-39	1. Indicates nonessential section of one or all of the MCCs listed has been isolated, tripped by (Later) 2. Loss of any running equipment on the nonessential sections of the buses.	1. Opening of nonessential loads isolation BUS and loss of power to these sections 2.(A) When blackout condition have cleared, or if load can easily handle the added load; close the isolated noness. section to Pnl. Bkr.	LATER	M/1011 M/1012 M/1015	OAP-1011 OAP-1012 OAP-1015
480V SWGR 2A6 FDC FDR OVRLD TRIP B-59	1. 480V load cntr BUS 2-30/31 supply 2A6 MCC bus (A) Tripped on overload (B) Or, has been racked out. 2. Loss of running equipment on the 2A6 bus.	1. 2A6 load cntr bkr open on overload. 2.(A) Identify cause for trip before re-energizing through the FDR bkr. (B) Contact Electrical Dept. if necessary.	LATER	K	OAP-975
PZR HTR XFMR 2A1 FDR GFCI FAIL / SS TROU. B-79	1. Indicates inability to close PZR bkr SS XFMR SWGR bkr due to loss of DC control power, or BKR/ESS. SW. in "ISOLATE" position. 2. Loss of XFMR feeder breaker indication lights	1. Inability to close 2A1 SS XFMR 480V feeder BUS and/or loss of remote BUS control capability. 2.(A) Investigate cause for alarm locally. (B) Check trans. DC power supply. (C) If BKR/ESS switch in "ISOLATE" return to "in SVC" if applicable.	"0" Volts Switch to "ISOL" pos.	74-2 SS/ESS.	OAP-963

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 ANNUNCIATOR ORDER 10

ALARM TITLE	1. INDICATED CONDITION 2. OPTIONAL BOOTH INDICATION WHICH VERIFY OR PROBABLE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SECTION	MISSING ELEMENT NUMBER & LOCATION	REFERENCE
125V DC BUS 2A/2AA GROUND B-10	1. Positive or negative ground on 2A – 2AA 125V DC bus, or equipment fed from bus. 2.(A) Observe if alarm came in coincident with the change in status of any other equipment, which could be fed from bus. (B) Check DC bus electrical parameters.	1. If ground is severe in nature equipment, DC bus could trip from overload. 2.(A) If possible, Stop/De-energize strongly suspected equipment which was started/ energized coincident with annunciator receipt. (B) Follow DC ground Insulation Off-Normal Procedure 2-0030130.	LATER	64P 648 GAR, GAR2AA	GAD-1001 GAD-1801
125V DC BUS 2A/2AA BATT CHGR 2A/2AA TROUBLE B-20	1. Battery charger 2A or 2AA trouble or trip: (A) Hi or low voltage (D) Control power off (B) Hi voltage shutdown (E) Hi charge alarm (C) Loss of AC power 2. Check 2A-2AA DC bus voltage and charge/discharge ammeter.	1. Hi voltage will shutdown the batt. Charger 2.(A) Investigate cause for alarm locally. (B) If Hi-Volt shutdown, try to reset HVSD relay (C) If charger trips, ensure other 2A or 2AA charger is running carrying the load. (D) If both chargers are lost, or if one cannot handle the load, charging could be added by use of 2AB charger through the 2AB-2A bus tie. (E) Notify EC electrical Department.	LATER	RA-RAB-11 RA-RAB-26	GAD-1011 GAD-1301
125V DC BUS 2A UNDERVOLTAGE B-30	1. 125V 2A-2AA buses voltage has dropped to Later V. 2. Check the 2A-2AA DC bus voltmeter, and charge/ discharge ammeter.	1. None 2.(A) Check for charger trip. (B) Restart charger if possible	LATER	27	GAD-1001
AVIATION LIGHT PWER FAILURE B-40				27	GAD-1194
125V DC BATT 2A DISCH HI/ LOW OVER B-50	1.(A) High rate of discharge ampere from 2A batt. (B) Or, Indicates 2A batt. output BKR to 2A DC bus has been opened to the test load. 2.(A) Batt. Gauge/Discharge ammeter. (B) Battery bus voltage low.	1. None 2.(A) Examine battery output BKR locally, and reposition if applicable. (B) Examine DC chargers to be running NORMAL. (C) Examine loads on bus.	Later Again Battery Bkr	52/B 74 Battery output breaker	GAD-1301
ERROR 125V DC SEV-SENS AB BRKRS NEVR-RSED B-60					GAD-

2

ANNUNCIATOR PANEL C VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION (WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR DIFFERENTIAL TRIP C-1	1.(A) Primary lockout has been actuated by a differential in generator current trip. (B) Gen. lockout trips turbine. 2.(A) Turbine trip - valves closed, possible Rx trip if >15% RTP. (B) Target drops on Gen Diff current trip relay and lockout actuates behind KRXB-20.	1.(A) Lockout actuates. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-OONO131. (B) Notify Electrical and System Protection Department.	Trip Relays Actuate	74 GD 87G/887 Relays (3) Behind KRXB-201	GAI-885
GEN - XFMR DIFFERENTIAL TRIP C-11	1.(A) Back-up lockout has been actuated by diff. current on Bus between main & GSU. (B) Gen. lockout trips turbine. 2.(A) Turbine trip valves closed, Rx trip if >15% RTP. (B) Target drops on Gen. XFMR diff. current relay and lockout actuates behind KRXB-20.	1.(A) Lockout actuates. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-OONO131. (B) Notify Electrical and System Protection Department.	Trip Relays Actuate	74 GT 87GT/879 Relays (3) Behind KRXB - 201	GAI-885
GEN BUS XFMR 250KV PHASE DIFFERENTIAL TRIP C-21	1.(A) Primary lockout has been actuated by a differential current on Bus between main XFMR and SUFD (B) Gen. lockout trips turbine. 2.(A) Turbine trip valves closed, Rx trip if >15% RTP. (B) Primary lockout actuates behind KRXB-20.	1.(A) Lockout actuates. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-OONO131. (B) Notify System Protection Department. (C) Check SA cooler panel - 11.	Trip Relays Actuate	74 TDX Prot. relays in SUFD house relay panel #13	GAI-883
GENERATOR LOSS OF FIELD/ DIFF CIRCUIT FAILURE R C-31	1. Loss of DC control power to: (A) Primary lockout relay (B) Back-up lockout relay (C) Inter-frequency lockout relay 2. Use refresh mode to pinpoint troubled relay. (Inter-location)	1. No auto action 2.(A) Notify System Protection Dept. via contact with Dispatcher. (B) Trip unit manually if a valid gen. trip condition develops.	"D" DC Volts	(74/94-1)* (74/94-2)* RA-RAB-18 KRXB-201 Rear Main gen. prot. rlys	GAI-882
GENERATOR EXCITER HOT GAS OVER TEMPERATURE R C-41	1. Trouble with 2A or 2B EXCITER cooler: (A) loss of power, or not running (B) Clogged air filter or (C) Differential pressure SI. 2. Refresh mode (Inter-location)	1. Normally cool if status if trouble cooler is lost. 2.(A) Determine cause for alarm locally. (B) Return of good cooler to service. (C) If no fan cooling is available, remove turbine generator from service.	LATER	RA-RAB-18 LATER	GAI-866
GENERATOR EXCITER HOT GAS TRIP C-51	1. High temperature in Exciter hot air return duct. 2. Other Exciter related alarms.	1. None 2.(A) Investigate potentially cooler in serv. (B) Determine cause for insufficient cooling.	167°F (75°C) Hot return Air temp	Vendor Temp. Switch On top of commutator air return duct. Turbine Operating	GAI-865

ANNUNCIATOR PANEL C VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. ORTHOR. ROOM INDICATION WHICH VERIFY OR PERSONNEL DISPATCH	1. SBO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR GROUND TRIP C-2	1. Turbine has tripped on generator ground. 2.(A) Bypass indications read "ZERO". (B) Turbine valves closed. (C) Rx trip if PWR >15%. (D) Target drop on ground trip relay Bridal RELAY-201	1. Turbine trip/possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0010010 (B) Notify Elect. Dept. and System Protection Dept.	Trip Relay Actuate	7403/883 7403/885 - - - - - - - - - - - (Relay RELAY-201 Rear)	GEN-883 GEN-885
GENERATOR REVERSE POWER TRIP C-12	1. Turbine has tripped due to imbalance in generator powers due to system grid fault. 2.(A) Bypass indications read "ZERO" (B) Turbine valves closed. (C) Rx trip if >15% power. (D) Target drop on gen. prot. seq. rly (RELAY-201 rear) (E) Possible high generator temperature.	1. Turbine trip/possible Rx trip 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0010010. (B) Notify Elect. Dept. and System Protection Department.	Trip Relay Actuate	74RS 74-1/GS - - - - - - - - - - - (Relay-RELAY-201 Rear	GEN-883
GENERATOR NEGATIVE SEQUENCE C-22	1. Indicates imbalance exists between generator Phases due to system fault. 2.(A) Difference in phase current readings. (B) Possible HI generator temperature. (TO BE REVISED LATER)	1. If condition sustains, could cause turbine 2.(A) Consult with generator Off-Normal Procedure 22- (Later) . (B) If trip occurs, see Rx trip Off-Normal Procedure No. 2-0010010.	LATER	46 46A - - - - - - - - - - - LATER	GEN-883
GENERATOR PT FAILURE C-32	1. Generator potential instrumentation to system GEN has been lost. (60/9 lock-out) (Also some routine info) 2.(A) Loss of generator parameter indications. (B) Target drop on PT failure relay Bridal RELAY-201.	1.(A) Voltage Regulator shifts to manual (B) DEH control shifts to manual (C) Loss of trip protection. 2.(A) Take action necessary to stabilize (B) Monitor Gen./Syn trip parameters closely for trip condition. (C) Notify System Prot. & Elect. Depts.	LATER	GENA/885 60/883 - - - - - - - - - - - PT failure relay 60-881 bridal RELAY-201	GEN-885 GEN-881
GEN FIELD GND DET/ BRSH CONTACT FAILURE C-42	1. Indicates the automatic ground detection system has detected a ground existing on gen. rotating	1. None 2. Notify Electrical Department.	LATER	64X, K1, K2 625 - - - - - - - - - - - LATER	GEN-872
GENERATOR EXCESSIVE HYDROGEN DET/FAIL. R C-52	1. Hydrogen leakage out of the generator into an isolated phase duct. 2. Generator gas pressure decreasing.	1. Dampers repositioned to purge system. 2.(A) Check Gen. gas press., for rate of decr. (B) Have operator ensure dampers positioned to the purge mode. (C) Determine validity and severity of leak, possibly remove Turb. Gen. from service.	LATER	Contacts from vendor H2 Panel - - - - - - - - - - - Turbine mezz.	GEN-865

ANNUNCIATOR PANEL C VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL DUTIES	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR TURBINE TRIP C-1	1. Turbine has been tripped by operator primary or backup lockout. 2.(A) Turbine trip - valves closed. (B) Rx trip if >15% power. (C) Lockout relay(s) actuated behind RRR-30H.	1.(A) Prim. and/or back-up lockout trips Turb. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 2.(B) Determine cause for lockout. (C) Notify Elect. or Sys. Protection Dept.	Lockout(s) Actuation	94T Gen-Turbine Trip Relay RRR-30H Rear	OAP-833
GEN EXCIT SYS BKR TRIP C-13	1.(A) Field BKR opening while synchronized due to primary lockout actuation. (B) Lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% RTP. (B) No excitation on machine. (C) Primary lockout actuates behind RRR-30H.	1.(A) Loss of generator excitation. (B) Lockout relay action. (C) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 (B) Determine cause for BKR trip. Notify Electrical Department if necessary.	Breaker Contacts	41CS/877/875 41As1/877 Excitation BKR Turbine mezz.	OAP-875 OAP-877
GEN V/HZ HI TRIP C-23	(Later - Info Update)	LATER	LATER	59-1 59-2 74GE Gen. protection Relay cabinet	OAP-872
GEN V/HZ HI LIMIT C-33	(Later - Info Update)	LATER	LATER	V/HZ Excitation BKR Turbine mezz.	OAP-872
GENERATOR VOLT REG SIGNAL LOST C-43	1. Voltage Reg. Input from Gen. voltage has been lost probably due to Gen. PT fuse failure. 2.(A) Voltage Regulator trips to MANUAL. (B) Other Voltage Regulator(A/B) has also alarm.	1.(A) Voltage regulator trips to "manual". 2.(A) Take voltage regulator to "OFF". (B) Control volt age with RAISE adjust. (C) Notify electrical dept.	LATER	Loss of sensing KT Excitation BKR Turbine Mezzanine	OAP-875
EXCITOR COOLER AIR TEMP HI C-53	1. Exciter Air Cooling Instituted: (A) High cooler exit cold air temp. (B) High cooler inlet hot air temp. 2. Exciter Air Temp. on RRR-30H Gen. temp recorder points 17 thru 20.	1. Base 2. Increase (for loss temperature) of water to coolers.	47°C Cold Air --- 49°C	TR-22-30 Points 17 thru 20 --- RRR-30H Recorder	OAP-830

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGIN, BOTH INDICATION WHICH VERIFY OR PERMIT DIAGNOSE.	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR FIELD FAIL TRIP C-4	1. Loss of field backup Gen. lockout has tripped Turb. 2.(A) Gen. backup lockout actuation labled (B) RI load indicates "ZERO" (C) Turbine trip valves close d.	1.(A) Generator lockout. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip OFF-Norm. Proc. 2-OP-0030130 (B) Notify Electrical Department.	LATER	76Q2 Backup Lockout Relay KRAB-3H Rear	OAP-865
GENERATOR VOLT REG TRIP C-14	1. Indicates loss of automatic portion of voltage regulator. (Inputs – later) 2. Indicating lights above regulator switch.	1. Voltage regul. to trips to "MANUAL". 2.(A) Turn Volt Reg switch to OFF. (B) Control voltage thru. using RAISE adjust (C) Notify Elect. Dept. to Investigate	LATER	96BB Excitation SCR Turbine mezz.	OAP-875
GENERATOR OVEREXCIT C-24	(later – much better info to follow)	LATER	LATER	K3(GEN-2) Excitation SCR Turbine mezz.	OAP-872
EXCITATION FIRING CKT No. 1 TROUBLE C-34	1.(A) Loss of DC from #1 Firing Ckt. (B) Or, loss of input to #1 Firing ckt. from RFC. (C) Or, loss of pulses which fire the diodes. 2. Note NOTE: Loss of 1 Firing CKT does not cause a loss of generator field.	1. If 100% ckt is not lost, Turbine Trip will occur. 2. Notify Elect. Dept. to Investigate failure.	LATER	#1 Ckt. Breaker Excitation SCR Turbine mezz.	OAP-872
EXCITATION FIRING CKT NO. 2 TROUBLE C-45	1.(A) Loss of DC from #1 firing ckt. (B) Or, loss of input to #1 firing ckt. from RFC. (C) Or, loss of pulses which fire the diodes. 2. Note NOTE: Loss of 1 firing ckt. does not cause a loss of generator field.	1. If 100% ckt is not lost, turbine trip will occur. 2. Notify Elect. Dept. to Investigate failure.	LATER	#2 Ckt. Breaker Excitation SCR Turbine mezz.	OAP-872
GENERATOR VOLT REG FORCING C-54	1. Indicates excessive field current. 2.(A) Exciter Ammeter on KRAB. (B) Voltage regulator output scale.	1. None 2. Reduce reactive load as necessary to reduce field current.	LATER	Forcing Alarm K-4 Excitation SCR Turbine Mezzanine	OAP-875

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OF ENSUING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR DISTANCE B/U TRIP C-5	1.(A) Gen. lockout has been tripped by the back-up distance fault relay. (Resultant distant fault primary SW/D trip CKT failure to clear fault) (B) Gen. lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% P.R. (B) Respective faulted lines OCB's - Open. (C) Lockout actuated behind RTGB-201.	1.(A) Gen. lockout, turbine trip, possible Rx trip. (B) Multiple SW/D OCB's open to clear fault 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130. (B) Notify System Protection Department.	Distance Relay Trip	74,21 Distance Fault Gen. Backup Rly 62-21/882 RTGB-201 Rear	CWD-882
R GENERATOR OCB FAIL/ B/U TRIP C-15	1.(A) Gen. lockout has been tripped by (Later) relay to protect Gen. from adjacent line or bus fault when nearest Gen. OCB fails to open. (B) Gen. lockout trips turbine. 2.(A) Turb. tripped-valves closed, Rx trip if >15% P.R. (B) Backup lockout actuates behind RTGB-201.	1.(A) Gen. lockout, turbine trip, possible Rx trip. (B) Multiple SW/D OCB's open to clear fault 2.(A) Follow Rx trip Off-Norm Proc. 2-0030130 (B) Notify System Protection Dept.	Relay Trip	74CB (Later SW/D Cntl House	CWD-885
GEN BKR 8W9 TRIP C-25	1. Gen. OCB 8W9 (3E) has tripped open. (Any/line BRK is opened). 2. W OCB indicate lights - green.	1. OCB 8W9 open. 2. If Gen. still on line: (A) Notify Div. Dispatcher - try to reclose (B) If unable to close report BRK to Sys. Protection Department	BKR Contacts	52,83/3E (Later)	CWD-886
GEN BKR 8W52 TRIP C-35	1. Gen. OCB 8W52 (3I) has tripped open. (Any/line BRK is opened) 2. 3I OCB indicate lights - green.	1. OCB 8W52 open. 2. If Gen. still on line: (A) Notify Div. Dispatcher - try to reclose (B) If unable to close report BRK to System Protection Department.	BKR Contacts	52,83/3I (Later)	CWD-886
R GEN BKRS 8W9 / 8W52 AIR PRESS LO C-45	1. Lo operating air press. on OCB 3E or 3I; possible low compressor start setpoint or compressor BRK trip	1. BKR air Comp. starts on Lo-Press of 250-260 PSIG. 2. If alarm has not cleared in 10 min; (A) Have operator check comp. BKR locally (B) If alarm persists call Div. Dispatcher	235 PSIG	63-3E/1107 63-3I/1107 Later Ref.lash location?	CWD-886
R EXCITATION EQUIP CLG FAILURE C-55	1. Failure in ventilation equip. for volt reg/ excitation cabinets. (A) Cool fans R1/R2 not running. (B) Or, aux circ. fan not running. 2. None	1. Possible excitation fluctuations if equip. overheats. 2. Check cabinet and reflash panel locally: (A) Switch to alternate fans (B) Notify Electrical Dept. immediately. (C) If no fans running, monitor equipment closely for overheat.	Gravity Damper(s) Closed	RA-T-1 Reflash Module Column East of Excitation SWGR Turbine mezzanine	CWD-875

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ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MN XFMR 2A CURRENT TRIP C-6	1.(A) Primary lockout has been actuated from 2A Main XFMR current differential. (B) Lockout trips turbine. 2.(A) Turbine trip valves closed, Rx trip if >15% PWR. (B) Target drop on Main XFMR diff. current relay and lockout actuated behind RTGB 201.	1.(A) Lockout ... [illegible] (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc 2-0030130 (B) Consult Main XFMR O-N Proc. 2-0910031 2-0910031	Diff. Relays Trip	74FA 87TA/87B RELAYS (3) Behind RTGB 201	CWD-885
MN XFMR 2A FAULT PRESS TRIP C-16	1.(A) Prim. lockout has been actuated from high rate of press. increase in 2A main XFMR. (Indicates internal fault) (B) Lockout trips turbine. 2.(A) Turbine trip valves closed, Rx trip if >15% PWR (B) Fault press. relay blinking, lockout actuated, both behind RTGB-201.	1.(A) Lockout ... [illegible] (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030120 (B) Consult Main XFMR O-N Proc. 2-0910031.	90-150 mm Hg Pressure Increase	74 FP-1 63X1/884 RELAY Behind RTGB 201	CWD-884
MN XFMR 2A GRD CURRENT TRIP C-26	1.(A) Backup lockout has been actuated from Ground on 2A main XFMR. (B) Lockout trips the turbine. 2.(A) Turbine trip valves closed, Rx trip if >15% PWR. (B) Target drop on Main XFMR ground relay and lockout actuated behind RTGB 201.	1.(A) Lockout ... [illegible] (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 (B) Consult Main XFMR O-N Proc. 2-0910031.	Ground Relay Trip	74GNA 51TNA/87B RELAY Behind RTGB 201	CWD-885
MN XFMR 2A ALARM PANEL C-36	1. Local XFMR panel in alarm, indicating abnormal condition with XFMR. (Later) 2. None	1. None 2.(A) Have operator check alarm panel at XFMR. (B) Refer to Main XFMR O-N Proc. 2-0910031.	LATER	74X1, 74X2 74X3 2A Main XFMR Control Cabinet	CWD-863 863
MN XFMR 2A ALARM PANEL EMERG COND C-56	1. Local XFMR panel in alarm, with a more serious alarm: (A) Loss of 480V power to cooling fans. (B) Or, loss of 125 VDC to alarm panel. 2. None	1. None 2.(A) Have operator check XFMR panel locally (B) Notify Electrical Department	LATER	74X4 [illegible]X 2A Main XFMR Control Cabinet	CWD-863
MN XFMR WINDINGS TEMP HI C-56	1. High temp. on 2A and/or 2B main XFMR [illegible]. 2.(A) Temp. recorder TR-22-30, points 13, 14. (B) Hi reactive load on generator. (B) Hi reactive load on generator. (C) Hi current output on generator.	1. None 2.(A) Verify alarm (B) Verify all fans & cooling pumps running (C) Start reducing reactive load, then MW load until alarm clears.	115°C	TR-22-30 Points 13, 14 RTGB-201 Recorder	CWD-860

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

VERTICAL PANEL C VERTICAL ORDER 7

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR MAY INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
2B XFMR 2B CIRCUIT TRIP C-7	1.(A) Primary lockout has been actuated from 2B Main XFMR current differential. (B) Lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (B) Target drop on Main XFMR diff. current relay and lockout actuated behind ERGB-2B.	1.(A) Lockout actions. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030133 (B) Ground Main XFMR O/H Proc. 2-0030130. (C) Notify Division Dispatcher.	Diff Relays Trip	74TB 2A XFMR DIFF. Relays (3) 87TA/87B Behind ERGB 2B	GAD-835
2B XFMR 2B FAULT PRESS TRIP C-17	1.(A) Primary lockout has been actuated from high rate of pressure increase in 2A main XFMR. (Indicates internal fault). (B) Lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (B) Fault press. relay blinking, lockout actuated both behind ERGB-2B.	1.(A) Lockout actions. (B) Turbine trip, possible Rx Trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (B) Ground Main XFMR Off-Normal Procedure No. 2-0030134.	90-150 milsec sudden pressure increase	74PT-2 2B Fault Press Relay-63B2 Behind ERGB 2B	GAD-284
2B XFMR 2B GND CURRENT TRIP C-27	1.(A) Backup lockout has been actuated from 2B Main XFMR ground. (B) Lockout trips the turbine. 2.(A) Turbine valves closed, Rx trip if >15% PWR. (B) Target drop on 2B main XFMR ground relay and lockout actuation behind ERGB-2B.	1.(A) Lockout actions. (B) Turbine trip, possible Rx trips. 2.(A) Follow Rx trip Off-Normal Procedure 2-0030130. (B) Ground main XFMR Off-Normal Procedure 2-0030134.	Ground Current Relay Trip	74TBB Main XFMR 2B Ground Relay 51TBB Behind ERGB 2B	GAD-885
2B XFMR 2B ALARM PANEL C-37	1. Local XFMR control panel in alarm from: (A) Lo-flow on cooler (1 2 3 4 or 5) (D) Hot Spot (B) Oil - lo level (2) (C) Loss of AC PWR (C) Pressure relief actuate (F) Gas Detector 2. Horn	1. None 2.(A) Have Operator check alarm panel at XFMR (B) Refer to Main XFMR Off-Normal Procedure No. 2-0030134.	(A) (B) (C) (D) LADR (E) (F)	74X1, 74X2 74X3 2B Main XFMR Control cabinet	GAD-864
2B XFMR 2B ALARM PANEL HIGH TEMP C-47	1. Local XFMR panel in alarm which is 2 level of higher severity than (C-37). (A) Loss of 480 VAC power to cooling fans. (B) Or, loss of 125 VDC to alarm panel. 2. Horn	1. None 2.(A) Have Operator check XFMR panel and PWR supply 480 locally. (B) Follow Main XFMR O/H Procedure 2-0030134 (C) Notify Elect. Prod. & Dis. Dispatcher.	LADR	74X4, 11X 2A Main XFMR Control cabinet	GAD-864
XFMR FIRE DETECT SYS LOCAL ALARM R C-57	(LADR) Use Info Booklet	(LADR) Use Info Booklet	LADR	RA T-2 LADR	GAD-859

OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. OUTSIDE NSM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. ARE ACTED 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
AUX XFMR 2A OVERHT TRIP C-8	1.(A) Primary lockout has been actuated from 2A Aux XFMR current differential. (B) Lockout trips the turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% RTP. (B) Lockout actuated behind RTGB-201.	1.(A) Lockout actuated. (B) Turbine trip, possible Rx trip. 2.(A) Follow Loss of Offsite Power Off-Normal Procedure No. 2-0030130. (B) Consult Aux XFMR O/N Proc. No. 2-0910032. (C) Notify System Protection Department	LATER	74 ATA Diff current relays on 2A2 4160V bus BUS panel 1A2-2A2-4	O30-853
AUX XFMR 2A FAULT PRESS TRIP C-14	1.(A) Backup lockout has been actuated from high rate of pressure increase in 2A auto XFMR. (Indicates internal fault). (B) Lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% RTP. (B) Fault press. relay bleeding, lockout actuated, both behind RTGB-201.	1.(A) Lockout actuated. (B) Turbine trip, possible Rx trip. 2.(A) Follow Loss of Offsite Power Off-Norm Proc #2-0030130 (B) Consult Aux XFMR O/N Procedure 2-0910032 (C) Notify System Protection Department	90-150 millibar pressure increase	74FT-3 63X fault press Relay behind RTGB 201	O30-854
AUX XFMR 2A 4KV GROUND C-21	1. Ground exist on 2A Aux XFMR 4.2 kv side windings 2. None	1. None - alarm only. 2.(A) Follow Aux XFMR off-Normal Procedure No. 2-0910032. (B) Notify System Protection Dept.	LATER	64/ATA-2 Ground relay on 2A2 4160V bus BUS panel 1A2-2A2-4	O30-910
AUX XFMR 2A 6.9KV GROUND C-28	1. Ground exist on 2A Aux XFMR 6.9KV bus side windings 2. None	1. None - alarm only. 2.(A) Follow Aux XFMR Off-Normal Procedure 2-0910032. (B) Notify System Protection Dept.	LATER	64-ATA-1 GROUND RELAY ON 2A2 4160V bus BUS panel 1A2-2A2-4	O30-910
AUX XFMR 2A ALARM PANEL C-35	1. 2A Aux XFMR panel in alarm from: (A) Oil-lo level/Hi temp/lo flow (B) Gas-pressure relief actuate (C) Gas Detector (D) Hot spot temp Hi 2. None	1. None - alarm only 2.(A) Have operator check panel locally. (B) Consult Aux XFMR Off-Normal Procedure 2-0910032. (C) Notify Electrician Dispatcher if necessary	(A) (B) (C) (D)	74X-1, X2, X3, X4 BUS, 6W Alarm relays in Aux XFMR Control cabinet	O30-909
TRANSFORMER FIRE C-42	(LATER - Info check)	(LATER - Info check)	LATER	CR-1, CR-2, CR-3 (LATER)	O30-859

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 9

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ANN INDICATION WHICH VERIFY OR PROBABLE CAUSE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
AUX XFMR BUS FAULT/ O/C TRIP C-9	1.(A) (Later – Case) (Actuation Bf lockout) (B) Lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% RTP. (B) LATER and lockout actuator: Initial Ex8-208.	1.(A) Lockout actions (B) Turbine trip, possible Rx trip. 2. Subsequent trip OFF-Normal Proc. #2-0030130. (A) Notify Div. Dispatcher & Sys. Prot., Dept. (B) Consult Asst. Supt. O/H Proc. 2-0010012.	LATER	74FB - - - - - - - - - - - LATER	040-885
GENERATOR LOCKOUT TRIP C-19	(LATER)	(LATER)	215 PSID BF Turbine and 2/4 DE TEMP BF 205° F or (B) Field Bkr closed >1min	74M/885 – (1.48ly) PDIS-22-4 1/885 (F) 41AX3/883/885 BE EX-3/710/865 - - - - - - - - - - - Turbine – Ex. 5AR	040 833, 885 710 1540 (Later)
GENERATOR LOCKOUT C-29	(LATER)	(LATER)	LATER	74MP - - - - - - - - - - - LATER	040-885
GENERATOR LOCKOUT 1/ BF TRIP C-39	(LATER)	(LATER)	LATER	80AF - - - - - - - - - - - LATER	040-882
GENERATOR LOCKOUT BUCHHOLZ OPT/TRIP C-59	(LATER) (CS-848 SH)	(LATER)	LATER	CHE, CH-838 - - - - - - - - - - - LATER	040-883
GENERATOR 59.5 HZ WARNING C-79	1. Generator frequency has decreased to 59.5 Hertz with the generator breakers closed. 2.(A) Frequency meter (B) Frequency recorder NOTE: Alarm is generated by a recorder.	1. Bkrs. to trip automatically; but if freq. decays to (later) an HF lockout will occur. 2. Prepare for possible separation from the grid.	Frequency Recorder 59.5 HZ with Gen. Bkrs closed	F-803/881 52 GCA/885 - - - - - - - - - - - Recorder KRR-201	040-882 040-885

ANNUNCIATOR PANEL C VERTICAL COLUMN 10

2

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR BOOTH INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AUTO ACTION 2. OPERATOR ERROR - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
AUX XFMR 2B DIFFERENTIAL TRIP C-10	1.(A) Primary lockout has been actuated from 2B Aux XFMR current differential. (B) Lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (B) Lockout actuates lockout RELAY 201.	1.(A) Lock-out actions. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (B) Consult Aux XFMR O/N Procedure 2-0910032. (C) Notify System Protection Department	(Later)	74 AUX DIFF current rlys on 2B2 4160V bus 1Ar panel 152-282-1	OAD-B83
AUX XFMR 2B FAULT PRESS TRIP C-20	1.(A) Back-up lockout has been actuated from high rate of pressure increase in 2B Aux XFMR. (Indicates internal fault) (B) Lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (B) Fault press. relay BUCHHOLZ lockout actuated.	1.(A) Lock-out actions. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (B) Consult Aux XFMR O/N Procedure 2-0910032 (C) Notify System Protection Dept.	90-150 on lg sudden pressure increase	74 FT-4 6384 Fault Press Relay, lockout RELAY-201	OAD-B84
AUX XFMR 2B 480V GROUND C-30	1. Ground exist on 2B Aux XFMR 480V bus/cable windings 2. None	1. None alarm only. 2.(A) Follow Aux XFMR Off-Normal Procedure 2-0910032. (B) Notify System Protection Department	(Later)	64/ABF-2 Ground relay on 2A2 bus 1Ar panel 152-282-1	OAD-911
AUX XFMR 2B 6.9KV GROUND C-40	1. Ground exist on 2B Aux XFMR 6.9KV bus/cable windings 2. None	1. None alarm only 2.(A) Follow Aux XFMR Off-Normal Procedure No. 2-0910032. (B) Notify System Protection Dept.	(Later)	64/ABF-1 Ground relay on 2A2 4160V bus 1Ar panel 152-282-1	OAD-911
AUX XFMR 2B ALARM PANEL C-50	1. 2B Aux XFMR panel in alarm from: (A) OIL - hi level / lo temp / lo press (B) Overpressure relief actuated (C) Gas detected (D) Hot spot temp HI 2. None	1. None alarm only 2.(A) Have operator check panel locally. (B) Consult Aux XFMR Off-Normal Procedure 2-0910032. (C) Notify Division Dispatcher if necessary	(A) (B) Later (C) (D)	74X1, X2, X3, X4 ECX, 6W Alarm relays in Aux XFMR Control Cabinet	OAD-909
AUX / STARTUP XFMR WINDING TEMP HI C-60	1. High winding temp. exist on 2A, 2B aux XFMRS, or 2A, 2B S/U XFMRs. 2. Temperature recorder TR-22-30 - RELAY 201 Points 1-8	1. None 2.(A) Check XFMR cooling locally. (B) Reduce loads on XFMR within plant. (C) Notify Division Dispatcher if necessary	80° C Winding Temp	TR-22-30 Points 1-8 Temp. Recorder RELAY-201	OAD-B63

ANNUNCIATOR PANEL D VERTICAL COLUMN 1

UNIT 2 TITLE	1. INDICATED CONDITION 2. OTHER ANN. OR INDICATION WHICH VERIFY OR PERSONNEL RESPONSE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
SG 2A/2B LEVEL HI-HI/ TURBINE/RX PT 2A/2B TRIP D-1	1. HI-HI S/G level either S/G (2A or 2B): (A) Tripped the turbine (B) Closed the 10E MV bypass MOVs (C) Tripped off 2A & 2B auto feed pumps 2.(A) Steam Gen. level indications. (B) Turbine trip, Rx trip if >15% power. (C) Main feed pumps trip indications.	1.(A) Turbine trip, possible Rx trip. (B) Main FW pumps 2A-2B trip (C) Both 10E FW bypass MOVs close. (D) Turbine trip closes main feed reg. and open 1/2 feed reg to 5% flow. 2.(A) If still on-line; restart MFW when S/G level decreases to <90%. (B) If Rx trips; follow Rx trip OFF-Normal Procedure No. 2-0030130.	90% Level (2/4 same S/6)	741/In RTGB 201 LIO-9013 A, B, C, D LIO-9023 A, B, C, D on RTGB-312	GAI-709 GAI-711 P&ID 2998-079 Sheet 1 of 2
RMW TURB OIL RSVR VPR EXHR OFF D-14	1. Tub. lube oil resv. vapor extractor motor has: (A) Tripped on overload (B) Blown fuse in start circuit (C) Bkr opened at MCC-2B1 (D) Oc, Control switch to stop. 2. Extractor breaker indicates tripped or open.	1. None 2.(A) Restart extractor if possible. (B) Go to air jet vapor extractor to vent lube reservoir. (C) Notify Electrical Department	O.C. Trip 63 Amps CS to "STOP"	42 Trip Coil 2-4162B/MCC-2B1	GAI 715 PD & MD 2998-B-3D Sheet #24
TURBINE LUBE OIL CONDR FILTER LVL HI/LO D-21	1. Tub. lube oil conditioner high or low level, or conditioner filter has been detected as dirty 2. None	1.(A) HIGH – drain solenoid valve (B) LOW – stops lube oil filter pump 2.(A) Check conditioner level locally. (B) Correct condition or secure the oil conditioner from service.	High – (Later) Low – (Later) Dirty – (Later)	15-17-4 15-17-5 15-17-11 level switches on lube oil conditioner unit	GAI 734
TURBINE BRG LIFT OIL PP OVLD TRIP D-31	1. Turbine BRG lift oil PP motor has: (A) Tripped on overload (B) Blown fuse in start circuit (C) Breaker manually opened at MCC-2B1 2.(A) Pump Bkr indicating light not lit. (B) Turning gear engaged light lit.	1.(A) Lift pump stops (B) If no oil lift press.; turning gear stops 2.(A) Attempt to reset/restart lift pump motor (B) Notify Electrical Department.	O.C. trip 180 Amps	74 Trip Coil Bkr 2-4162A/MCC-2B1	GAI 732 PD & MD 2998-B-3D Sheet #24
TURBINE TURNING GEAR HIC ON/OFF BRG SHAFTED D-41	1. Turning gear/turbine not rotating or failed to by: (A) Tripped on overload (B) Blown fuse in start circuit (C) Breaker manually opened at MCC-2B (D) Control switch placed in "OFF" (E) Oc, turbine shaft has stopped rotating 2. Turning gear indications.	1. If turning gear trips, turbine rotation will stop. 2.(A) Attempt to reset/restart/reengage turning gear motor. (B) Notify Electrical Dept. If necessary (C) If turbine is hot, and no rotation, see Turbine Tech Manual for actions	Thermal Overload or O.C. Trip 686 Amps ZSL (Later)	74 14/ZSL (Valid Pt Later) Trip Coil Bkr 2-4258/MCC-2C	GAI 730 TSID Later PD & MD 2998-B-3D Sheet #3c
SEAL OIL B/U PP OVLD TRIP D-51	1.(A) Seal oil back up pump has tripped on motor overload. (B) Oc, pump motor Bkr has been (Later) 2.(A) Hydrogen, generator seal oil back up pump (Later)	1.(A) (Later) 2.(B) (Later)	Thermal Overload or 250 Amp O.C. Trip	74 Trip Coil Bkr 2-4618/MCC-2B1	GAI 727 P&ID 2998-B-3D Sheet 3/5

OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 7

2

ORIGINAL TYPE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PROVIDE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE BRG OIL PRESS LO TRIP D-2	1. Later (Alarm/pump start?) 2.(A) Bearing lube oil hdr pressure low. (B) Turbine trip, valves closed, Rx trip if >15% RTP	1.(A) (Later) pump starts (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip OFF-Norm Proc #2-0030130 (B) Start or restart AC bearing oil pump	5-7 PSIG decreasing	74LBO -	GAI-711
TURBINE BEARING OIL PRESS LO D-12	1. Turbine bearing oil header pressure low. 2. Turbine bearing oil header pressure gage indicates < (Later) PSIG.	1. If pressure continues to decrease, turbine 2.(A) Start/restart AC bearing oil pump (B) If pressure continues to decline, prepare for unit trip.	6-8 PSIG decreasing	63LBO - - - - - - - - - - - -	GAI-711
TURBINE BEARING OIL TEMP HI D-22	1. Turbine bearing return line oil hi temperature. 2.(A) Turbine temp. recorder; bearing and oil return temperatures.	1. None 2. (Later - Turbine start up Proc Ref)		TES-22-5 Temperature Ind. Switch - - - - - - - - - - - -	GAI-795
TURBINE BRG OIL PP OVLD TRIP D-32	1. Turbine AC bearing oil pump has: (A) Tripped on overload (B) Or, pump has been operated at 1840-2C 2.(A) Pump indicating lights - out or green. (B) Decreasing bearing oil pressure (C) Excess bearing oil pump running	1. Emergency DC oil pump will start on pressure decays. 2.(A) Start Backup DC oil pump if not already running. (B) Examine dispute oil supply to bearings or trip to line	Thermo Ovld or 950 Amp O.C. Trip	74 - - - - - - - - - - - - Over-current trip in Bkr 2-42306/1833-2C	GAI 735 - - - - - - - - - - PID & MD Sht #26
TURB BRNG BRG OIL PP RUNNING D-42	1. Alarm in in anytime AC bearing oil pump running (A) Auto starts on low pressure at ___ later (B) CS start will also give alarm. 2.(A) AC bearing oil pump indicate light = red. (B) Turbine bearing oil header pressure low.	1. None 2. If interest at on low pressure: (A) Examine dispute supply/pressure of oil to bearings. (B) Determine cause for automatic.		MZ - - - - - - - - - - - -	GAI-735
TURB BRNG BRG OIL PP OVRLD/ OVHT MOTOR TRIP D-52	1.(A) Emerg DC B. O. pump has tripped on overload (B) Or, DC mtr control power is lost. 2.(A) Emerg DC oil BRG oil PP indicate lights out or green	1. Pump trips 2.(A) Start AC bearing oil pump if possible (B) Determine cause for overload trip	Thermal Overload	74 49 - - - - - - - - - - - - Thermal overload in Bkr 2-G0400/1.25 VHC - 2C	GAI-735 - - - - - - - - - - PID & MD Sh 66C

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE VACUUM LO TRIP D-3	1. Turbine has tripped due to low condenser vacuum. 2.(A) Turb. trip valves closed, possible Rx trip if >15% power. (B) Condenser vacuum indicates <22"H.	1.(A) Turbine low vacuum auto trip (B) Possible Rx trip 2.(A) Follow Rx trip Off-Norm Proc #2-0030130 (B) Consult loss of vacuum O/N Pro. 2-0610031	18-22" H_g decreasing vacuum	74LV Vacuum Trip Device Turbine Front Standard	CWD-711 P&ID (Later)
TURBINE VACUUM LO D-13	1. Indicates low condenser vacuum exists in main Cond. 2.(A) Condenser vacuum-lo/backpressure-hi (B) Gland seal steam indication (C) SJAE Steam Pressure (D) Circ water temp.	1. None, until vacuum decreases to trip setpt. 2. Follow loss of condenser vacuum Off-Normal Procedure #2-0610031.	25" H_g decreasing vacuum	63/LV (Later) - - - - - - - (Later)	CWD-711 P&ID (Later)
VACUUM TRIP RESET LATCH ENGAGED D-23	1. Vacuum trip latches has been reset at no vacuum condition and is now in the hi press. trip mode set for 13 PSIG trip press, not 25" vacuum. (Loss of turbine protection) 2. None	1.(A) Turbine trip on LOW VACUUM has been defeated. (B) Later 2.(A) Check vacuum trip latch locally, reposi. if applicable for present vacuum. (B) Notify I & C Dept. if necessary	Trip in Latch position w/ <19" Hg vacuum (OSP Trip) (LATER)	33/NO 33/VRL vacuum trip / (Later) - - - - - - - Turbine Front Standard	CWD-711 P&ID (Later)
VACUUM BRK VLV 1A/1B OVERLOAD D-33	1. Loss of motor operating capability for 2A or 2B vacuum breaker valves from: (A) Overload trip of breaker(s) (B) Breaker(s) opened at respective 480V MCC (C) Blown Control circuit fuse(s). 2. Valve position lights are extinguished.	1. None 2.(A) Try to reset thermal overloads. (B) If no reset, stroke Man. if necessary (C) Contact Electrical Department	Thermal Overload 8 Amp O.C. Trip (Each Valve	74/754 74/755 Thermal Overload or Magnetic Trip in (1A) 2-40815/MCC 2A1 (1B) 2-41622/MCC 2B1	CWD-754 CWD-755
TURBINE LUBE OIL RSVR LEVEL HI/LO D-43	1. Indicates HI or LO level exist in turbine lube oil reservoir. 2. None	1. None 2.(A) Verify indication at reservoir. (B) If low, look for system leak. (C) If level rapidly decreasing; lower load & remove unit from the line. (D) If high; check valve lineup, conditioner and possible L.O. cooler TCW leak.	+/- 30" From Normal Level of 45.5"	71/OH/H 71/OL/H LS-22-3 - - - - - - - Level switch in lube oil reservoir	CWD-726 P&ID (LATER)
SJAE STEAM PRESS LO D-53	1. Indicates steam to SJAEs is low. 2. Decreasing steam pressure on indicator.	1. Possible loss of condenser vacuum. 2. Follow loss of condenser vacuum Off-Normal Procedure 2-0610031.	(Later) PSIG decreasing	PS-12-31 (Later) - - - - - - - (Later)	CWD-669 P&ID (Later)

2

REFERENCE: PANEL D VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. ONBOARD ROOM INDICATION VERIFY OR PERFORM TASKS	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE EXHAUST HOOD TEMP HI D-5	Check Trip Info			7401 - - - - - - - - - -	OAP-711
TURBINE EXH HOOD TEMP HI D-15	1. Exhaust hood temperature is high, due to possible (A) Lo/no steam flow for extended period (B) High back pressure operation (C) Insufficient EXH spray flow. 2. Turbine temp recorder (Later) Points (Later)	1. Turbine (Later) (trip or lockout) temp. increases to (Later) °F. 2.(A) Exhaust Hood spray valves are open fully. (B) Pickup load/increase steam flow (C) Increase vacuum.	175°F	26/EHF-1 26/EHF-2 - - - - - - - - - -	OAP-711
GLAND SEAL STEAM PRESS HI/LO D-24	1. HI or lo gland seal steam pressure. Check on 1Y or 2Y # HR2) 2. Gland seal steam HR pressure gauges (high and low)	1. None 2.(A) Check regulation locally - check valve line-up. (B) Regulate steam pressures using bypass and block valves as required.		6V/GS 1, 4, 5, 6 - - - - - - - - - -	OAP-711
GLAND STEAM COND RSVR LEVEL HI/LO D-35	1. HI or lo level in gland steam condenser condensate reservoir tank. 2. None	1.(A) HIGH - pump should start before alarm level is reached. (B) LOW - (Later) 2.(A) Check tank locally (B) Later	HI - Low -	LS-12-12 Low LS-12-13 High - - - - - - - - - - Pressure Level	OAP-774
GLAND STM CONDR EXHR 2A/2B OVRLD TRIP D-45	1. Overload trip on 2A or 2B gland steam condenser exhauster. 2. Running exhauster failed to Hi-Lo - out.	1. None 2.(A) Start standby exhauster (B) Open valve for standby exhauster close valve on tripped exhauster. (C) Call Electrical Department		74/768 74/769 - - - - - - - - - -	OAP-768 OAP-769
AFS STEAM HDR PRESS LO D-55	1. Low pressure on RAB Aux Steam supply header. 2. Aux steam supply pressure gauge.	1. HI temp. in RAB will isolate steam line. 2.(A) Pressure regulator check regulated supply locally (B) Check for casual change or possible leak.		15-16-3 - - - - - - - - - -	OAP-669

ANNUNCIATOR PANEL D VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. OBTAIN ADDITIONAL INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE OVERSPEED TRIP D-5	1. Turbine trip on 111.5% overspeed from (Later) 2.(A) Turbine trip-valves closed, possible Rx trip if >15% PWR.	1.(A) Turbine trip. Possible Rx trip. (B) Generator lock-out trip if turbine trips with GCB's closed. 2.(A) Follow E trip OFT Abnormal Proc #2-0030130	111.5% of rated speed (3000) RPM	74th (Later PEH & MS317) (Later)	OAD-711 (Later)
TURBINE VIBRATION ABNORMAL D-15	1. Turbine vibration excessive on one or more turbine bearings. 2. Vibration as indicated/printed on VM/EDC recorder Later Points Later .	1. Note: 2.(A) Check lube oil parameters. (B) If Vib. trend shows an increasing trend, reduce unit load. (C) If vibration [illegible] unit trip unit	(Later?) 7 mils (out-out) (below) (600 RPM)	PM/VB Later Later	OAD-711
TURB ROTOR EXPAN/ECCY ABNORMAL D-25	1. Indicates rotor eccentricity high. (Bending of the rotor) 2. Eccentricity recorder indication/printout.	1. Note 2. Consult Turbine Generator Tech Manual for actions.	Later	No. 1, 2 Rotor Long No. 1, 2 Rotor Short (Later Inhibit KRUB?)	OAD-711
BLANK D-35					
REHEATER TEMP HI D-45	1. HI-Steam temp. at LP turbine inlet from RCP. 2.(A) LP turbine inlet temp. as indicated from RCP Panel temp. gauges, and turbine temp recorder. (B) HI temp valve trip light on RCP panel.	1. HI temp. will cause all reheater RVs to close. 2. Steam temp Indicates: (A) Reset RCP panel (B) If valves don't reopen; reduce load conditions for no HIRs. (All more Later)	LATER	RCP PANEL High Temp Alarm Reheater control Valves Panel KRUB-208	OAD-699
MAIN FEED TEMP HI D-55	1. Temp. MFW fluid has risen to 1[illegible]°F or (Later) reservoir? 2. Note:	1. Note: 2. Increase CF flow or decrease MW temp.	138° F (check Later)	26HH	OAD-721

ANNUNCIATOR PANEL D VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ANN. AND INDICATION WHICH VERIFY OR PERTINENT REMARKS	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
TURBINE THRUST BRG TEMP D-6	1. Hi-press. from thrust brg. wear detector indicative of axial Turb. shaft movement, has tripped turbine 2. Hi thrust brg face temp. hi; temp. rec. TR 22-1, Points 1, 2, 15, & 16.	1.(A) Turbine automtd trip (20/AST). (B) Rx trip if >15% power. (C) Gener. door lockout if Gen. CBs shut. 2.(A) Follow Rx trip Off-Norm Proc #2-0030130 (B) Notify Mech. Maint. - DO NOT attempt to have restart until checked.	(Later) PSIG	74/78 (Later)	080-711
TURBINE THRUST BRG MIN-TEMP D-16	1. Hi-press. from thrust brg. wear detector indicative of axial turbine shaft movement. 2. Hi thrust brg face temp. hi; temp. rec TR 22-1, Pnts 1, 2, 15, 16.	1. None 2.(A) Monitor bearing temps closely. (B) Ensure Emrg Seal/Lift bearing oil pp. removal from service is consistent with load	(Later) PSIG	61/78 (Later)	080-711
TURBINE BEARING TEMP HI D-26	1. HI TURB BRG Temp. from temp. recorder 2.(A) TURB Temps. recorder TR 22-1, points (B) TURB oil header temp. indicator	1. None 2.(A) Check lube oil coolers and TCW to reduce temperature. (B) Reduce load to decrease temperature (C) If bearing temp reaches (Later)° F		TR 22-1	080-794
EHH FP 2A/2B OVOLD TRIP D-36	1. Running EHH pump has tripped on overload. 2. EHH pump indicating lights - out.	1.(A) Standby EHH pump starts. (B) Turb./Rx trip may occur if press. delays 2.(A) Immediately start standby PP if not run. (B) If turb. trips, refer to Rx trip Procedure No. 2-0030130 (C) Notify Electrical Department		74/720 74/721 Later	080 720
EHH RESERVOIR PRESS HI D-46	1. Indicates fluid return to reservoir press. high probably due to plugged return filter. 2. None	1. None 2.(A) Have operator select filter not in use. (B) Notify Mech. Maint. Dept.	(Later) PSIG	6788 (Later) (Later)	080 731 1540 (Later)
EHH RESERVOIR LEVEL LO-LO D-56	1. Lo-lo level in EHH reservoir is close to causing a EHH lockout. 2. (A) EHH pumps trip off - green lights (B) EHH lockout actuated (also EHH-50).	1.(A) EHH lockout - pumps trip. (B) Possible turbine/Rx trips. 2.(A) Try to reset lockout quickly & restart EHH pumps. (B) If turb./Rx trips; refer to Rx trip Abnormal Procedure 2-0030130.	(Later) Indicat from bottom	71/73 (Later) (Later)	080 731 1540 (Later)

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE GEN LUBOIL DEP D-7	Later	Later Investigate	Later	74: Later	GAD-711
TURBINE TRIP SOV/ AUTO STOP DC FAILURE D-17	1. Indicates power lost to trip circuitry for 20 AST and/or ET electrical trip circuits. 2. None	1. Trip circuit failures will block some trips 2.(A) Station operator at turb. front standard with direct communications to room for manual trip purposes until problem resolved. (B)	Later	74/710 74/711	GAD-711
TURBINE RUNBACK D-27	1. Turbine runback has been actuated from: (A) Loss of both heater drain pumps (>92%). (B) Loss of one main feed pump (>60%). 2.(A) Turbine load decreasing at 2.5%/sec. (B) Indications associated with loss of main FD PP or heater drain pump.	1.(A) Loss of both htr drain PP; runback to 92% (B) Loss of feed PP; runback to 60% 2.(A) Take actions to stabilize unit (B) Follow loss of feed O/H Proc. 2-0030060. (C) If Rx trips, follow Rx Trip O/H Proc. No. 2-0030130.	(Later trip set) Runs back to TPS from of (A) or (B)	RX1 (Later) (Later)	GAD-712
EHC PP 2A/2B FILTER /P D-37	1. Indicates high differential pressure across 2A or 2B EHC (Later) EHBorn. 2. None	1. None (check below) 2.(A) Start opposite pump (B) Remove pump with high ΔP from service, and have Mechanic clean strainer.	(Later) PSID	63D/MPP-1 63D/MPP-2 EH Fluid Reservoir	GAD-720 GAD-721 PSID (LATER)
EHC PP DISCH PRESS HI/LO D-47	1. EHC PP Disch. press. hi or lo (Later check case) 2. EH fluid header pressure goes.	1. Backup PP starts on lo press. 2.(A) W/hi press.; start backup PP & secure operating pump. (B) Notify Mechanical Maintenance Department (check this)	Hi - (Later) Lo -	63P 63P EH Fluid Reservoir	GAD-721 PSID (LATER)
EHC RESERVOIR LEVEL HI LO D-57	1. EH fluid reservoir has high or low level. 2. None	1. None 2. Have operator check level locally: (A) If rapidly decreasing: prepare for EHC lockout and subsequent turbine trip. (B) If High: drain down, slowly. (C) If Low: determine cause, have Mechanical Maintenance fill reservoir.	Hi - Lo - (Later)	71FL-1 71FL-2 EH Fluid Reservoir	GAD-720 PSID (LATER)

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE REACTOR TRIP D-8	1. Mech. solenoid trip from Rx trip (loss of voltage on OEA trip bus). 2.(A) Rx trip BRK open – OLAs on button. (B) Turbine tripped – valves closed.	1. Turbine trip (2/4SI) 2. Follow Rx trip OFF-Normal Proc. 2-0030130.	(2/4) 0 Voltage	7AR - - - - - - - - - - - (later)	OAD-711
EXTR STEAM DRIP TNK LEVEL HI D-18	(later)	(later)	(Later)	IS-10-6A, B IS-10-7A, B IS-10-8A, B (LATER)	OAD-1292 OAD-1293
125V DC BUS 2C BATT CHGR 2C TROUBLE R D-28	1. Trouble on 2C battery charger. (later) 2.(A) 2C battery bus voltage. (B) In-plant elect. frequency and voltage.	1. None 2.(A) Check batt. CHG and its refleh panel. (B) Notify Elec. Dept. If necessary.	A) B) C) D) E) F)	RA-T-8/999 Refleh Panel - - - - - - - - - - - Refleh – (later) Charger – Turbine BLDG Room	OAD-999
125V DC BUS 2C GROUND D-38	1. Ground on 2C 125V VDC bus 2. None	1. NONE 2.(A) Follow DC GR ISOL. OFF-Norm. Procedure (B) Notify Elec. Dept. If necessary	(Later)	64P, 64N, CAR 125V DC Bus Turbine BLDG Room	OAD-999
125V DC BUS 2C UNDERVOLTAGE D-48	1. Voltage has delayed on 2C 125V DC bus to LATER V. 2. 2C DC bus voltmeter on RTGB-201.	1. None (Later-possible dgt. trip?) 2.(A) Check charger operation locally. (B) Contact Electrical Dept.	(Later)	27 - - - - - - - - - - -	OAD-999
EH RESERVOIR LOW/HI TEMP/FAIL D-58	1.(A) EH reservoir low-low level has caused EH lockout to actuate, stopping EH pumps. (B) Or, lockout relay has lost DC control power. 2.(A) Check EH pumps – If at EH running then lockout relay has lost DC power. (B) Check lockout behind RTGB-201. (C) Check other Rx. Level Annunciators D-57	1. Turbine/Rx trip from low EH HDR press. If pumps are not running. 2.(A) Lockout situation; try to reset lockout & restart PMPs. If no PMPs restart try to reduce turb./Rx load as low as possible prior to trip. Then follow Rx trip O/N Procedure No. 2-0030130. (B) If EH Pmp continue to run; have operator check reservoir level. (C) If relay has lost power, call Elect. Dept.	(LATER)	74-1 86LFT/720	OAD-720

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 9

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DEH SYSTEM DC BUS FAIL TURB TRIP D-9	1. Loss of 125 V DC bus inside DEH control cabinet has caused a turbine solenoid trip. 2.(A) Turbine trip - valves closed, possible Rx trip if >15% power. (B) Loss of turbine DEH indication/response.	1.(A) Turbine trip (3AOR) (B) Rx trip if >15% pwr. (C) Gen. isolat actions if turb. trip with CBs closed. 2. (A) Follow Rx trip O/N Proc. 2-0030130 (B) Notify I & C Department.	(Later)	74/DCP (Later) - - - - - - - - - - -	GAI-711
DEH DC SUPPLY TROUBLE D-19	1. Loss of ±15, ±10 or 48 volt bus in DEH controls has (tripped to manual?) (Later) 2. (Later)	1. (Later) 2. Contact I & C to pinpoint & repair fault.		DEH (Later)	GAI-717
HYDROGEN SEAL ALARM PANEL D-29	1. Alarm on local hydrogen control panel. (One or more of 12 alarms) 2. Problems with seal oil or hydrogen system.	1. Seal oil back-up pump starts on low press. 2. Have operator check local alarm panel for dropped target.	(Later)	RI/DRL (Later) - - - - - - - - - - - (Later)	GAI-867
GEN H, /WATER AIR TO CLR TEMP HI D-39	1. High temp. of hydrogen or air at respective cooler inlet. (From temp recorder) 2.(A) Generator temp. recorder TR-22-30 points (AOPR).	1. None 2. Follow main generator Off-Normal Procedure (2 Later)	(Later)	TR-22-30 PT'S, 15, 16, 19, 20 (Later)	GAI-890
GEN H, WATER CLRS TEMP HI D-49	1. High temp. of hydrogen or air at respective cooler disch. (Gen. temp. monitoring system). 2.(A) HI temp. on points (AOPR) when data is called up on Gen. Temp. Monitor System Terminal. (B) Generator temp. recorder temperature inputs	1. None 2. Follow Main Generator Off-Normal Procedure Procedure 2Later.	(Later)	Rmp/Scanner (Later) - - - - - - - - - - - (Later)	GAI-892
STATOR WINDING TEMP HI D-59	1. High hydrogen temp. from stator. (From temp. rec.) 2.(A) Gen. Temp. recorder TR-22-30 points (AOPR) (B) HI Temp. on points (AOPR) when data is up on Gen. Temp. Monitor System Terminal.	1. None 2. Follow Main Generator Off-Normal Procedure Later.	(Later)	TR 22-2 (Later) - - - - - - - - - - - (Later)	GAI-890

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030174, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN 10

ALARM TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE TRIP D-10	1. Turb. has been tripped by manual turb. trip or ETSE or locally at turbine front standard. 2.(A) Turbine trip - valves closed, low EH fluid press (B) Rx trip of >15% power, CRTs in, power low.	1.(A) Turbine trip (20 AST and 20 ET) (B) Rx trip if >15% power. (C) Generator lockout actions if OCBs closed 2. Follow Rx trip O/N Proc. 2-0030130.	Pushbutton depressed or trip handle to "TRIP"	PB/710 Pushbutton (Later - handle) Pushbutton - RTGB-201 Handle - Turbine Front Standard	O40-711
BLANK D-20					
HYDROGEN SYS ALARM PANEL DC FAILURE D-30	1. Indicates DC PWR to hydrogen panel has been lost 2. Hydrogen/CO2 indication possibly erroneous.	1. None 2.(A) Investigate cause locally. (B) Notify Elect. Department if necessary	"0" DC Volts	82 (later) (later)	O40-867
SEAL OIL DC B/U PP RUNNING D-40	1. Indicates anytime seal oil backup pump is running 2. None in Control Room.	1. PP automatically starts when seal oil press. decays to (LATER) PSI < hydrogen pressure. 2.(A) Have Operator check seal oil sys. locally	(later)	MX (later) (LATER)	O40-870
SEAL OIL DC B/U PP OVERLOAD D-50	1. Indicates DC seal oil backup pump has tripped on overload. 2. None in Control Room.	1. None 2.(A) Reset breaker, try restart. (B) If no restart, and DC PP tagged for seals integrity; shut down unit & purge generator.	(later)	OL (later) (later)	O40-870
GEN H2 SEAL OIL VAPOR EXTR OFF D-60	1. GEN H2 seal oil defoaming tank vapor extractor has: (A) Tripped on overload. (B) Control Switch to Stop. (C) BKR racked out at MCC (LATER)	1. None 2.(A) Restart extractor if possible. (B) Get in air jet vapor ext. to ventilate tank. (C) Notify Electrical Dept.	(later trip) CS to "Stop"	42 (later) (later)	O40-873

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL E VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTINENT TO ISSUE	1. AND ACTION 2. CONTRARY ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP SEAL/ LUBE WATER PRESS FLOW E-1	1.(A) LUB LUBE WATER PRESS. GR's 2A1, 2A2, 2B1, 2B2 (B) Low seal water press. GR's 2A1, 2A2, 2B1, 2B2 (C) Low lube water flow GR's 2A1, 2A2, 2B1, 2B2 2. Lube water backup supply service (Ann. E-16).	1. Back up lube water supply will open up if pressure decays to (LATER) PSIG. 2.(A) Check condition of lube-water system. (B) Stop affected pump if necessary.	8 PSIG 6 GPM	RA-IS-1 Refl ash Panel Intake Structure	GAD-1217 P&ID 2998-G-082
BLANK E-9	BLANK				
HYPOCHLORITE TEST ALARM E-17	1. Indicates an alarm on Hypochlorinator Control Panel 2. None	1. None 2. Dispatch AEO to intake to determine cause of alarm and take corrective action.	See Hypochlorinator panel summary	K-1 ALARM RELAY Hypochlorinator Alarm Panels	GAD-693
HYPOCHLORITE 2nd ALARM E-25	1. Indicates that a second alarm has been registered on the local Hypochlorinator Control Panel. 2. None	1. None 2. Dispatch AEO to intake to determine cause of alarm and take corrective action.	See Hypochlorinator summary	K-2 2ND ALARM RELAY Hypochlorinator Alarm Panel	GAD-693
OILED GRAVITY TANK LEVEL LO E-33	1. Indicates a condensor tube sheet leak has developed, as detected by low level in tube sheet leak detect head tank. 2. None	1. None 2. (A) Notify Mechanical Maintenance. (B) Ensure tank is not filling with condensate or fresh water.	(later)	LS-12-26 Level Switch On gravity tank turbine deck	GAD-782
BLANK E-41	BLANK				

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL E VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2A1 OVRLD/TRIP E-2	1. (A) CWP 2A1 has tripped on overload. (B) Or, blown fuse or has racked out. 2. (A) Pump motor amperes. (B) Pump Brg Indicate Lights – out or green.	1. Closure of pump disch. valve MV-21-2A1 2. (A) Have operator check pump and fuses. (B) Reduce turbine load to match condenser efficiency losses.	Therm. Overload or Time Dependent O. C. Trip	74-1 74-2 Therm. Overload & Time Dependent O.C. Relay In BKR 2-20103/4160N-2A2	GAI-810 PID & MD Sheet 2
CIRC WTR PP 2A1 BRG TEMP HI E-10	1. High thrust bearing temperature. 2. May be accompanied with excessive amperage indication.	1. No Auto Action 2. (A) Have operator check local temp. & oil levels. (B) If pump must be shut down, reduce load to match condenser loss in efficiency	(Later)	TS-21-22-1A1-1, 2, 3 Thrust BRG Temp. Probes 2A1 Circ. Water Pump Intake 74	GAI-827
CIRC WTR PP 2A1 DISCH MV-21-2A1 OPEN/CLSD E-18	1. MV-21-2A1 has stopped travel in the open or closed direction due to exceeding torque. 2. Loss of breaker indicating lights.	1. No auto action 2. (A) Determine cause of overload and reset breaker if necessary. (B) May have to open or close manually	Thermal overload or 42 Aqs O.C. trip	74 - - - - - - - - - - - Thermal overloads and O.C. trip coil in BKR 2-4803/4160-2A1	GAI-811 PID & MD Sheet 47
CONDENSER VACUUM LO E-26	1. In condenser vacuum of less than 25" Hg exist in cond. In condenser. (From one or more of 4 hotts) 2. (A) SJAE Stm pressure. (B) Steam seal pressure. (C) Other vacuum/backpressure instruments.	1. Turbine will trip if vacuum decays to 18 – 22" vacuum. 2. Follow loss of condenser Vacuum Off-Normal Procedure #2-0030131.	<25" mercury vacuum (from 1 or more of 4)	RA-T-3/(Reflash) PS-12-36A & 36B PS-12-37A & 37B Pres. Switches	GAI-742
BAM PP 2A OVRLD/TRIP E-34	1. (A) 2A BAM pump has tripped on overload. (B) Or, blown fuse, or heat racked out. 2. (A) Check pump motor amperes. (B) Motor Brg Indicate Lights out or green.	1. None 2. (A) Follow BAM System OFF-Normal Procedure #2-0030130. (B) Check pump, motor and fuses.	BRKR. OVRLD OR TIME Dependent O. C. Trip	(LATER) 74-1 74-2 Thermal Overloads and Time Dependent O.C. Relays In Breaker 2-20106/4160N-2A2	GAI-825 PID & MD Sheet 2
BAM PP 2A BRG TEMP HI E-42	1. High temperature on 2A BAM pump in board or out-board bearings. 2. None	1. None 2.(A) Have operator check locally; oil temp. (B) Shut down pump if necessary (C) Follow BAM System OFF-Normal Procedure 2-0030130	BRKR	TIS-13-44-2A1 TIS-13-44-2A2 Inboard / Outboard Bearing Temps 2A BAM Pump	GAI-827

ANNUNCIATOR PANEL E VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CHG MTR PP 2B1 OVLD / TRIP E-3	1. (A) CHP 2B1 has tripped on overload, (B) Or, blown fuse or has racked out. 2. (A) Pump motor amber. (B) Pump Brk indicating lights – out or green.	1. Closure of pump disch. valve MV-21-2B1 2. (A) Have operator check pump and fuses. (B) Reduce turbine load to match condenser efficiency losses.	Thermal Overload or Time Dependent O. C. trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relay In BOK 2-2300A/4160V-2A2	GAI-812 PID & MD Sheet 2
CHG MTR PP 2B1 BRG TEMP HI E-11	1. High thrust bearing temperature. 2. May be accompanied with excessive amperage indication.	1. No auto action 2. (A) Have operator check local temp. and oil levels. (B) If pump must be shut down, reduce load to match condenser loss in efficiency.	(later)	TS-21-22-1B1-1, 2, 3 - - - - - - - - - - - -	GAI-827
CHG MTR PP 2B1 DESH MV-21-2B1 OVERLOAD E-19	1. MV-21-2B1 has stopped travel in the open or close direction due to excessive torque. 2. Loss of breaker indicating lights.	1. No auto action 2. (A) Determine cause of overload and reset breaker if necessary. (B) May have to open or close manually.	Thermal overload or 42 Amps O.C. Trip	74 - - - - - - - - - - - - Thermal overloads and O.C. trip coil in BOK 2-4100A/MCC-2A3	GAI-813 PID 7 MD Sheet 47
DRUM SCRN FAILURE E-21	1. High differential on one of four indications. 2. A green or no light indication on associated screen.	1. No Auto Action 2. Have operator check for overloaded screen, high temperature on drive motor, loss of lubricant.	"D" RPM	Speed SW 62/821-824 Speed detectors on 2A1, 2A2, 2B1, 2B2 screen shafts	GAI-813
TBM PP 2B OVRLD/TRIP E-31	1. (A) 2B TBM pump has tripped on overload (B) Or, blown a control circuit fuse (C) Or, has been racked out 2. (A) Check pump motor amber (B) Motor breaker indicating lights – out or green	1. No Auto Action 2. (A) Follow TBM OFF-Normal Procedure #2-0130130. (B) Check pump, motor, and fuses	Thermal Overload or Time Dependent O.C. trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relays In BOK 2-2300A/4160V-2B2	GAI-826 PID & MD Sheet 3
TBM PP 2B BRG TEMP HI E-41	1. High temperature on 2A TBM pump inboard or outboard bearings. 2. None	1. No Auto Action 2. (A) Have operator locally check oil and (B) Shut pump down if necessary (C) Follow TBM OFF-Normal Procedure #2-0130130.	160° F	TS-13-44-2B1 TS-13-44-1B2 Temp. switches 2B TBM Inboard/Outboard Bearings	GAI-827

ANNUNCIATOR PANEL C VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2A2 OVLD/TRIP E-4	1. (A) CWP 2A2 has tripped on overload, (B) Or, blown fuse, or Bkr racked out. 2. (A) Pump motor amps-0. (B) Pump Bkr Indicate Lights - out or green.	1. Closure of pump disch. valve MV-21-2A2. 2. (A) Have operator check pump and fuses. (B) Reduce turbine load to match condenser efficiency losses.	THERM OVLD OR Time Dependent O.C. Trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relay In MCC 2-2B3D3/5B3N-2B2	GAD-814 PD & MD Sheet 3
CIRC WTR PP 2A2 BRG THRT HI E-12	1. High thrust bearing temperature 2. May be accompanied with excessive upstream bolteation.	1. No Auto Action 2. (A) Have operator check local temp. and oil levels. (B) If pump must be shutdown, reduce load to match condenser loss in efficiency.	(later)	TIS-21-22-1A2-1, 2, 3	GAD-827
CIRC WTR PP 2A2 DISCH MV-21-2A2 OPEN/CLSD E-20	1. MV-21-2A2 has stopped travel in the open or closed direction due to excessive torque. 2. Loss of Breaker bolteation Lights	1. No Auto Action 2.(A) Determine cause of overload and reset breaker if necessary. (B) May have to open or close valve manually	THERM. OVLD OR 42 AUX O.C. Trip	74 Thermal Overloads and O.C.Trip Coil In MCC 2-41B3D/5B3-2B3	GAD-815 PD & MD Sheet 47
TRVLG SCRN LEVEL HI E-28	1. Clogged Screens 2. Differential press. indicating meters on control console high PDI-21-14A, 15A, 15A & 15B	1. Starts screen wash PMPS & screen rotation 2.(A) If SCREEN SYS has not started, actuate manually from CTRL BD. (B) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	(LATER)	PDS-21-14A2, -14B2 PDS-21-15A2, -15B2	GAD-819
RWM STORAGE TANK LEVEL HI/LO E-36	1. HI or LO level in RW Supply Tank possibly because: (A) Auto makeup has actuated and overflowed (B) OR leak has developed and low level has occurred 2. LATER	1. Makeup valve close before hi level and open before low level alarm 2. Have Operator verify level at local gauge glass. Check auto operation	(LATER)	LS-13-1 LS-13-2	GAD-733
TURBINE CLG WTR AIR SYS PRESS LO/BARRIER VLVS OPEN E-44	1.(A) LATER (B) LATER (C) LATER (D) LATER 2. LATER	(LATER)	(LATER)	(LATER)	GAD-818

ANNUNCIATOR PANEL E VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT DISABLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2B2 OVRLD/TRIP E-5	1. Clogged screen (B) Has a blown fuse or, (C) Breaker has been racked out. 2. (A) Pump motor amateur (B) Pump Brkr Indicating Lights - out or green	1. Starts screen wash pumps & screen rotation 2. (A) Have operator check pump and fusing (B) Reduce turbine load to match condenser efficiency losses	Overload OR Time Dependent O.C. Trip	P&S-21-14A2, -14B2 74-2 Thermal Overloads and Time Dependent O.C. Relay in 2-2--4/4160V-2B2	O&P-816 PD & MD Sheet 1
CIRC WTR PP 2B2 MOT THRP HI E-13	1. High thrust bearing temperature 2. May be accompanied by excessive vapor indication	1. No Auto Action 2.(A) Have Operator check local temp. & oil LVL (B) If PP must be shut down, reduce load to match condenser loss in efficiency.	(LATER)	TIS-21-22-1B2-1, -2, -3	O&P-827
CIRC WATER PP 2B2 DISCH MV-21-2B2 OPEN/CLD E-21	1. MV-21-2B2 has stopped travel in the open or closed direction due to excessive torque. 2. Loss of breaker indicating lights.	1. No Auto Action 2. (A) Determine cause of overload and reset breaker if necessary. (B) May have to open or close manually.	Thermal Overload or 42 Amps O. C. trip	74 Thermal overloads and O.C. Trip Coil in MCC 2-41B02/A03-2B3	O&P-817 PD & MD Sheet 47
SCRN WASH PP STRAINERS /P HI E-29	1. A plugged or dirty screen with pump stroker either 1A or 1B 2. In screen wash PP 1B1 pumps, as a result of plugged strainer may result in loss of auto start feature on travelling screens	1. No Auto Action 2. Backwash strainers	(LATER)	P&S-21-12A, -12B	O&P-1007
WTR BX OUTLET PRESS LOW TRIP HI E-37	1. Either a plugged HI ESW, Inoperative TCW Flow or loss of TCW pumps. 2.(A) Indicating lights on PCW and TCW pumps. (B) TCW discharge header pressure (C) PI-L 48 and PI-L 49 on PCW and SCW Temps. Indicator Initial ICRA 202 (TCW Temp)	1. No Auto Action 2. Have operator check TCW system locally. 3. If any system failure occurs, refer to TCW Off-Normal Procedure #2-0330130.	(LATER)	PS-13-4 TS-13-45A, -B	O&P-1007
BLANK E-45	BLANK				

ANNUNCIATOR PANEL E VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RCW PP 2A OVRLD/TRIP E-6	1. (A) RCW PP 2A has tripped on overload or, (B) has blown a fuse or, (C) Breaker has been racked out. 2. (A) Pump motor amber (B) Pump brkr Indicating Lights - (Later)	1. No Auto Action 2. (A) Check breaker 2-3020J locally. (B) Refer to RCW Off-Normal Procedure #2-0630130.	Thermal Overload or Time Dependent O. C. trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relay in BRK 2-3020J/4160V-2A3	GAI-832 PID & MD Sheet 4
BLANK E-14	BLANK			- - - - - - - - - - -	
RCW BRK A MV-21-3 OVRLD/SIAS FAIL TO CLOSE E-22	1. MV-21-3 has tripped 2.(A) VLV Indicating Lights out if tripped on overload (B) VLV does not indicate closed w/SIAS Sig. present	1. No Auto Action 2. (A) Check breaker (B) Refer to RCW Off-Normal Procedure #2-0630130.	THERM OVRLD OR 8 Amps O.C. Trip	74,33,3X Thermal Overloads and O.C. Trip Coil in BRK 2-4130L/MCC-2A6	GAI-835 PID 7 MD Sheet 15
RCW HEADERS PRESS LO R E-30	1. RCW header A or B low pressure 2.(A) RCW BRK power as indicated on PIS-21-9A or 8B (B) RefLeb Panel Indication	1. No Auto Action 2.(A) Check related RCW parameters (B) Refer to RCW OFF-Normal Proc. 2-0630130	(LATER)	RA-RAB-17/RefLeb - - - - - - - - - - - PT-21-8A PT-21-8B	GAI-1556 GAI-831
RCW PP 2A DISC VALVE OPEN E-31	(LATER)	(LATER)	(LATER)	PIS-21-3A-1 & 2 - - - - - - - - - - -	GAI-1217
RCW PP 2A BRK FAIL / SS TRIP. E-36	1.(A) RCW PP 2A BRK has been given a start signal, (CS or ESFAS) and has failed to close. (B) Or, has tripped from the control room at HC's 2. Breaker Indicate Lights - green or out.	1. None 2.(A) Start Failure; check BRK locally, contact Electrical Dept. for assistance. (B) ESFAS'D; return NOR/ISOL switch to "NORMAL" if applicable.	Start Signal >5 sec. w/ BRK open NORM/ISOL Switch in	74-3 SS/TRIP. T.D. Relay/ISOL SW BRK 2-3020J 4160V Bus 2A3	GAI-832

ANNUNCIATOR PANEL E VERTICAL COLUMN 7

ANNUN TITLE	1. INDICATED CONDITION 2. ORIGIN, HOW INDICATED WHICH VERIFY OR PINPOINT PROBLEM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BOP PP 2B OVLD/TRIP E-7	1. (A) BOP PP 2B has tripped on overload or, (B) Has blown a fuse or, (C) Breaker has been racked out 2. (A) Pump motor amperes (B) Pump Info Indicating Lights - (Later)	1. No Auto Action 2. (A) Check breaker (B) Refer to BOP Off-Normal Procedure #2-0630131.	Thermal OVLD OR Time Dependent O.C. Breaker	74-1 74-2 Thermal Overloads and Time Dependent O.C. 2-3410/4160V-2B3	OAD-833 PID & MD Sheet 5
BOP FWS LINE WATER PRESS/FLOW LO R E-15	(LATER)	(LATER)	(LATER)	RA-IS-1 - - - - - - - - - - - -	OAD-1556
BOP BUS B SW-21-2 OVLD/TRIP/BIAS FAIL TO CLOSE E-21	1. SW-21-2 has tripped 2.(A) VLV Indicating Lights out if tripped on overload (B) VLV does not indicate closed w/SIAS signal present.	1. No Auto Action 2. (A) Check breaker 2-4210A locally. (B) Refer to BOP Off-Normal Procedure #2-0630131.	Thermal Overload or B Aps O. C. trip	74,33,3X - - - - - - - - - - - - Thermal overloads and O. C. trip coil in BUS 2-4210A/480-2B6	OAD-836 PID & MD Sheet 41
CCW HX SUCT /P HI R E-11	(LATER)	(LATER)	(LATER)	RA-C3-1 - - - - - - - - - - - -	OAD-1007
BOP PP 2B LINE WATER FLOW LO E-19	(Later)	(Later)	(LATER)	FIS-21-3B-1 & 2 	OAD-1217
BOP PP 2B BUS FAIL / SS TRIP. E-47	1. (A) BOP pump 2B breaker has been given a start signal, (SI or ESFAS) and has failed to close, (B) Or, has tripped from the Control Room at it's normal SS. SW. 2. Breaker indicate lights - green or out.	1. None 2. (A) Start Failure; check bkr locally, contact Electrical Department for assistance. (B) If LOCAL; return BUS/TRIP switch to "NORMAL", if applicable.	Start Sig. 55 sec w/ BUS open BUS/TRIP Sw. in "TRIP."	74-3 SS/TRIP. Bkr 2-3410 4160V Buss 2B 3	OAD-833

ANNUNCIATOR PANEL E VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORDER, BOTH INDICATION WHICH VERIFY OR PROVIDE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FCW PP 2C OVRLD/TRIP E-8	1. (A) FCW PP 2B has tripped on overload or, (B) Has a blown fuse or, (C) Breaker has been racked out. 2. (A) Pump motor amster (B) Pump brkr indicating lights – (Later)	1. (Later) 2. (Later)	THERM OVRLD OR TIME Dependent O.C.Trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relay in BRK 2-3503/4160N-2AB	GAI-834 PID & MD Sheet 6
CIRC WTR PP LUBE WTR SPLY WATER IN SERVICE E-16	1. Lube water from FCW HDR to CWS has been lost, from lube wtr strainers plugged, or isolation & domestic wtr supply valve has opened to supply Circ. Pumps. 2.(A) Lube WTR Strainer HI D.P. Alarm (1A-4,1B-4) on HVAC Panel. (B) SIAS: HV-2144, & 48 Closed – Open.	1. Domestic lube water supply valve opens at (Later) PSIG to supply circ. wtr pumps. 2.(A) Have operator backwash lube wtr strainers & check lube wtr hdr. (B) SIAS: reopen ESW VLVS if SIAS NOT Valid	(later) PSIG	FCW-21-26 LUB SW Domestic Water Supply Valve Intake structure bldg.	GAI-810 P & ID
BLANK E-24	BLANK				
FCW PTS HX STRAINER /P HI E-32	(LATER)	(LATER)	(LATER)	TA-T-9	GAI-807
FCW PP 2C LUBE WATER FLOW LO E-40	(LATER)	(LATER)	(LATER)	FTS-21-3C-1 & 2	GAI-1217
FCW PP 2C BRK FAIL/ SIS ESW. E-48	1. (A) FCW pump 2C breaker has been given a start signal, (CI or ESFAS) and has failed to close, (B) Or, has isolated from the control room at it's BRKR/ESW. switch. 2. Breaker indicate lights – green on out.	1. None 2. (A) Start Failure; check bkr locally, contact Electrical Dept. for assistance. (B) For SIAS; return BRKR/ESW. switch to "NORMAL", if applicable.	Start sig. >5 sec w/ Bkr open BRKR/ESW. SW in "ESW."	74-3, SS-1/ESW. Bkr 2-3503 4160N Bus 2AB	GAI-834

ANNUNCIATOR PANEL F VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR ASSIGNMENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
LP HTR 2-1A LEVEL HI F-1	1. Greater than normal level in L.P. HTR 2-1A due to malfunction of LCV-11-1A1, LCV-11-7A-1 & LCV-11-1A2 2. NONE	1.(A) Open drain to condenser LCV-11-1A1, close to 1 from 2A htr LCV-11-7A1, open 7A2. (B) HI HI will open LCV-11-1A2 & LCV-11-7A2 (Alt-Normal.) 2.(A) Check local gage glass & OPS of LCV's (B) Man. OPS of LCV's may be required.	2' 1 1/4" ABOVE ℄	LS-11-3A Level SW L.P. Heater 2-1A	OAD-665 P&ID 2998-G-081 Sheet 1 of 2
LP HTR 2-2A LEVEL HI F-9	1. Greater than normal level in L.P. heater 2-2A due to malfunction of LCV-11-1A1 or LCV-11-7A2. 2. NONE	1. Close drain from 2-1A L.P. HTR LCV-11-1A1, HI HI will open LCV-11-7A2. 2.(A) Check local Gage Glass & OPS of LCV's. (B) Manual OPS of LCV's may be required.	2'0" below ℄	LS-11-9A Level SW L.P. Heater 2-2A	OAD-666 P&ID 2998-G-081 Sheet 1 of 2
LP HTR 2-3A LEVEL HI F-17	1. Greater than Normal in L.P. HTR 2-3A due to malfunction of LCV-11-1A2 or LCV-11-1A1. 2. HI-level alarm on heater 2-2A if LCV-11-1A1 is stuck in the open position.	1. HI or HI HI SIgnal open LCV-11-1A2 (Alt. drain to the condenser) 2.(A) Check local gage glass & OPS of LCV's (B) Manual OPS of LCV's may be required.	1' 2 3/4" Below ℄	LS-11-15A Level SW L.P. Heater 2-3A	OAD-667 P&ID 2998-G-081 Sheet 1 of 2
LP HTR 2-4A LEVEL HI/LO F-25	1. L.P. HTR 2-4A may be HIgher or lower than HIGH LVL (LCV-18A may be stuck open) LCV-11-24A2 malfunction 2.(A) 2A HTR Drain PP trip and alarm. (B) HI level alarm ZC and/or ZO H.S.8. (C) HI level alarm H.P. heater 2-5A	1.(A) Modulate open LCV-11-1B, open LCV-11-25A2, close LCV-11-24A1. (B) Open LCV-11-18A, drop to condenser (C) LO-LO level will trip associated HTR drain PP 2A. 2.(A) Verify Cont. VLV OPS & level locally (B) Take manual control	LS-11-20A HI level 9 1/8" below ℄ LS-11-22A LO level 2'2" below ℄	LS-11-20A LS-11-22A Level Switches L.P. Heater 2-4A	OAD-667 P&ID 2998-G-081 (Sh 1 of 2)
HP HTR 2-5A LEVEL HI F-33	1. Higher than Normal level may be due to malfunction of LCV-11-24A1, LCV-11-30C1 or LCV-11-30D. 2.(A) Low level alarm on L.P. heater 2-4A (B) HI-level alarm ZC & ZO drain collection tank	1.(A) Open LCV-11-24A1 (B) HI & HI-HI will close LCV-11-30C1 & LCV-11-30D1, open LCV-11-30C2 & LCV-30D2 (C) Close recirculation VLV SC-10-5A on HI-HI 2.(A) Verify levels locally (B) Take man. control & throttle as necessary	1 ft. 8 7/8" Below ℄	LS-11-26A Level SW H.P. Heater 2-5A	OAD-667 P&ID 2998-G-081 Sheet 1 of 2 and Sheet 2 of 2
F-41	(BLANK)	(BLANK)	(BLANK)		

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CORRECT ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LP HDR 2-1B LEVEL HI F-2	1. Greater than normal level in L.P. HDR 2-1B due to malfunction of LCV-11-1B1, LCV-11-1B2 or 2. NOTE	1.(A) Open drain to condenser LCV-11-1B1, close feed from LP htr 2-2B LCV-11-7B1, open 7B2 (B) HI-HI will open LCV-11-1B2 alt. drain. 2.(A) Check local gage glass (B) Manually Operate LCV's as required.	2' 1 1/4" BELOW E	LS-11-3B level SW L.P. Heater 2-1B	GAI-665 FSID 2998-G-081 Sheet 1 of 2
LP HDR 2-2B LEVEL HI F-10	1. Greater than normal level in L.P. heater 2-2B due to malfunction of LCV-11-1B1 or LCV-11-7B1. 2. NOTE	1. Closes drain from 2-2B L.P. HDR LCV-11-1B1, HI HI will open LCV-11-7B2., alt. drain to cond. from L.P. heater 2-2B 2.(A) Check local Gage Glass & OPS of LCV's. (B) Manual Operate LCV's as required.	2'0" below E	LS-11-9B Level SW L.P. Heater 2-2B	GAI-666 FSID 2998-G-081 Sheet 1 of 2
LP HDR 2-3B LEVEL HI F-18	1. Greater than Normal in L.P. HDR 2-3B due to malfunction of LCV-11-1B2 or LCV-11-1B1. 2. HI-level alarm on heater 2-2B if LCV-11-1B1 is stuck in the open position.	1.(A) HI or HI HI Signal opens LCV-11-1B2 (Alt drain to the condenser) (B) HI-HI Sig. closes reactor. VLV SO-10-3B 2.(A) Check local gage glass & OPS of LCV's (B) Manual OPS of LCV's may be required.	1' 2 3/4" Below E	LS-11-20B Level SW L.P. Heater 2-3B	GAI-667 FSID 2998-G-081 Sheet 1 of 2
LP HDR 2-4B LEVEL HI/LO F-26	1. L.P. Heater 2-4B may be higher or lower than normal level (LCV-1B8 may be stuck open) LCV-11-2481 or LCV-11-2482 malfunction 2.(A) 2B heater drain pump trip and alarm. (B) HI level alarm 2A & 2B H.P.H. (C) HI level alarm H.P. heater 2-5B	1.(A) Modulate open LCV-11-1B8, open LCV-11-2482 close LCV-2481 alt. drain to the cond. (B) Open LCV-11-1B8, alt. drain to cond. (C) Lo-Lo level will trip assoc. htr. FP 2B 2.(A) Verify control VLV OPS & level locally (B) Man. operate LCV's as required	LS-11-20B HI 9 1/8" below E LS-11-22B LO 2' 2" below E	LS-11-20B LS-11-22B level Switch L.P. Heater 2-4B	GAI-667 FSID 2998-G-081 Sheet 1 of 2
HP HDR 2-5B LEVEL HI F-34	1. Higher than HI-HI level may be due to malfunction of LCV-11-2481, LCV-11-3001 or LCV-11-3081 2.(A) Low level alarm on L.P. Htr 2-5B (B) HI level alarm 2A and/or 2B drain collection tank	1.(A) Open LCV-11-2481 (B) HI & HI-HI will close LCV-11-3001 & LCV-11-3081, open LCV-11-3002 & B2 (C) Close reactor return VLV SO-10-5B on HI-HI 2.(A) Verify VLV OPS & level locally. (B) Man. Operate LCV's as required.	1' 8 7/8" Below E	LS-11-26B Level SW H.P. Heater 2-5B	GAI-667 FSID 2998-G-081 Sheet 1 of 2 and Sheet 2 of 2
HDR HTR. FP 2A/2B STEAM JET F-42	1. Indicates strainer blocked on htr. Drain FP 2A or 2B or high heater drain pump flow. 2.(A) Check heater drain pump opns. (B) Check for tripped heater drain pump (C) Check DP FP Htr Strainer blocked	1. No Auto Action 2.(A) If due to HI flow start second htr. drain pump if not already running. (B) Check strainer Delta P locally	(LATER)	RA-T-4 Refuh Panel Turbine Building El 5'5" El. (LATER)	GAI-660

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

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ANNUNCIATOR PANEL F VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
HTR COLL. 2A LEVEL HI F-3	1.(A) 2A collector drain LCV-11-30A1 to 2-5A H.P. Htr. malfunctioning (B) HI-level alarm H.P. Htr. 2-5A. 2. HI level alarm H.P. htr. 2-5A	1. HI level dump to cond. LCV-11-30A2 will open (LC-11-30A or LS-11-37A) 2.(A) Check VLV OPS and level locally (B) Operate LCV-11-30A1 & LCV-11-30A2 man. as necessary to control level.	1/2" below ℄	LS-11-31A Level Switch 2A drain collector tank	CWD-670 P&ID 2998-G-081 Sheet 2 of 2
HTR COLL. 2B LEVEL HI F-11	1.(A) 2B collector drain LCV-11-30B1 to 2-5B H.P. htr. malfunction (B) HI-level alarm H.P. heater 2-5B 2. HI level alarm H.P. heater 2-5B	1. HI level drop to cond. LCV-11-30B2 will open (LC-11-30B or LS-11-37B) 2.(A) Check VLV OPS and level locally. (B) Operate LCV-11-30B1 & LCV-30B2 man. as necessary to control level.	1/2" Below ℄	LS-11-31B Level Switch 2B drain collector tank	CWD-670 P&ID 2998-G-081 Sheet 2 of 2
HTR COLL. 2C LEVEL HI F-19	1.(A) 2C collector drain LCV-11-30C1 to 2-5B H.P. htr. malfunction (B) HI-level alarm H.P. heater 2-5B 2. HI level alarm H.P. heater 2-5B	1. HI level drop to cond. LCV-11-30C2 will open (LC-11-30C or LS-11-37C) 2.(A) Check VLV OPS and level locally. (B) Operate LCV-11-30C1 & LCV-30C2 man. as necessary to control level.	1/2" Below ℄	LS-11-31C Level Switch 2C drain collector tank	CWD-670 P&ID 2998-G-081 Sheet 2 of 2
HTR COLL. 2D LEVEL HI F-27	1.(A) 2D collector drain LCV-11-30D1 to 2-5B H.P. htr. malfunction (B) HI-level alarm H.P. heater 2-5B 2. HI level alarm H.P. heater 2-5B	1. HI level drop to cond. LCV-11-30D2 will open (LC-11-30D or LS-11-37D) 2.(A) Check VLV OPS and level locally. (B) Operate LCV-11-30D1 & LCV-30D2 man. as necessary to control level.	1/2" Below ℄	LS-11-31D Level Switch 2D drain collector tank	CWD-670 P&ID 2998-G-081 Sheet 2 of 2
HTR DRN PP 2A OVRLD/TRIP F-35	1. 2A Htr. drn. PP OVRLD and/or tripped from excessive flow or pump/motor BRG failure. 2.(A) Motor Amps (B) Motor BRK indicator lights	1. Heater drain pump trips 2.(A) If PP tripped, verify BRK if applicable (B) Determine cause of overload (C) Start 2B Htr. drain PP if not already runnin.	(LATER)	74-1, 74-2 (LATER) 2A2 4160V SWGR BRK 2-20106	CWD-625
HTR DRN PP 2A TRIP LO D/HDR LEVEL LO LO F-43	1.(A) Htr. Drain PP disch. VLV malfunction (B) Lo level in 2-4A L.P. Htr. (C) Suction strainer clogged 2.(A) 2-4A L.P. heater low level alarm (B) Pump BRK indicator lights (C) Strainer delta P alarm	1. Htr. drain pump trips 2.(A) Check L.P. htr. 2-4A for lo level and correct valve operation. (B) If strainer blockage is indicated, isolate and clean strainer (C) If Disch. VLV failed, manually operate VLV and restart PP if needed.	(LATER)	80 X KTC3-202	CWD-625

ANNUNCIATOR PANEL F VERTICAL COLUMN 4

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ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. ADDITIONAL ROOM INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AND ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
HDR 2A LEVEL HI F-4	1. Increased level may be due to malfunction of HCV-11-12A 2. HI level alarm from 2-4B L.P. Heater	1. HCV-11-12A opens dtn to Cond. for level Ctrl on HI-HI Signal only. (VLV fails open) 2.(A) Check local gauge glass & VLV position (B) Take manual control of HCV's as necessary	3" above Base	LS-11-13A Level Switch 2A HDR	GAI-670 PSID 2998-G-081 Sheet 2 of 2
HDR 2B LEVEL HI F-12	1. Increased level may be due to malfunction of HCV-11-12B 2. HI level alarm from 2-4B L.P. Heater	1. HCV-11-13B opens dtn to Cond. for level Ctrl on HI-HI Signal only. (VLV fails open) 2.(A) Check local gauge glass & VLV position (B) Take manual control of HCV's as necessary	3" above Base	LS-11-13B Level Switch 2B HDR	GAI-670 PSID 2998-G-081 Sheet 2 of 2
HDR 2C LEVEL HI F-20	1. Increased level may be due to malfunction of HCV-11-12C 2. HI level alarm from 2-4B L.P. Heater	1. HCV-11-13C opens dtn to Cond. for level Ctrl on HI-HI Signal only. (VLV fails open) 2.(A) Check local gauge glass & VLV position (B) Take manual control of HCV's as necessary	3" above Base	LS-11-13C Level Switch 2C HDR	GAI-670 PSID 2998-G-081 Sheet 2 of 2
HDR 2D LEVEL HI F-28	1. Increased level may be due to malfunction of HCV-11-12D 2. HI level alarm from 2-4B L.P. Heater	1. HCV-11-13D opens dtn to Cond. for level Ctrl on HI-HI Signal only. (VLV fails open) 2.(A) Check local gauge glass & VLV position (B) Take manual control of HCV's as necessary	3" above Base	LS-11-13D Level Switch 2D HDR	GAI-670 PSID 2998-G-081 Sheet of 2
HDR HTR PP 2B OVLD/TRIP F-36	1.(A) 2B htr. drn. PP motor has become overloaded. (B) Stopped by Control switch (C) Blown fuses 2.(A) Loss of Indicating lights and caps (B) HI amp condition	1. Htr. drain PP trip 2.(A) Verify RMS if applicable alarm PP tripped (B) Start 2A htr. drn. PP if not running (C) Determine cause of overload	(LATER)	74-1, 74-2 2B2 4160V SWR BUS 2-2001	GAI-626
HDR HTR PP 2B TRIP FLOW/HDR LEVEL LO-LO F-44	1.(A) 2B htr. drain PP low flow, flow (B) to level in 2-4B L.P. heater 2. Loss of Indicator lights and caps	1. Htr drain pump trip 2.(A) Check L.P. htr. 2-4B for hi level & correct valve. (B) If strainer blockage is indicated, isolate & clean strainer (C) If drain vlv failed manually operate valve and restart pump if needed	(LATER)	80 X HTR-312	GAI-626

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 5

ALARM TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
INSTR AIR PRESS HI/LO F-5	1.(A) Inst. Air receiver press. HI or LO (B) Inst. Air HDR PRESS LO from compressor (C) Dryer/Filter malfunction 2.(A) Inst. Air Press. Indicator on IRB-302 (B) Inst. Air Comp. auto start alarm (C) Inst. Air Comp. Temp./OWSD trip alarm	1. Standby Inst. Air Comp. auto starts 2.(A) Check Comp. locally & start standby Comp. if necessary (B) If Press. continues to drop cross-connect stat. & Inst. air (C) Refer to "Loss of Inst. Air" O/N Proc. No. 2-0030130	HI-110 PSIG Lo- 80 PSIG Lo- 75 PSIG	PS-18-4 Inst. Air Comp. Cont. Cab Inst. Air Header	GAD-592 P&ID 2998-G-085 Sheet 1 of 2
INSTR AIR OTHER 2A TEMP HI/ OWSD/DISP F-13	1.(A) HI Temp. T.C.V. outlet from 2A Inst. Air Comp. (B) 2A Inst. Air Comp. HI Temp/OWSD Trip. (C) Control power fuse blown. 2.(A) Inst. Air Comp. auto start alarm (B) Inst. Air low Press. alarm	1. 2A Inst. Air Comp. tripped on HI Disch. air temp. or overload. 2.(A) Verify auto start 2B Comp. if 2A tripped (B) Inspect Comp. locally to determine cause of trip/alarm	160° 195°	(TS-13-40A,TS-13-41A)/ 592 Inst Air Comp. Jacket Coolers (TS-18-2A,74)/593 Inst. Air Comp. Discharge Piping	GAD-592 GAD-593 P&ID 2998-G-089
INSTR AIR OTHER/OTHER AUTO START F-21	1. Standby Inst. Air Comp. Auto Start on Lo Inst. Air Pressure 2.(A) Inst. Air Press. Indicator (B) Inst. Air HI/LO Press. alarm	1. Auto start standby compressor 2. Have T.O. Check operation of air Comp. to determine cause of low press.	(LATER)	CS/593-1, 63X-A/593, 63X-B/594, CS/594-1 Inst. Air Comp. Control Cabinet	GAD-593 GAD-594
INSTR AIR OTHER 2B TEMP/HI OWSD TRIP F-29	1.(A) HI Temp. T.C.V. outlet from 2B Inst. Air Comp. (B) 2B Inst. Air Comp. HI Temp/OWSD Trip. (C) Control power fuse blown. 2.(A) Inst. Air Comp. auto start alarm (B) Inst. Air low Press. alarm	1. 2B Inst. Air Comp. tripped on HI Disch. air temp. or overload. 2.(A) Verify auto start 2B Comp. if 2B tripped (B) Inspect Comp. locally to determine cause of trip/alarm	160° 195°	(TS-13-40B,TS-13-41B)/ 592 Inst Air Comp. Jacket Coolers (TS-18-2B,74)/594 Inst. Air Comp. Discharge Piping	GAD-529 GAD-594
SPR TROUBLE/FAIL F-37	1.(A) Loss of power to printer (B) Loss of power to Logging processor unit (C) Loss of power to output power unit 2. Sequence of events recorder inoperable	1. NONE 2.(A) Energize printer if deenergized (B) Notify I & C that S.E.R. has failed	(LATER)	RA-13A6-17 Refresh Panel RAB 43' El. (LATER)	GAD-4213
TRT MDR TK/ CST DR HEAT DEVICE HI/ VACUUM LO F-45	1. High level or not enough vacuum in Cond. Storage Tank degasifier 2. Leak	1. High Level: Stop all running vacuum PPs for outer shell. 2. Have Operator check locally: (A) HI Level: check level controls & transfer pumps, restart vacuum pump (B) Low Vacuum: secure vacuum PP running manually, restart another	HI Level 8' 6" Lo Vacuum 22" Reserve G	DGH, LVA Level/Vacuum, Switches CST Degasifier Package	GAD-1591 GAD-1595

ANNUNCIATOR PANEL F VERTICAL COLUMN 6

ANNUNCIATOR TITLE	1. ANNUNCIATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR 3. COMPONENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STATION AIR PRESS HI/LO F-6	1.(A) Air Pressr.comp. not unloading (B) Air pressr.comp. has not loaded or line ruptured 2.(A) Station Air Press. Instr. (OR48-336)	1. NONE 2.(A) Rotate T.O. Stop Comp. If HI Press. (B) Check for proper loading or check for air leak and isolate leak (C) Notify H.P. to remove air supplied saf. workers from hazards & remove air supplied equipment	HI: 120 PSIG LO: 80 PSIG LO: 75 PSIG	PS-18-14 Station Air Rec. Pressure Switch PS-18-15	GAD-592 P&ID 2998-G-085
SECTION AIR COMPRESSOR TEMP HI/ OVRLD/TRIP F-14	1.(A) HI temp. of air after entering cooler (B) HI temp. of TCW from comp. jacket or cooler (C) Overload condition or trip 2. LO press. In header	1. NONE 2.(A) Check temp. locally and adjust TCW as necessary (B) If tripped investigate cause (C) Attempt to reset MCC and restart	460°F TS-13-42 140°F TS-13-43 160°F	(TS-18-5(592)(r,c)/591 (LAMP) (TS-13-42,TS-13-43/592 (LAMP)	GAD-591 GAD-592 P&ID 2998-G-089
INSTR AIR COMPR HEAT EXCHG COOLING SYS OVRLD TRIP F-22	1. Cooling Sys. Water PP or Cooling Fan O/LOD 2. NONE	1. NONE 2.(A) Restore EWSG. Cooling (B) Restore TCW Cooling if possible (C) Stop Air Comp. If unable to restore cooling (refer to "Loss of Inst. Air" O/H Proc.(no No., 2-0030131)	(LAMP)	74-1, 74-2 (LAMP) 2AB MCC, 480VAC	GAD-1250
UNIT 1 & 2 INSTR AIR TIE OPEN F-30	1. Unit 1's INST Air supply pressure has fallen to lo enough press. to open the Unit 2 to Unit 2. Inst. Air Press. Comp: PI-13-2.	1. At 70 psig the tie VLV will shut to prevent isolating Unit 2 of Inst. Air. 2. Follow Loss of Inst. Air O/H Proc. No. 2-0030131	75 PSIG LAM	33/AC Limit Switch Unit 2 Tie Valve FCV-18-6	GAD-1249
MAINT HATCH SEAL INFLATED F-38	1. Low N_2 press. between "O" ring seals 2. NONE	1. NONE 2.(A) Check for proper gas press. setting and adjust as necessary (B) Comply with Tech. Specs. on Containment Integrity	HI: 35 PSIG LO: 25 PSIG	PS-18-42A PS-18-42B Pressure Switches Maintenance Hatch	GAD-1230
WIP INSTR AIR PRESS LO F-46	1. Lo Inst. Air Press. due to loss of Inst. Air Comp. or line rupture. 2. Inst. Air Hdr Press. Indication	1. Backup Inst. Air Comp. starts 2.(A) Check Inst. Air Comp. for Norm. OPS (B) Bypass dryers and filters if clogged (C) Investigate possible leak and isolate	75 PSIG	PS-18-18 Pressure Switch Inst Air to Cont. Equip/ Misc. Service (Local)	GAD-1007

ST. LUCIE UNIT 2
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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F WINDOW COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AUTO ACTION 2. OBSERVER ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FIRE ALARM (TURB) F-7	(LATER)	(LATER)	(LATER)		(LATER)
PRIMARY WTR DISCH AIR PRESS LO/LO F-15	1.(A) Primary water PP Trip OR (B) Break in line 2.(A) Pp Indicating lights (B) Primary water tank level	1. Standby Primary Water PP starts on low 2. Follow Primary Water Sys. O/N Procedure No. 2-1500 3	85 PSIG	PS-15-7 Pressure Switch Primary Water Rm	GAD-8007 P&ID 2998-G-084
PWT LEVEL HI/LO F-23	1.(A) HI level in PWT (B) LO level in PWT 2. Primary water tank level indication on RRGB-302	1. NONE 2.(A) FILL PWT if necessary (B) If BA Gass. are running and level is low, check for proper QDS, If level high, stop water to PWT	HI: 21 ft. Above Base LO: 18 ft. Above Base	LIS-15-9 level indicating RRGB-302	GAD-851 P&ID 2998-G-084
H_2 SEAL OIL FIRE SYSTEM TROUBLE/ LO LEVEL ALARM OFF F-31	(LATER)	(LATER)	(LATER)	2TSR, 2BSR, CS/855-2 Turb. Lube oil/Reserv. & Gouttlower/H_2 Seal Oil/Fire Protection Local Control Panel	GAD-855
LUBE OIL RSVR/ PIPING FIRE SYS TROUBLE/ LO LEVEL ALARM OFF F-39	(LATER)	(LATER)	(LATER)	1-TSR,1-BSR,CS/855-1-3 Turb. Lube oil/Reserv. & Gouttlower/H_2 Seal Oil/Fire Protection Local Control Panel	GAD-855
FW/CNDRY HTR HOT PTS FIRE SYS TROUBL F-47	(LATER)	(LATER)	(LATER)	(LATER)	GAD-856

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ANNUNCIATOR PANEL F VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGIN, ROOM INDICATION AND/OR VERIFY OR PERMISSIVE NUMBER	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FIRE PUMP RUNNING F-3	(LATER)	(LATER)	(LATER)	52 R Unit 1, 480VAC, MCC 1A2 & 2B2	O&D-852 Unit 1 Sh 852 8770-B-327
TRANSFORMER DELUGE OPERATING F-16	(LATER)	(LATER)	(LATER)	DPS/1 Main XFMR 2A & 2B DPS/2 Aux. XFMR 2A & 2B DPS/2 S/U XFMR 1A & 1B	
HTGR AIR ISOL HCV-18-1 CIAS CLOSE OVERRIDE F-24	1. CIAS signal has been overridden to open Inst. Air Isol HCV-18-1 2. HCV-18-1 open with a CIAS signal present as indicated on RRB-206	1. NONE 2. Acknowledge alarm and presence of open flow path through the containment and shield bldgs. while a CIAS is present	CIAS Signal present with RRB Cont. Sel take to close override & then to open	3A/96 RRB-306 (LATER)	O&D-317
H_2 SEAL OIL FIRE/ DELUGE OVER/ HI. ALARM OFF F-32	(LATER)	(LATER)	(LATER)	20R, CS/855-5 Turb Tube oil/reservoir & Gasketheuer/H_2 seal oil/fire prot. local cont. panel	O&D-855
LUBE OIL RSVR/ PUMPS FIRE/ DELUGE OVER/ HI. ALARM OFF F-40	(LATER)	(LATER)	(LATER)	1-20R, CS/855-4-6 Turb Tube oil/reservoir & Gasketheuer/H_2 seal oil/fire prot. local cont. panel	O&D-855
FAILURE/ AIR HDR PRS FIRE SYS OVER F-48	(LATER)	(LATER)	(LATER)	(LATER)	O&D-856

ANNUNCIATOR PANEL C VERTICAL COLUMN 1

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WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SG 2A LEVEL HI/LO G-1	1. 2A steam generator level high or low (alarm only) 2.(A) Compare indications on all channels of indicators & recorders. (B) Check condensate pumps, MFW pumps, etc. (C) Check feed reg flow rates & controls.	1. None, unless LVL continues to increase or decrease. 2.(A) Take manual control of affected part of FW system, to control level. (B) If loading level; follow loss of S/G level Emergency Procedure 2-0700160.	HI - 85% (increasing) LO - 56% (decreasing)	LIA - 9005 S/G Level SIGNA Indicators A, B, C, & D Channels (Safety) - - - - - - - - - - - RRUR - 202	GAD-619 P&ID (Later)
SG 2B LEVEL HI/LO G-9	1. 2B S/G level high or low (alarm only) 2.(A) Compare indications on all channels of indicators & recorders. (B) Check condensate pumps, MFW pumps etc. (C) Check feed reg flow rates & controls.	1. None, unless level continues to increase or decrease. 2.(A) Take manual control of affected part of FW system, to control level. (B) If loading level; follow loss of S/G level Emergency Procedure 2-0700160.	HI - 85% (increasing) LO - 56% (decreasing)	LIA - 9006 S/G Level SIGNA Indicators A, B, C, & D Channels (Safety) - - - - - - - - - - - RRUR-202	GAD-624 P&ID (Later)
FW PP DISCH HDR PRESS LO G-17	1. Low feedwater pump pressure to HP #5 FW Heaters. 2. (A) Feedwater Header Discharge Pressure 350 PSIG (B) MFW pump recirc valve position.	1. None 2. Check FW PPs OPS parameters, noise, amps, temp., vibs., have operator check for excessive recirc. to condenser. Leak or break in Discharge Hdr.	350 PSIG decreasing	PSI-09-5 - - - - - - - - - - -	GAD-603 P&ID (Later)
AFAS CABINET TROUBLE G-25	1. Loss of one or more power supplies, ground fault, or loss of cooling fan to one or more channels. 2. Extinguished indicating lights on cabinet, clogged filter, or fan switch to off.	1. None 2. Notify I&C Department	NONE	AFAS CAB-A, B, C, D - - - - - - - - - - - AFAS Cabinet - Behind RRUR-204	GAD-1638
AFAS-1/AFAS-2 BYPASS G-33	1. One AFAS channel in bypass 2. Auto bypass Logic Illuminated on cabinet	1. AFAS logic shifts to 2 out of 3 logic 2. Notify I&C Department	NONE	AFAS CAB - A, B, C, D - - - - - - - - - - - AFAS Cabinet - Behind RRUR-204	GAD-1638
SG 2A/2B AFW STEAM VLVS SS ESOL. G-41	1. Control of HV-5B-19B, and/or 19A inoperable (bop valves has been isolated from the Control Room by DHSI/ESOL switch. 2. Loss of control switch lights.	1. Loss of control from Control Room. 2. Return DHSI/ESOL switch to "NORMAL". If applicable, to cable spreading room.	NHI/ESOL switch to "ISOLATE" (one or both)	SS-1/603/654 SS-2/603/654 (NHI/ESOL Switches) - - - - - - - - - - - Cable Spreading Room - Isolate Panel.	GAD-603

/R2

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL G VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FW PP 2A SUCTION PRESS LO TRIP G-2	1. 2A Main feedwater pump has tripped on low suction pressure from: (A) Loss of condensate pump, or the drain pump. (B) Suction strainer plugged. 2. (A) MFW pump breaker indication - green. (B) Read pump suction pressure gauge.	1.(A) MFW pump trip (B) Turbine runback if >60% power 2.(A) If MFW has not tripped, start standby condensate or MFP. (B) Verify RRK to <60% power, if applicable (C) Follow loss of S/G FW Emergency Procedure 2-0030132.	350 PSIG decreasing (Later - time delay)	(74-3, 62X/MC) / 615 (42/MCC,PS-12-15A) / 616 - - - - - - - - - - - (Later)	GAD-615 GAD-616
FW PP 2A MAN LO/ HYD OIL LO/ OR INBK TRIP G-10	1. 2A main feedwater pump has tripped from: (A) Low feed water flow. (B) Low bearing oil pressure (C) Loss of a condensate pump 2. (A) Condensate pump indications. (B) Main feed flow.	1.(A) Main feed pump trip. (B) Turbine runback if >60% power. 2.(A) Verify RRK to <60% PWR, if applicable (B) Start other MFW PP or Cond. PP if available. (C) Follow loss of S/G FW Emerg. Proc. No. 2-0030132.	(A) (B) (later) (C) (Time delayed too)	74-3, 62X/MD (later)	GAD-615
FW PP 2A OVERLD/BKR TRIP G-18	1. 2A main feedwater pump has: (A) Tripped on overload. (B) Lose control power to breaker (C) Motor breaker has been racked out 2.(A) Breaker Indicate Lights - green on out.	1.(A) MFW pump trip (B) Turbine runback if >60% power. 2.(A) Verify RRK to <60% PWR, if applicable. (B) Start other MFW if available (C) Follow loss of S/G FW Emerg. Proc. No. 2-0030132.	Thermal Overload or time depen-trip	74-1, 74-2 Thermal overload and time dependent O.C. relay in breaker. - - - - - - - - - - - 2-0B03/2A1-6.9KV Bus	GAD-615 PID 7 MD Sheet 1
FW PP 2A FLO LO G-26	1. 2A main feed PP recirc VLVS not providing sufficient recirc flow for present pump flow. (A) Bal control/Mgr recirc flow correctly. (B) Main feed flow (C) # of feed pumps in unit MFW load.	1. Recirc VLV should open to provide at least (LATER) GPM flow through pump. 2.(A) Check # of feed pumps in unit load. (B) Check stability of main feed flow. (C) Have operator check recirc VLV locally if not responding.	(LATER)	25-09-1A1, 62Y (LATER)	GAD-615
FW PP 2A BRG OIL PRESS LO/ BEARING HIGH G-34	1. 2A main feed pump: (A) Low bearing oil header pressure. (B) Hi BRG oil suction press. indicative of excessive pump rotation. 2.(A) Aux oil pump indication lights - green.	1. Aux oil PP should start on lo BRG oil Press. of (LATER) PSIG. 2. Check pump locally; (A) Start aux oil pump if not running. (B) If pump has reverse rotation; manually isolate discharge line from pump.	to Press - (LATER) Rev rotation 35 PSIG oil press.	62Y/615 63X/618 25-09-9A1 (LATER)	GAD-615 GAD-618
FW PP 2A BRG THRU HI G-42	1. Hi BRG Temp. on one or more PP or extra BRG of MFW. 2. Check condition/alarm of TM system.	1. None 2. Have operator locally check pump: (A) Lube oil flow from bearings. (B) RCW flow to heat exchanger. (C) Local bearing temp indicators.	185° F (Increasing) on any bearing	TIS-09-7-1A1/1A2 TIS-09-8-1A1/1A2 TIS-09-9-1A1/1A2 Alarms from Temp. Ind. on local PP Monitor Panel	GAD-618

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FURTHER DESCRIBE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FW PP 2B SUCT PRESS LO TRIP C-3	1. 2B MFW PP has tripped on lo suction press. from: (A) Loss of running cond. or HDR drain PP. (B) Suction Strainer plugged 2.(A) MFW PP BKR indication - green. (B) Feed pump suction pressure gauge.	1.(A) MFW pump trip. (B) Turbine runback if >60% power. 2.(A) If MFWP has NOT tripped, start standby Cond. or Hdr drain PP if available. (B) Verify runback to ≤60% power. (C) Follow loss of S/G FW Emer. Proc. No. 2-0700030.	350 PSIG decreasing	(74-3,62X/DC) / 620 (52/DC,PS-12-158)/621	O&D-620 O&D-621
FW PP 2B FEAT LO/ BRG OIL PP/ OP INTLK TRIP C-11	1. 2B auto feedwater pump has tripped from: (A) Low feedwater flow. (B) Low bearing oil pressure. (C) Loss of a condensate pump. 2.(A) Condensate pump indications. (B) Auto feed flow.	1.(A) Auto feed pump trip. (B) Turbine runback if >60% power. 2.(A) Verify RWP to ≤60% power, if applicable (B) Start other MFW PP or Cond. PP if available. (C) Follow loss of S/G FW Emer. Proc. No. 2-0700030.	(LATER)	74-3,62X / TBD	O&D-620
FW PP 2B OVLD/TRIP C-19	1.2B Auto Feedwater Pump has: (A) Tripped on overload. (B) Lost control power to breaker. (C) Motor breaker has been racked out. 2.(A) Breaker Indicate Lights - green on red.	1.(A) MFW pump trip (B) Turbine runback if >60% power. 2.(A) Verify RWP to ≤60% power, if applicable (B) Start other MFWP if available (C) Follow loss of S/G FW Emerg. Proc. No. 2-0700030.	Therm OVLD OR TIME Dependent TRIP	74-1, 74-2 Thermal overloads and time dependent O. C. relay in breaker 2-0303/0900N-281	O&D-620 PD & ID Sheet 1
FW PP 2B RCIC LO C-27	1. 2B Auto Feed PP recirc VLVS not provide adequate recirc flow for present pump flow. (A) Not controlling recirc flow correctly. (B) Or, Large fluctuations in auto feed flow. (C) Too many feed pumps on, for present unit load 2.(A) Recirc valve position indications. (B) Auto Feed flow. (C) # of feed pumps vs unit MW load.	1. Recirc valve should open to provide at least (LATER) GPM flow through pump. 2.(A) Check # of feed pumps vs unit load. (B) Check stability of auto feed flow. (C) Have operator check recirc valve	(LATER)	FS-09-181 & 62Y	O&D-620
FW PP 2B BRG OIL PRESS LO/ REVERSE ROTN C-35	1. 2B Auto Feed pump: (A) Low bearing oil header pressure. (B) Hi BRG oil Sect. press. Indication of reverse PP rotation. 2.(A) Aux oil pump indicator lights - green.	1. Aux oil PP should start on lo BRG Oil Press. at (LATER) PSIG. 2. Check pump locally: (A) Start aux oil pump if not running. (B) If pump has reverse rotation, manually isolate discharge flow from pump.	Lo Press - (LATER) Rev Rotation 35 PSIG oil pressure.	62Y/620 63X/621 PS-09-083	O&D-620 O&D-623
FW PP 2B BRG THR HI C-43	1. High BRG Temp. on one or more pump or motor BRG or THRST. 2. Check condition/alarms of RTD system.	1. None 2. Have operator locally check pump: (A) Lube oil flow from bearings. (B) RCW flow to heat exchanger (C) Local bearing temp indicators	185° F (Increasing) on any bearing	TIS-09-7-181/182 TIS-09-8-181/182 TIS-09-9-181/182 Alarms from Temp. Ind. on Local PP Monitor Panel	O&D-628

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL G VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORDER, BOTH INDICATION WHICH VERIFY OR ALTERNATE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FW PMP 2A & 2B STRAINER /P HI R G-4	1. Plugged suction strainer on 2A or 2B MFW Pump 2. None	1. None 2.(A) Check strainer Diff. press. gage locally, to verify D.P. (B) Reduce load L.A.W. 2-0030123, (load change guidelines) to ≤64E. (C) Request MWP from SWC, to clean strainer	(LATER) (LATER)	RA-T-5/Refl ash PDIS-12-51A & 51B Strainer D.P. Ind.	GAD-650
AFW TO SG 2A VLVS MTR OVRLD / AFAS OVRLD G-12	1. One or more of the following valves: (A) 2A AFWP to 2A S/G MV-09-9 (B) 2B AFWP tie to 2A S/G MV-09-14 (C) 2C AFWP to 2A S/G MV-09-11 Has * tripped on OVRLD, * lost local off, * lost control power, * or AFAS (later) (AFAS ( ) Later) 2.(A) Respective valve ind. Lights - out. (B) (AFAS later - - - - - - -)	1. None 2.(A) If VLV motor MCC trips; check MCC locally notify Elect. Dept. if necessary (B) If AFAS overlaps; (LATER)	Therm. OVRLD Trip OR 8 Amp O.C. Trip (LATER AFAS)	RA-SP-1/Refl ash thermal overloads and O.C. trip coil in bkrs 2-41209/MCC-215/C58a 2-43063/MCC-265/C58a 2-60977/DCPP-255/-0.5RAB	GAD-1638 PID & MD Sheet 33, 40, 69F
CONDENSATE QUALITY/SODIUM HI G-20	1. Scanner leading; Into condenser as indicated by: (A) Hi-chlorides (cation conductivity); from CR-12-300 behind RRAB. (B) Hi-sodium content in condensate; from sodium analyzer. 2. Conductivity recorder CR-12-100 behind RRAB-202 rear.	1. None 2.(A) Notify Chemistry Department immediately (B) Follow condenser tube leak O/N Proc. 2-0130061, and S/G Chem. Out-of-Limits O/N Proc. 2-0130078.	0.5 micro mhos cation conductivity 10 PPB sodium content	COND ANALYZER Conductivity Recorder 625-06 sodium analyzer / rec. CR-12-100; behind RRAB-202, NA analyzer Cold Lab.	GAD-600 GAD-607
AFW PP 2A OVRLD/TRIP G-28	1.(A) 2A Aux feed PP has tripped on motor overload (B) OR, has been racked out. (C) OR, has lost control power 2.(A) 2A AFW PP Amps, MCC Indicate Light-out or green (B) 2A AFW MCC, Elect and pressure.	1. 2A AFW pump trips. 2.(A) Use 2C AFW PP to feed 2A S/G if necessary (B) Investigate cause for pump overload.	Therm. OVRLD OR TIME Dependent O.C. Trip	74-1, 74-2 thermal OVRLDS and Time Dependent O.C. Relays in MCC 2-20212/2A3-4 460V bus	GAD-629 PID & MD Sheet 4
AFW PP 2A SUCTION PRESS LO G-36	1. Low suction pressure to 2A AFW pump from; (A) Boundary large increase in feed rate, (B) Or, low level in CST. 2.(A) CST level indication (B) Feed rate	1. None 2.(A) Increase in feed; ensure alarm clears momentarily, or reduce feed rate. (B) CST low; have operator start makeup	3.0 PSIG	PS-12-17A suction pressure SW 2A AFW PP Suction Side	GAD-629
AFW PP 2A MCC FAILURE / CS START/ SS TRIP G-45	1.(A) The 2A Aux feed PP start circuitry has been given a start signal, but PP has failed to start (B) OR, the 2A AFW PP has been TRIP from Control Room by N024/TRIP SW. 2.(A) Failure; pump Indicate Lights - green. (B) Failure; pump Indicate Lights - red.	1. If failure; Loss of control from control Rm 2.(A) Investigate MCC failure locally, contact Elect. Dept. for assistance (B) Return N024/TRIP SW to "NORM" if applic.	Start Signal >5 sec w/ Bkr open N024/TRIP SW in "ISOLATE"	SS/TRIP, 74-3, CS/629 PP MCC 2-20212 460V Bus 2A3 and N024/TRIP SW Cable Spreading Room	GAD-629

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 5

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. COMMON ROOM INDICATION WHICH VERIFY OR PERSONNEL DISPATCH	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
AFW PP 2A/B/C STRNR 2A/B/C DP R III G-5	1. One or more Aux feed pump suction strainers indicates dirty DS III-B/P. 2. None	1. None 2.(A) Check local strainer D/P gauges. (B) Remove PP from SVC as soon as possible to clean strainers.	(LATER) III D/P trans	RA-RAB-5-Ref Lists From PDIS-12-52A, B, C Strainer D/P Switches (LATER)	OAP-640
AFW TO ST 2B VLVS MOV OVRLD/ AFAS OVRID R G-11	1. One or more of the following valves: (A) 2B AFWP to 2B S/G HV-09-10 (B) 2A AFWP tie to 2B S/G HV-09-11 (C) 2C AFWP to 2B S/G HV-09-12 Has * tripped on overload, * MOV turned off, * lost control power, * or AFAS (later) (AFAS LATER) 2.(A) Respective valve ind. lights - out. (B) (AFAS Later)	1. None 2.(A) If MOV motor MOV trips; check MOV locally, notify Elect. Dept. if necessary (B) If AFAS override; (LATER)	Therm. OVRLD Trip OR 8 Amp O.C. Trip	RA-ST-2 Thermal overloads and O. C. trip coil in bkrs 2-4120/MCC-2A5 2-4306/2/MCC-2B5 2-6095/2/DDP-2S4	OAP-1109 PID & MD Sheets 33, 39, 69S
AFW PP 2C LUBE OIL TEMP LO G-21	1. Low lube oil temp in 2C AFW PP lube oil system (heater not functioning properly) 2. None	1. None 2. Have operator check temp. on 2C AFW PP and check MCC power supplies.	(LATER)	TS-2 Temp. Switch 2C Aux. Feed Pump Lube Oil System	OAP-631
AFW PP 2B OVRLD/TRIP G-29	1.(A) 2B Aux feed pump has tripped on motor overload (B) Or, has been racked out. (C) Or, has lost control power. 2.(A) 2B AFW PP amps, MCC Ind. lights - out or green (B) 2B AFW breaker, flow and pressure.	1.2A AFW pump trips 2.(A) Use 2C AFW PP to feed 2B S/G if necessary (B) Investigate cause for PP overload.	Therm. OVRLD Trip OR Time Dependent O. C. Trip	74-1, 74-2 Thermal OVRLDS and Time Dependent O.C. RLYS in BRK 2-2041Z/4160V-2B3	OAP-630 PID & MD Sheet 5
AFW PP 2B SECTION PRESS LO G-37	1. Low suction pressure to 2B AFW pump from; (A) Boundary Valve Increase in feed rate, (B) OR, low level in CST. 2.(A) CST level indication (B) Feed rate	1. None 2.(A) Increase in feed; ensure alarm clears manually, or reduce feed rate. (B) CST low; have operator start make-up to CST.	3.0 PSIG	PS-12-17B Section Pressure Switch 2B AFW Pump Section Side	OAP-630
AFW PP 2B BKR FAILURE/ CS SIGNAL SS ENER. G-45	1.(A) The 2B Aux Fd PP start circuit, has been given a start signal, but PP has failed to start (B) OR, the 2B Aux Fd PP has been tail from Control Room by 8833/ESW. SW. 2.(A) Failure; pump indicate lights - green (B) Failure; pump indicate lights - out	1. If Failure; loss of control from Control Rm 2. (A) Investigate BRK failure locally, contact Electrical Department for assistance (B) Return 8833/ESW. SW to "8834" if applicable	Start Signal >5 sec. w/ Bkr open 8833/ESW. SW in "ISOLATE"	SS/ESW., 74-1, CS/630 PP BRK 2-2041Z 4160V Bus 2B3 and 8833/ESW. SW Cable Spreading Room	OAP-630

/R2

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL G VERTICAL COLUMN 6

ANNUN TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
G-6 CCW PP 2C BEARINGS TEMP HI	1. Thrust BRG temp. hi due to loss of cooling or loss of oil. 2.(A) Motor Amps (B) TCM low press/high temp. alarm	1. No Auto Action 2.(A) Check local temp. indicator (B) Check motor oil level & cooling water supply (C) If temp. exceeds 200° F., stop pump (D) Reduce power to below 60% power before transfer pump	(LATER)	TIS-12-27-1C1, 1C2 (LATER)	GAD-219
G-14 SI 2A/2B TO ABAP 2C VLVS M/U CLOSE/AFAS OVRRD/SS ESOL. R	1. Steam supply valves to 2C AFW, SE-08-1, SE-08-2, HV-08-12, HV-08-13 misaligned, loss of power CS not in auto, or isolate switch in isolate. 2. Check indicating lamps and control switches on RTGB-202	1. None 2. Restore valve operability required for present mode of operation	NONE	RA-ST-3 (LATER)	GAD-638
G-22 CST N_2 BLANKET PRESS HI-HI/LO	1. HI-HI press., or Lo press. in CST of nitrogen cover gas. 2. None	1. SE-29-1, N_2 Gas fill solenoid isol. closes on HIGH pressure. 2.(A) Verify N_2 Pressure (B) Insure alarm not caused by sudden increase or outage of water. (C) Check loop seal and tank vent supply valves in service.	Lo-(alarm) 1.0" h_2 O HI-(shut V.) 5.8" h_2 O HI-HI-Alarm 6.0" h_2 O	PS-29-4-1/Lo PS-29-4-2/HI HI Pressure switches Mounted on Condensate Tank	GAD-743
G-30 AFW PP 2C STEAM PRESS LO	1. Low STM Press. in 2C AFW PP STM supply header. 2. 2A AFW PP supply STM press. Indication PI-08-5, RTGB-202.	1. None 2.(A) If 2A or 2B Elec. AFW PP available, switch over to elec. pumps. (B) If not available, use of 2C STM PP is acceptable, as long as STM Press >60 PSIG	760 PSIG	PS-08-6	GAD-631 P&ID
G-38 AFW PP 2C SUCTION PRESS LO	1. Low suction pressure to 2C AFW pump from; (A) Boundary Logic Increase in feed rate, (B) OR, low-level in CST. 2.(A) CST level indication (B) Feed Rate	1. None 2. (A) Increase in feed; insure alarm clears momentarily, or reduce feed rate. (B) CST low; have operator start makeup to CST	3.0 PSIG	PS-12-17C Suction pressure Switch 2C Aux Feed	GAD-631 P&ID 2998-6-080 (2 of 2)
G-46 AFW PP 2C BRG FAIL/TRIP/ CS ESOL	1.(A) 2C AFW pump failure/trip (Later explanation of inputs) (B) OR, NR/ESOL Sw has ESOL 2C AFWP from Control Rm 2.(A) Failure; pump ind. lights - green. (B) Isolate; pump ind. lights - out.	1. FAILURE; 2C AFWP will trip. 2.(A) FAILURE; wait 1 min. for governor, then take HV-08-K Sw. to OPEN then open, pump will reset & restart. (B) ISOLATE; return NR/ESOL SW to "NORM" if applicable.	(LATER) failure) NORM/ESOL SW to ESOL	SS-612-ESOL Switch CR#1, CR 7 2/failure 2C Aux. Feed Pump Control Panel and ESOL Panel	GAD-631

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT NUMBER	1. ...ATOR 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
C440 PP 2A/2C OVLD/TRIP G-7	1. The 2A or 2C Cond. PP on the 2A 86C has tripped on overload. 2.(A) Pump amps, flow, pressure. (B) Bkr Indicate Lights – out.	1.(A) Accidental 2nd feed pump trip if 2 cond. pumps running. (B) Backup runback to 66K if MBAP trips 2.(A) Ensure RUNK, & stabilize plant if applic. (B) Check PP out locally-consider swapping to other 2A/2C pump.	Therm. OVRLD trip Or Time Dependent O.C. Trip	74-1, 74-2 Therm. OVRLDS & Time Dependent Relays In BKR 2-2010T/4160V-2A2	OAP-605 PD 7 ID Sheet 3
C440 PP 2A BEARINGS TEMP HI G-15	1. HI temp. on 2A Cond. PP motor guide or thrust BRG 2. None	1. None 2.(A) Have operator check BRG temps. locally check BW flow. (B) Remove PP from SVC if temp. exceeds (LATER) °F.	Not Determined (LATER)	TIS-12-2T-1A1, 1A2 Bearing Temp. Switch 2A Condensate Pump	OAP-219
C440 PP BRG OIL WDR FLO R LO G-23	1. Low BW flow to Cond. PP BRG present on 2A, 2B, or 2C Cond. PP. 2. None	1. None 2. Have operator check Reflash Panel & adjust Alarming Pump's TCV flow.	Not yet determined (LATER)	RA-T-6/Reflash From BW Flow Switch FIS-13-21A, B, C	OAP-1107
C440 PP 2A/B/C RECIRC FLOW LO G-11	1. Cond. PP output flow low, and recirc. flow is indicated on (2A, 2B and/or 2C pumps) 2. Respective pump recirc valve pos. indicator lights	1. Recirc VLV should open when PP flow is < 2900 GPM. 2.(A) Ensure recirc valve open. (B) Ensure # of Cond. PPs running consistant with Cond. system load.	ORE Recirc. Flow While Pump In Recirc.	2, 2-1, FS-12-6B/C/A Accoustic Flow Detectors Cond. Pump Recirc Lines	OAP-604 OAP-606
CST LEVEL HI G-19	1. Condensate tank has been over filled. 2. CST level gauges _____	1. LCV – _____ should close when level reaches _____ 2. Have operators stop CST fill, and/or Isolate ( )	44'.5" CST Level High	LS-12-8 Level Switch Condensate Tank	OAP-743
CST LEVEL LO G-27	1. Condensate tank level has fallen below 33 feet. 2. CST level gauges _____	1. LCV should regulate level normally between alarm points. 2.(A) Initiate fill to CST. (B) Consult Tech Specs to ensure adequate	33' CST Level Low	LS-1-8 Level Switch Condensate Tank	OAP-743

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. ADDITIONAL ROOM INDICATION WHICH VERIFY OR PERTINENT REMARKS	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCW PP 2A/2C OVRLD/TRIP G-8	1. The 2A or 2C Cool. PP or 2A 480V trippes. a OVRLD 2.(A) Pump amps, flow, pressure. (B) Mr Indicate lights - out	1.(A) Assert dbl 2nl feed PP trips if 2 Cool. pumps running. (B) Turbine runback to <60% if MAP trips. 2.(A) Ensure RRR & stabalize plant if applic. (B) Check pump out locally-consider stopping to etb a 2B/2C pump.	Therm. OVRLD Trip or Time Dependent O.C. Trip	74-1, 74-2 Thermal overloads and time dependent relays 2-2030//4160V-2B2	GAD-606 PD & MD Sheet 4
CCW PP 2B BEARINGS TEMP HI G-16	1. HI temp. on 2B cool. PP thrust or guide BRG. 2. None	1. None 2.(A) Have operator check BRG temps locally - check SW flow (B) Remove pump from service if temp. reaches (LATER) ^{0}F.	Not Determined (LATER)	TIS-12-27-181,182 BRG Temp. Switch 2B Condensate Pump Motor	GAD-219
CCW PP 2A/B/C STRAINER /P R HI G-24	1. HI Diff. Press. across 2A, 2B, or 2C Cool. PP suction strainer, indicating plugging 2. NONE	1. NONE 2.(A) Check strainer D.P. locally. (B) Follow Cool. Sys. Operating Procedure 2-(LATER) for strainer removal from SWC.	14" Water Differential Pressure	RA-T-6/Refl ash From: PDIS-12-53A, B, & C Strainer D.P. SW. Condensate Pump Suction Strainer	GAD-640 P&ID 2998-6-080 (1 of 2)
FW PP SEAL LEAKOFF BK LEVEL HI/LO G-37	1. HI or lo level in feed PP bleedoff collection tank 2. Low vacuum in Cool. could impede tank draining ability.	1. LCV-12-21 should open & close to regulate level between alarm setpoints. 2.(A) Check condenser vacuum. (B) Check OOS of drain VLV & SYS alignment locally.	Lo-4'-4" HI-8' from Tank Base	LIS-12-22 Tank Level SW Main FW PP Leak-Off Collection Tank	GAD-628 P&ID 2998-6-091
HOTWELL LEVEL HI/LO G-40	1. High or Low level in the main condenser Hotwell 2.(A) Hotwell level gauge LI-12-1. (B) Reject Valve Position	1.(A) HI Level - reject VLV open if unisolated (B) Low Level - Hotwell sprays - open. (C) Lo-Lo Level - Lg. Makeup VLV open. 2. Take appropriate action to return NL. (A) Open/close MSV vacuum drag. (B) Check Hotwell sprays locally.	Lo - 25" HI - 43" From Hotwell Base	LS-12-24/Lo LS-12-3/HI LS-12-24/Lo Level Switches (2, 3)/2B, (24)/2A Condenser Hotwell	GAD-741 P&ID 2998-6-080 (1 of 2)
CCW TO HXRS 2A & 2B FLO LO G-48	1. Lo Cool. flow through SWC/CCW cool. 2. Lo vacuum, low cool. flow	1. Cool. recirc. VLV (LATER) should maintain recirc. flow >7500 GPM. 2.(A) Check RCV (LATER) (B) Check VLV Hcmp per Cool. Operating Procedure No. 2-(LATER)	<7500 GPM Header Flow	FS-21-1 Flow SW Off Flow XMTR 12-1 Condensate Header After 6 SDH Cool.	GAD-1007 P&ID 2998-6-080 (1 of 2)

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RH/LP SETPOINT RH/LO ORR. A H-1	1 Indicates problem within one process calculator or generated setpoint has exceeded it's operating limit. 2. RH/LP setpoint meter PIA-1102 on RRR 303.	1. Could provide a channel trip if set too high 2.(A) Ensure setpoint actually in error. (B) Consult Tech. Specs for action. (C) Notify I & C Department.	RH-2375 PSIA Lo- 190 PSIA	PIA-1102 RH/LP Setpoint Meter RRR-303	OAP-3/2 Instrument List
PZR ORR. X PRESS RH-LO H-2	1. Indicates RH/Lo press. transient in excess of capability of press. control system. 2.(A) Compare all channels of PZR press. indications (B) Check controls; htrs on/ spray.	1.(A) Backup, full spray @ 2525 PSIA. (B) All htrs on ful by 2300 PSIA Rec. 2. Follow Pressurizer Press. & Level Off Normal Procedure - No. 2-OP0035.	RH-2340 PSIA Lo-2100 PSIA	PA-1100X Pressure Alarm Bistables Pressure Control Circuitry (RRR-303)	OAP-97 Instrument List
PZR ORR. X LEVEL RH-LO H-17	1. Indicates RH/Low pressurizer level in excess of capability of level control system. 2.(A) Compare all channel of PZR level indications. (B) Check charging pumps and charging/letdown flow	1.(A) PZR level controls should control PZR level to RCS setpoint. (B) All htrs will be lost if level decays to 27% actual PZR level. 2. Follow PZR press. & level O/N Proc. No.	RH > + 8% Lo < - 5% PZR level error from RCS Setpoint	LA-111001 61X/LA-111001. Alarm Bistables Level Control Circuitry (RRR-303)	OAP-139 RCS Training Lesson Plan
BLANK H-25	BLANK				
BLANK H-33	BLANK			- - - - - - - - - - -	
BLANK H-41	BLANK			- - - - - - - - - - -	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL ORDER 2

WINDOW TITLE	1. INDICATED CONDITION 2. CHANNEL BLOCK INDICATION WHICH VERIFY OR PERMISSIVE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RM/LP SETPOINT HI/LO CHNL B H-2	1. Indicates problem within core protect calculator as generated setpoint has exceeded it's normal operating band. 2. RM/LP setpoint meter PIA-1028 on RCB-303.	1. Could generate channel trip if set too high 2.(A) Ensure setpoint actually in error. (B) Consult Tech. Specs for Action (C) Notify I & C Department.	HI-2375 PSIA Lo-1900 PSIA	PIA-1102B RM/LP Setpoint Meter RCB-303	CAD-373 Instrument List
PRZR CHNL Y PRESS HI-LO H-10	1. Indicates HI/Low press. transient in excess of capability of press. control system. 2.(A) Compare all channels of PZR Press. Indication (B) Check controls; Htrs and spray.	1.(A) No htrs, full spray @ 2325 PSIA (B) All htrs on full by 2200 PSIA Dec. 2. Follow Pressurizer Press. & Level Off Normal Procedure 2-0120035.	HI-2340 PSIA Lo-2100 PSIA	PA-1100Y Pressure Alarm Bistable Pressure Control Circuitry (RCB-303)	CAD-98 Instrument List
PRZR CHNL Y LEVEL HI-LO H-18	1. Indicates HI/Lo PRZR level in excess of capability of press. control system. 2.(A) Compare all channels of PZR level indication (B) Check charging pumps and charging/letdown flow	1.(A) PRZR level controls should control PRZR level to RCS setpoint. (B) All heaters will be lost if level decays to 27% actual PZR level. 2. Follow Pressurizer Press. & Level O/N 2-0120035	HI > + 5% Lo < - 5% PRZR level error from RCS Setpoint	LA-1110MH 63X/LA-1110YL Alarm Bistables Level Control Circuitry (RCB-303)	CAD-139 Instrument List
BLANK H-34	BLANK			- - - - - - - - - - - -	
PORV 1474 LTOP CHNNL SELECT LTOP H-34	1. RCS temp. has decreased to a range where the PORVs required to be in LTOP position. 2.(A) RCS pressure indications. (B) RCS T-Cold indications.	1. None - (Informational Alarm Only) 2. Select "LTOP" position on PORV V-1474 Mode select SW, as per steps in RCS Cooldown Procedure	280°F Dec. T-Cold with PORV Mode sel. in "NORMAL"	68X/1474 63X/1476 LTOP 63X/T1115 CIRCUITS RCB-303	CAD-1629 FSAR 5.2-28
PORV 1474 NORM CHNNL SELECT NORM H-42	1. RCS temp. has increased to a range where PORVs required to be in "NORMAL" position. 2.(A) RCS press indications. (B) RCS T-Cold indications. (C) PORV Mode select switch position.	1. None - (Informational Alarm only) 2. Select "NORM" position on PORV V-1474 Mode select SW, as per steps in RCS Heat-Up Procedure	320°F Inc. T-Cold with PORV Mode select in "LTOP"	68X/1474 68X/1474 LTOP 63X/T1115 CIRCUITS - - - - - - - - - - - - RCB-303	CAD-1629 FSAR 5.2-28

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION UPON INDICATION WHICH VERIFY OR PERMANENT REMEDIE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RH/LP SETPOINT RH/LO OHB. C H-3	1. Indicates problem with the core protect calculator as generated setpoint has exceeded it's normal operating band. 2. RH/LP setpoint meter PIA-1105C on RTGB-203.	1. Could generate channel trip if set too high 2.(A) Ensure setpoint actually in error. (B) Consult Tech Specs for action (C) Notify I & C Department	Hi-2175 PSIA Lo-1900 PSIA	PIA-1102C RH/LP Setpoint Meter RTGB-203	OHB-174 Instrument List
PRZR SFTY RLF V-1300 DISCH TEMP HI J-11	1. PRZR safety VLV V-1300 open or leaking as indicated by hi temp. in relief disch tailpipe. 2.(A) Tailpipe temp. Indicator. (B) PRZR press. Indications (C) Quench tank parameters. (D) Acoustic monitor display not always (H-1)	1. Base 2. Follow Pressurizer Safety/Relief Valve O/N Procedure No. 2-0130036.	120°F	TIA-1107 Safety Tailpipe Temp Indicator RTGB-203 SIGMA	OHB-134 Instrument List
PRZR SFTY RLF V-1301 DISCH TEMP HI H-19	1. PRZR safety VLV V-1301 open or leaking as indicated by high temp. in relief disch tailpipe. 2.(A) Tailpipe temp. Indicator (B) PRZR press. Indications (C) Quench tank parameters. (D) Acoustic monitor display not always (H-1)	1. Base 2. Follow Pressurizer Safety/Relief Valve Off Normal Procedure #2-0130036.	120°F	TIA-1108 Safety Tailpipe Temp Indicator RTGB-203 SIGMA	OHB-135 Instrument List
PRZR SFTY RLF V-1302 DISCH TEMP HI H-27	1. PRZR safety VLV V-1302 open or leaking as indicated by hi temp. in relief disch tailpipe. 2.(A) Tailpipe temp. Indicator. (B) PRZR press. Indications (C) Quench tank parameters	1. Base 2. Follow Pressurizer Safety/Relief Valve Off Normal Procedure #2-0130036.	120°F	TIA-1109 Safety Tailpipe Temp Indicator RTGB-203 SIGMA	OHB-135 Instrument List
PRZV 1474 TEST/OVRRD H-35	1. PRV 1474 in in the "TEST" or "OVERRIDE" position 2. PRV-1474 switch position.	1. PRV operation is disabled with switch out of "OFF" (normal pos.) 2. Return PRV Override/Test switch to "OFF" if applicable.	Switch out of "OFF" Position	HS-1474-2/1629 PRV Override/Test Switch RTGB-203	OHB-1629 FSAR 5.2-27
LTOP ORB. S INITIATED H-43	1. Lo temp/HI press. transient may be occurring in RCS needing immediate attention. 2. RCS temperature & pressure indication.	1. PRV 1474 will open IF: (A) Disk select Sw. in LTOP, (B) T-Cold < 375°F, (C) And, RCS press >490 PSIG 2. Immediate/ Take steps to reduce RCS press.	Tc < 280°F or Sw in "LTOP" with 1405 & 1406 pressure >490 PSIG	68X/1474 63X/P-1115 P-1103, P-1104 LTOP Circuitry RTGB-203	OHB-1639 FSAR 5.2-28

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 11 VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PRECEDENT TO ERROR	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
W/LP SETPOINT HI/LO CHAN D 11-A	1. Indicates problem within core protect calculator as generated setpoint has exceeded it's normal operating band. 2. W/LP setpoint meter PIA-1102D on RICB-203.	1. Could generate channel trip if set too high 2.(A) Ensure setpoint actually in error. (B) Consult Tech Spec for action (C) Notify I & C Department.	HI-2175 PSIA Lo-1900 PSIA	PIA-1102D W/LP Setpoint Meter RICB-203	OAP-375 Instrument List
BLANK 11-B	BLANK				
PORV 1475 RELIEF LINE TEMP HI 11-50	1. PORV-1475 open or leaking as indicated by high downstream tailpipe temp. 2.(A) Pressurizer pressure indications. (B) Valve position indicator lights. (C) Quench tank parameters. (D) Acoustic monitor indications & alarm 10-1	1. None 2. Follow PZR Safety/Relief VLV O/N Procedure No. 2-0130016.	120°F	TIA-1106 PORV Tailpipe Temperature Indicator RICB-203 SIGMA	OAP-134 Instrument List
PZR SURGE LINE TEMP LO 11-51	1. PZR surge line temp. low due to: (A) Insurge into the pressurizer, (B) Or, Insufficient mini-flow bypass spray flow. 2.(A) Pressurizer level changes. (B) Pressurizer spray flow.	1. None 2.(A) Ensure pressurizer level controls normal (B) Consider adjusting mini-flow bypass spray valves, or putting PZR on recirc	590°F	TIA-1105 Surge Line Temperature Indicator RICB-203 SIGMA	OAP-134 Instrument List
PORV 1474 RELIEF LINE TEMP HI 11-A6	1. PORV-1474 is open or leaking as indicated by high downstream tailpipe temperature 2.(A) Pressurizer pressure indications. (B) Valve position indicator lights. (C) Quench tank parameters.	1. None 2. Follow Pressurizer Safety/Relief Valve OFF Normal Procedure #2-0130016.	120°F	TIA-1110 PORV Tailpipe Temperature Indicator RICB-203 SIGMA	OAP-135 Instrument List
BLANK 11-A4	BLANK				

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONFIRM. BOOTH INDICATION WHICH VERIFY OR PERMISSIVE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
LOOP 2A HOT LEG TEMP H-5	1. 2A Hot Leg temp has increased to 610°F. 2. Check all other T-Hot indication channels for comparison.	1. None 2.(A) Assure valid alarm. (B) Reduce RCS temp. using boron addition or CEA insertion.	610°F High T-HOT	TIA-1111X 2A Hot Leg Temp. SIGNAL Indicator RRSB-203	OAP-136 Instrument List
LOOP 2B SPRAY LINE TEMP H-13	1. PZR spray line from 2B Cold Leg low temp. due to: (A) Insufficient spray valve bypass line flow, (B) Or, RCS not at normal oper. temp. 2.(A) Pressurizer spray line temp indicator TIA-1103 (B) Pressurizer spray line temp.	1. None 2.(A) Adjust manual bypass valves around spray valves when practical. (B) Ensure no spray from this line when temp diff. >320°F.	515°F Low	TIA-1103 2A Spray Line Temp. SIGNAL Ind. RRSB-203	OAP-133 Instrument List
SG 2A STEAM GEN. PZR LEVEL LO H-21		1. None 2.(A) Notify Mechanical Maintenance Dept. (B) Consult Tech Spec Action Statement	Later	PS-1950A Accumulator Pressure Switch LATER	OAP-461
PZR PROPORTIONAL HTRS TRIP/ SS PZR. H-29	1.(A) Proportional htrs have been tripped off by low PZR level, (B) Or, backup htrs have been isolated from Control Room by Manual/Isolate SW. 2. Backup heater control switch - Isolate Position	1. Loss of proportional heater control. 2.(A) Follow PZR Press/Level O/N Proc. No. 2-0120010. (B) Return Man/Isol SW to "Auto" if applic.	27% Actual PZR Level MAN/ISOL SW IN	74-Alarm Contact in Level Control Circuitry PZR Level Controls RRSB-203	OAP-122 OAP-123
PZR HEATERS INT/PRESS INTLK ORIDE H-37	1. Backup press./Lo-Lo lvl. htr. cut-off sys. has been initially or tardily disabled by operator action. 2. Backup Interlock bypass keyswitch position.	1. Ability to regain & control PZR Htrs. 2. Follow PZR Press/Level O/N Procedure No. 2-0120010.	Backup Interlock Bypass SW Out of "LOCKED OFF" Position	HS-124 Backup Interlock Bypass Key Switch RRSB-203	OAP-122
BLANK H-45	BLANK			- - - - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. CHANNEL BOTH INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 2B HOT LEG TEMP H H-6	1. 2B Hot Leg temp has increased to 610°F 2. Check all other T-Hot indication channels for comparison.	1. None 2.(A) Assure valid alarm. (B) Reduce RCS temperature using boron	610°F High T-HOT	TIA-1121X 2B Hot Leg Temp SIGMA Indicator RTGB-203	CMD-137 Instrument List
LOOP 2B2 SPRAY LINE TEMP LO H-14	1. PZR spray line from 2B cold leg low temp. due to: (A) Insufficient spray vlv bypass line flow, (B) Or, RCS not at normal oper. temp. 2.(A) PZR spray line temp indicator TIA-1104 (B) PZR surge line temp	1. None 2.(A) Adjust mini-flow bypass valves around spray valves when practical (B) Ensure no spray from this line when temp diff. >320°F.	515°F Low	TIA-1104 2B2 Spray Line Temp SIGMA Ind.	CMD-133 Instrument List
SG 2B SURR OIL RSVR LEVEL LO H-22		1. None 2.(A) Notify Mechanical Maintenance Dept. (B) Consult Tech Spec Action Statement	(LATER)	PS-1950B Pressure Switch S/G Accumulator	CMD-461
PZR B/U HTRS LO LVL TRIP/ SS INOP. H-30	1.(A) Backup htrs. have been tripped off by 27% low PZR level, (B) Or, backup htrs have been isolated from Control Room by Normal/Isolate Sw. 2. Backup htr control switches indicate lights - out	1. Loss of backup heater control 2.(A) Follow PZR Press/Level O/N Proc. No. 2-0215051, (B) Return Norm/Isol SW to "NORMAL." if applic	27% Actual PZR Level PK121/PK81 SW in "NORMAL"	74-Alarm Contact in Level Control Circuitry PZR Level Controls RTGB-203	CMD-125 CMD-129
PORV 1475 LTOP CHANN SELECT LTOP H-38	1. RCS temp. has decreased to a temp where the PORVs required to be in LTOP position. 2.(A) RCS pressure indications. (B) RCS T-Cold indicators. (C) PORV mode select switch position.	1. None - (Informational alarm only) 2. Select "LTOP" position on V-1475 PORV Mode select SW, as per steps in RCS Cooldown Proc.	280°F Dec. T-Cold with PORV Mode select in "NORMAL"	68X/1475 63x/1477 LTOP 63X/TE125 CIRCUITS RTGB-203	CMD-1630 FSAR 5.2-28
PORV 1475 MODE CHANN SELECT MODE H-46	1. RCS temp. has increased to a temp where PORVs required to be in "NORMAL" position. 2.(A) RCS pressure indications. (B) RCS T-Cold indicators. (C) PORV mode select switch position.	1. None - (Informational alarm only) 2. Select "NORMAL" position on PORV V-1475 mode select switch, as per steps in RCS Heat-Up Procedure.	320°F Inc. T-Cold with PORV Mode sel. in "NORMAL"	68X/1475 63X/1477 LTOP TE125 CIRCUITS RTGB-203	CMD-1630 FSAR 5.2-28

ANNUNCIATOR PANEL H VERTICAL COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. [illegible] SECTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 2A2 COLD LEG TEMP H-7	1. Loop 2A2 cold leg temp. has risen above Tech Spec T-Cold Limit. 2. Compare all RCS T-Cold temperature indications.	1. None 2. Reduce RCS temp. below T.S. limit of 536°F, by location of CEA insertion.	556°F HI T-Cold	63/TIC 1111Y Temp. Indicating SIG9A RTGB-203	OAP-136 Instrument List
REACTOR HEAD SEAL PRESS HI H-15	1. Indicates RCS leakage past the first O-Ring seal of Rx head. 2. None	1. None 2.(A) Determine magnitude of leak by draining down pressure switch. (B) Continue monitoring of leak-rate and assure compliance with Tech Specs.	1000 PSIG IN Between Seal Rings	PSH118 Press. Switch On Line From Rx Vessel To Switch/Gauge Outside Bio-Shield	OAP-141 Instrument List
LOOSE PARTS MONITORING ALARM H-23	1. Loose parts monitor has detected abnormal noise level in RCS, Rx vessel, or steam generator. 2. Loose parts monitor panel; alarming channel in RED	1. None 2.(A) Monitor RCS/Rx for anomalies. (B) Record trace of noise, if possible. (C) Notify I & C to compare traces with	Variable Multiple Levels On LPM Channels	LPMS GNRL PNL Alarm Output Rly Loose Parts Monitor Panel Behind RTGB-202	OAP-1212
BLANK H-31	BLANK			- - - - - - - - - - -	
PORV 1475 TEST/OVRID H-39	1. PORV 1475 is in the "TEST" or "OVERRIDE" position. 2. PORV 1475 switch position.	1. PORV OPS disabled with SW out of "OFF" (Normal Pos.) 2. Return PORV Override/Test SW to "OFF" if applicable.	SW out of "OFF" Position	HS-1475-2/1630 PORV Override/Test SW RTGB-203	OAP-1630 FSAR 5.2-27
LOOP OPR. B TRANSMIT H-47	1. Low temp/HI press. transient may be occurring in RCS needing immediate attention. 2. RCS temperature & pressure indications.	1. PORV 1475 will OPEN IF: (A) Hot select Sw. in LOOP, (B) T-Cold <525°F. (C) Act. RCS press >400 PSIG 2. Immediately take steps to reduce RCS	RC <280°F OR Sw in "LOOP" WITH 1105 & 1106 Pressure	63X/1475 63/TI125 PC-1105, PC-1106 LOOP Circuitry RTGB-203	OAP-1630 FSAR 5.2-28

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. Optional ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 2B2 COLD LEG TEMP 8E B-8	1. Loop 2B2 cold leg temp. has risen above Tech Spec. T-Cold Limit. 2. Compare all RCS T-Cold temperature indications.	1. No Auto Action. 2. Reduce RCS temp. below T.S. Limit of 548°F, by location of CEA Insertion.	556°F IR T-Cold	638/TIC-1121Y Temp. Indicating Alarm/SB24A RTGB-203	OAP-137 Instrument List
QUENCH TANK PRESS 8E B-16	1. RC quench tank temp. (near bottom of tank) 2. Quench tank pressure indicator on RTGB-203.	1. Reset, reduce press. Increase to Q.T. Safety Pressure of 75 PSIG. 2. Follow Quench Tank Normal Operating Procedure 2- (LATER)	15 PSIG IR	PIA-116 Pressure Indicating Alarm/SB24A RTGB-203	OAP-141 Instrument List
QUENCH TANK TEMP 8E B-24	1. RC quench tank temp. (near bottom of tank) 2. Quench tank temperature indicator on RTGB.	1. No Auto Action. 2. Follow quench tank Normal Operating Procedure #2- (LATER) to reduce temp.	300°F IR	TIA-1116 Temp. Indicating Alarm/SB24A RTGB-203	OAP-135 Instrument List
QUENCH TANK LEVEL HI/LO B-32	1. Quench tank lvl out of Norm. Operating band. 2. Quench tank lvl indicator on RTGB.	1. No Auto Action. 2. Follow Quench Tank Normal Operating Procedure #2- (LATER) to return to	HI - 64% Lo - 44% Level	74-1, 74-2/1629 Level Indicating Alarm/SB24A RTGB-203	OAP-140 Instrument List
PRV 1474/1475 DC CONTROL FAILURE B-50	(LATER)			- - - - - - - - - - - -	
EMERG SYS STAND-BY POWER ON B-48	(Exact cause being determined)	(Later)	(Later)	KIA, KIB - - - - - - - - - - - -	

2

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR OTHERWISE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2A1 OVRLD/TRIP 1-1	1.(A) RCP has tripped on over current, (B) OR, RCP has lost control power, (C) OR, RCP has been racked out 2.(A) Pump Amps Zero (B) Breaker Indicator Lights - green or out.	1.(A) Pump Trips - stops. (B) Rx will trip on-low RCS flow. 2.(A) If critical, follow Rx trip O/N Procedure 2-0030150. (B) If critical and N.I. pumps lost; follow Nat-Circ. Cooldown Emerg. Proc. 2-0130040 (C) Refer to RCP O/N Proc. 2-0120034.	Therm. OVRLD OR Time Depend TRIP	74-1, 74-2 Trip Contacts Bkr 2-30104 2A1 6.9KV Bus	GAD-101
RC PP 2A1 VIBRATION HI 1-9	1. Excessive vibration or axial shaft thrust movement detected on 2A1 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RRB-204.	1. None 2.(A) Check display indicators behind RRB-204 (B) Follow RCP OFF-Normal Proc. 2-0130034	Variable Setpoint Set HR Higher Than Normal	VK-REI-01-1 Vib. Detection Equip. Behind RRB-304	GAD-92
RC PP 2A2 OVRLD TRIP 1-17	1.(A) RCP has tripped on overcurrent, (B) OR, RCP has lost control power, (C) OR, RCP has been racked out. 2.(A) Pump Amps Zero (B) Breaker Indicator Lights - green or out.	1.(A) Pump trips - stops. (B) Rx will trip on - low RCS flow. 2.(A) If critical; follow Rx Trip Off-Normal 2-0030150. (B) If critical and N.I. pumps lost, follow Nat-Circ. Cooldown Emerg. Proc. 2-0120050 (C) Refer to RCP Off-Norm Proc. #2-0130034	Therm. OVRLD OR TIME Dependent O.C. Trip	74-1,74-2 Trip Contacts BKR 2-30304 2B1 6.9KV Bus	GAD-109
RC PP 2A2 VIBRATION HI 1-25	1. Excessive vib. or axial shaft thrust movement detected on 2A2 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RRB-304.	1. None 2.(A) Check display indicators behind RRB 204 (B) Follow RCP Off-Normal Proc. #2-0130034.	Variable Set HR Higher Than Normal	VK-REI-01-4 Vib. Detection Equip. Behind RRB-204	GAD-92
RC PIS SEAL REC HEAT 1-33	1. Leakage of hot Rx coolant from RCS to CW System inside seal water HX as detected by HI HX Diff. Temp. on 2A1, 2A2, 2B1 or 2B2 RCPs. 2.(A) HCV-14-1A1, A2, B1, B2 HX Disc. Valve position (B) CW activity process RAD monitor.	1. Respective leaking HX HCV will Isol. on hi diff. temp. 2. Follow applic. steps in subsequent actions of RCP Off-Norm Proc #2-0130034.	25°F Difference in inlet/outlet temps.	(TE15-14-32A1,B1,A2,B2) 2X-1, 2X-2/93,2X-1, 2X-2/94 (HX Ts) On each RCP seal tube Heat Exchanger	GAD-93 GAD-94
RC QUAD A SHUTDN RANGE LO 1-41	(LATER)	(LATER)	(LATER)	YIOC, AIMA, YMIA, YOTA - - - - - - - - - - -	GAD-1170

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR EXPLAIN TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
RC PP 2A1 SEAL I-2	1.(A) Hi press; pump gasket leak detect, (B) Hi-temp; lower cavity, (C) Hi or Lo-press; upper seal cavity, (D) Hi or Lo-press; bleed-off cavity, (E) Hi or Lo-flow; controlled bleed-off. 2. Observe pump indicated parameters.	1. None 2.(A) Identify already SOMA indicator. (B) If no SOMA ind. abnormal; alarm from PP gasket leak. (C) Follow EOP Off-Norm. Proc. #2-0130034.	A) 500 PSIG B) 170° F C) 945/545 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1150, TIA-1151, PIA-1152-1153, PS-1150 FIA, TIA, PIA on RRGB-203 PS is on RCP	GAD-103
RC PP 2A1 OIL PRESS/FLO/LVL HI/LO R I-10	1.(A) Loss HR press. to lower bearings. (B) Low flow to lower guide bearings. (C) Low flow from cooler. (D) High or low level in upper or lower reservoirs. 2.(A) Oil level indicators high or low. (B) Bearing temperatures. (C) Refleash panel RA-RAB-47 behind RRGB.	1. None 2.(A) Check refl. pnl. behind RRGB to determine alarm cause. (B) Follow EOP Off-Norm. Proc. #2-0130034.	A) 300 PSIG B) 7 GPM C) 7 GPM D) 12" from Normal	RA-RAB-47 Reflash Panel Behind RRGB-304	GAD-103
RC PP 2A2 SEAL I-18	1.(A) Hi-press; pump gasket leak detect, (B) Hi-temp; lower cavity, (C) Hi or Lo-press; upper seal cavity, (D) Hi or Lo-press; bleed-off cavity, (E) Hi or Lo-flow; controlled bleed-off. 2. Observe pump indicated parameters.	1. None 2.(A) Identify already SOMA indicator (B) If no SOMA indicators abnormal; alarm is from pump gasket leak. (C) Follow EOP Off-Norm. Proc. #2-0130034	A) 500 PSIG B) 170° F C) 945/545 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1160, TIA-1161, PIA-1162-1163, PS-1168 FIA, TIA, PIA on RRGB-303, PS is on RCP	GAD-111
RC PP 2A2 OIL PRESS/FLO/LVL HI/LO R I-26	1.(A) Low HR press. to lower BRG. (B) Low flow to lower guide bearings. (C) Low flow from cooler. (D) High or low level in upper or lower reservoirs. 2.(A) Oil level indicators high or low. (B) Bearing temperatures. (C) Reflash panel RA-RAB behind RRGB.	1. None 2.(A) Check reflash panel behind RRGB to determine alarm cause. (B) Follow EOP Off-Normal Proc. #2-0130034.	A) 300 PSIG B) 7 GPM C) 7 GPM D) 12" from Normal	RA-RAB-49 Reflash Panel Behind RRGB-204	GAD-111
BLANK I-34	BLANK				
ICC CORE A RX VESSEL LEVEL HI I-42	(LATER)	(LATER)	(LATER)	YOOOM.IA, YPPAIIA, YSHAA	GAD-1870

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL: 1 VERTICAL COLUMN: 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR CHANGE TIMING	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2A1 THRU HI F-1	1. High temp. on 1A RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing. 2.(A) Upper/lower thrust BRG Temp. SIGNAL indicators (B) Thrust BRG Monitor behind RRB-203	1. None 2.(A) Check CCW flow to pump. (B) Follow RCP Off-Norm. Proc. #2-0120036.	200° HI Temp	TIA-1158, -1159 Temp Indicating Alarm SIGNAL RRB-203	GAD-102
RC PP 2A1 CLG WTR FLO LO F-11	1. Lo CCW flow from 2A1 RCP, on Individual PP CCW return line. 2.(A) Individual (203) and combined (206) CCW flow. (B) Seal HX, and RCP "N" RHR-valve position. (C) Pump oil and seal temperatures. (D) SEAL signal present.	1. Individual PP return line lo -Hi Auto Action 2.(A) LOG; Adjust RCP CCW return HDR VLV outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. #2-0120036.	190 GPM Low Flow	FIA-1158 Flow Indicating Alarm Sys. RRB-203	GAD-101
RC PP 2A2 THRU HI F-19	1. High temp. on 2A2 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing. 2.(A) Upper/lower thrust BRG Temp. SIGNAL indicators (B) Thrust BRG monitor behind RRB-203	1. None 2.(A) Check CCW flow to pump. (B) Follow RCP Off-Norm. Proc. #2-0120036.	200° F HI Temp	TIA-1168, - 1169 Temp Indicating Alarm SIGNAL RRB-203	GAD-110
RC PP 2A2 CLG WTR FLO LO F-27	1. Lo CCW flow from 2A2 RCP, on Individual PP CCW return line. 2.(A) Individual (203) and combined (206) CCW flow (B) Seal HX, and RCP "N" HDR-valve position. (C) Pump oil and seal temperatures. (D) SEAL signal present.	1. Individual PP return line low-lo Auto Action 2.(A) LOG; Adjust RCP CCW return HDR VLV outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. #2-0120036	190 GPM Low Flow	FIA-1168 Flow Indicating RRB-203	GAD-109
BLANK F-35	BLANK			- - - - - - - - - -	
RCP ORB. A RX CORE EXIT THRU HI F-43	(LATER)	(LATER)	(LATER)	YQR0011A, YPPA11A, YS11VA - - - - - - - - - -	GAD-1370

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PERSONNEL TASKS	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2A1 REVERSE ROTATION I-4	1. 2A1 RCP rotating in reverse as detected by hi rev. off flow thru thrust runner off PP. PP seal damage probably occuring. 2.(A) Pump Amps, breaker position indication (B) low oil pressure alarm.	1. None 2.(A) On A Bandist Pump; determine the validity of alarm. (B) On Stopped/Started Pump – Valid Alarm; SEND ALL RCPs, follow Nat. Circ. Cooldown Emergency Proc. #2-0120060	12.7 GPM Reverse Flow	PS-1156, – 1157 2A1 RCP	O40-103
RC PP 2A1 LIFT PP OVERLOAD I-12	1. 2A1-A, and/or 2A1-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OR, has been racked out. 2. Respective oil lift pump Bkr Indicate Lights out.	1. Pump trips. 2.(A) Ensure 2A1 RCP oil lift PP running if required. (B) Check breakers locally, (C) Notify Elect. Dept. if necessary.	Therm. OVRLD OR or 140 Amp O.C. Trip	74A, 74B, 88X/P-2A1 62Y (A) 2-41229/2A5 MCC (B) 2-43032/2B5 MCC	O40-103
RC PP 2A2 REVERSE ROTATION I-20	1. 2A2 RCP rotating in reverse as detected by hi reverse oil flow thru thrust runner oil PP. PP seal damage probably occuring. 2.(A) Pump Amps, breaker position indication. (B) low oil pressure alarm.	1. None 2.(A) On A Bandist Pump; determine the validity of alarm. (B) On Stopped/Started Pump-Valid Alarm; SEND ALL RCPs, follow Nat. Circ. Cooldown Emergency PROC. 2-0120060.	12.7 GPM Reverse Oil Flow	PS-1166, – 1167 2A2 RCP	O40-111
RC PP 2A2 LIFT PP OVERLOAD I-28	1. 2A2-A, AND/OR 2A2-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OR, has been racked out. 2. Respective oil lift pump Bkr Indicate Lights out	1. Pump trips 2.(A) Ensure 2A2 RCP oil lift pump running if required. (B) Check breakers locally, (C) Notify Elect. Dept. if necessary	Therm. OVRLD OR 140 Amp O.C. Trip	74A, 74B 88X/P-2A2, 62Y (A) 2-42134/2B6 MCC (B) 2-41327/2A6 MCC	O40-111
BLANK I-36	BLANK				
RCC OHB. A TROUBLE I-44	(Later)	(Later)	(Later)	YVHOB.IA, YVFAIB, YSHAB	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 5

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2B1 OVRLD/TRIP I-5	1.(A) RCP has tripped on overcurrent, (B) OR RCP has lost control power, (C) OR, RCP has been racked out. 2.(A) Pump Amps Zero (B) Breaker Indicator Lights - green on out.	1.(A) Pump trips - stops. (B) Rx will trip on -low RCS Flow. 2.(A) If critical; follow Rx trip Off-Norm. Procedure 2-0030130. (B) If critical and ALL pumps lost; follow Rat.-Circ. Coolant Emerg. Proc 2-0130050 (C) Refer to RCP Off-Norm. Proc. 2-0130134.	Therm. OVRLD OR TIME Dependent O.C. Trip	74-1, 74-2 Trip Contacts BRK 2-30305 2B1 6.9 KV Bus	CWD-105
RC PP 2B1 VIBRATION HI I-13	1. Excessive vibration or axial shaft thrust movement detected on 2B1 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RRGB-206.	1. None 2.(A) Check display indicators behind RRGB-206 (B) Follow RCP Off-Normal Proc. 2-0130134	Variable Setpoint Set RR Higher Than Normal	YB-RE1-01-3 Vibration Detection Equipment Behind RRGB-306	CWD-92
RC PP 2B2 OVRLD/TRIP I-21	1.(A) RCP has tripped on overcurrent, (B) OR, RCP has lost control power, (C) OR, RCP has been racked out. 2.(A) Pump Amps Zero (B) Breaker Indicator Lights - green on out.	1.(A) Pump trips - Stops. (B) Rx will trip on -low RCS flow. 2.(A) If critical; follow Rx trip O/N Proc. 2-0030130. (B) If critical and ALL PP lost; follow Rat. Circ. Coolant Emerg. Proc. 2-0130050	Therm. OVRLD OR TIME Dependent O.C. Trip	74-1, 74-2 Trip Contacts BRK 2-30105 2A1 6.9KV Bus	CWD-113
RC PP 2B2 VIBRATION HI I-29	1. Excessive vibration or axial shaft thrust movement detected on 2B2 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RRGB-306.	1. None 2.(A) Check display indicators behind RRGB-306 (B) Follow RCP O/N Proc. 2-0130034	Variable Setpoint Set RR Higher Than Normal	VB-RE1-01-2 Vibration Detection Equipment Behind RRGB-206	CWD-92
RCP VIB MONITORING SYSTEM/POWER FAILURE I-37	1. Power supply lost to upper or lower vibration equipment rack. 2. Loss of indications on RCP vibration and thrust monitors in affected area.	1. Loss of vibration monitoring capability. 2.(A) Check fuse "14" on "RR" PMC supply & fuse "5" on "RV" power supply, inside RRGB (B) Notify I & C Department	"0" AC Voltage On Either Rack	VB-PS/SI-01-1,2 Vibration Monitoring Equip. Power Supplies Behind RRGB-306	CWD-92
ICC OBB. B THERMAL MARGIN TO I-45	(LATER)	(LATER)	(LATER)	- - - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TRouble	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2B1 SEAL 1-6	1.(A) HI-press; pump gasket leak detect, (B) HI-temp; loser cavity, (C) HI or LOW – press; upper seal cavity, (D) HI or LOW – press; bleed-off cavity, (E) HI or LOW – flow; controlled bleed-off. 2. Observe pump indicated parameters	1. None 2.(A) Identify alarming SBMA indicator. (B) If no SBMA indicators abnormal; alarm is from pump gasket leak. (C) Follow RCP Off-Norm. Proc. #2-0130034.	A) 500 PSIG B) 170° F C) 965/55 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1170, TIA-1171, PIA-1172-1173, PS-1170 FIA, PIA, and TIA on RRGB-203 and PS is on RCP	OHD-107
RC PP 2B1 OIL PRESS/FLO/LVL HI/LO R 1-14	1.(A) Low HIR pressure to lower bearings. (B) Low flow to lower guide bearings. (C) Low flow from cooler (D) High or low leve in upper or lower reservoirs 2.(A) Oil level indicators high or low. (B) Bearing temperatures. (C) RefLash panel RA-RAB-48 Behind RRGB	1. None 2.(A) Check RCP. panel behind RRGB to determine alarm cause. (B) Follow RCP Off-Norm. Proc. #2-0130034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ± 2" from Normal	RA-RAB-48 Reflash Panel Behind RRGB-204	OHD-107
RC PP 2B2 SEAL 1-22	1.(A) HI-press; pump gasket leak detect, (B) HI-temp; loser cavity, (C) HI or low-press; upper seal cavity, (D) HI or low-press; bleed-off cavity, (E) HI or low-flow; controlled bleed-off. 2. Observe pump indicated parameters.	1. None 2.(A) Identify alarming SBMA indicator (B) If no SBMA indicators abnormal; alarm is from pump gasket leak. (C) Follow RCP Off-Norm. Proc. 2-0130034.	A) 500 PSIG B) 170° F C) 965/545 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1180, TIA-1181, PIA-1182-1183, PS-1180 FIA, PIA, and TIA on RRGB-303, and PS is on RCP	OHD-115
RC PP 2B2 OIL PRESS/FLO/LVL HI/LO R 1-30	1.(A) Low HIR pressure to lower bearings. (B) Low flow to lower guide bearings. (C) Low flow from cooler. (D) High or low level in upper or lower reservoirs 2.(A) Oil level indicators high or low. (B) Bearing temperatures. (C) Reflash panel RA-RAB- RRGB	1. None 2.(A) Check reflash panel behind RRGB to determine alarm cause. (B) Follow RCP Off-Norm. Proc. #2-0130034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ± 2" from Normal	RA-RAB-50 Reflash Panel Behind PRGB-204	OHD-115
BLANK 1-31	BLANK			- - - - - - - - - - -	
RC OHR. B RX VESSEL LEVEL LO 1-32	(LATER)	(LATER)	(LATER)	- - - - - - - - - - -	

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 7

2

ANNUNCIATOR TITLE	1. INDICATED CONDITION 2. ADDITIONAL BOOTH INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. OBSERVATION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2B1 THRUST BRG HI 1-7	1. High temperature on 2B1 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing 2.(A) Upper/lower thrust bearing temperature SBAM indicators. (B) Thrust bearing monitor behind RRR-204.	1. None 2.(A) Check CCW flow to pump (B) Follow RCP OFF-Norm. Proc. 2-0120034.	200° F HI Temp	TIA-1178, 1179 Temp Indicating Alarm SBAS RRR-203	GAD-106
RC PP 2B1 CLG WTR FLO LO 1-15	1. Low CCW flow from 2B1 RCP, on Individual PP CCW flow. 2.(A) Individual (203) and combined (206) CCW flow. (B) Seal BX, and RCP "N" BX-valve positions. (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual pump return line low - No Auto Action. 2.(A) Low; Adjust RCP CCW return header valve outside Bio-Shield. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	190 GPM Low Flow	FIA-1178 Flow Indicating Alarm System RRR-201	GAD-105
RC PP 2B2 THRUST BRG HI 1-23	1. High temperature on 2BV2 RCP (A) Upper thrust bearing, (B) OR, lower thrust bearing. 2.(A) Upper/lower thrust BRG Temps. SBAM Indicators (B) Thrust BRG monitor behind RRR-204	1. None 2.(A) Check CCW flow to pump. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	200° F HI Temp	TIA-1188, - 1189 Temp Indicating Alarm SBAS RRR-203	GAD-114
RC PP 2B2 CLG WTR FLO LO 1-31	1. Low CCW flow from 2B2 RCP, on Individual pump CCW return line. 2.(A) Individual (303) and combined (306) CCW flow. (B) Seal BX, and RCP "N" BX-valve positions. (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual PP return line low-No Auto Action 2.(A) Low; Adjust RCP CCW return header valve outside Bio-Shield. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	190 GPM Low Flow	FIA-1188 Flow Indicating Alarm SBAS RRR-203	GAD-113
BLANK 1-39	BLANK				
RC COLD LEG RX CORE EXIT TEMP HI 1-47	(LATER)	(LATER)	(LATER)		

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 4 VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2B1 REVERSE ROTATION J-8	1. 2B1 RCP rotating in reverse as detected by reverse oil flow thru the thrust runner oil pump. Pump seal damage probably occurring. 2.(A) Pump Amps, breaker position indication. (B) Low oil pressure alarm.	1. None 2.(A) On A Running Pump; determine validity of alarm. (B) On Stopped/Started Pump – Valid Alarm; STOP ALL RCPs, follow Nat.-Circ. Cooldown Emerg. Proc. 2-0120040.	12.7 GPM Reverse Oil Flow	FS-1176, – 1177 Thrust Runner Oil Pump 2B1 RCP	OAD-107
RC PP 2B1 LIFT PP OVERLOAD J-16	1. 2B1-A or 2B1-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OR, has been racked out. 2. Respective oil lift pump for Indicator Light – out	1. Pump trips 2.(A) Ensure 2B1 RCP oil lift PP running if required. (B) Check breakers (C) Notify Elect. Dept. if necessary	Therm. OVLD OR 140 Amp O.C. Trip	74A, 74B 3BX/P-2B1,62Y MOC Contacts (A) 2-43029/2B5 MCC (B) 2-41230/2A5 MCC	OAD-107
RC PP 2B2 REVERSE ROTATION J-24	1. 2B2 RCP rotating in reverse, as detected by high reverse oil flow thru the thrust runner oil pump. Pump seal damage probably occuring. 2.(A) Pump Amps, breaker position indication. (B) Low oil pressure alarm	1. None 2.(A) On A Running Pump; determine the validity of alarm. (B) On Stopped/Started Pump – Valid Alarm; STOP ALL RCPs, follow Nat.-Circ. Cooldown Emergency Procedure #2-0120040.	12.7 GPM Reverse Oil Flow	FS-1186,-1187 2B2 RCP	OAD-115
RC PP 2B2 LIFT PP OVERLOAD J-32	1. 2B2-A and/or 2B2-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OR, has been racked out. 2. Respective oil lift pump for Indicator Light – out	1. Pump trips 2.(A) Ensure 2B2 RCP oil lift pump running if required. (B) Check breakers locally, (C) Notify Elect. Dept. if necessary	Therm. OVLD OR 140 Amp O.C. Trip	74A, 74B, 3BX/P-2B2,62Y (A) 2-41328/2A6 MCC (B) 2-42133/2B6 MCC	OAD-115
BLANK J-40	BLANK				
RCP OVR. B TROUBLE J-48	(LATER)	(LATER)	(LATER)		

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX TRIP BKR RCB-2 OPEN K-1	1. Reactor trip circuit breaker #2 has; (A) Tripped open by RPS trip signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power (D) OR, has been racked out. 2. Breaker position lights on RPS trip SWR Bus Mode – green	1. (A) Breaker RCB-2 opens. (B) If power is lost to CEA buss; Rx trips 2. (A) If Rx Trips; follow Rx Trip Off-Norm. Procedure 2 0010130 (B) If one breaker only; check breaker locally	Mech. Contact From Actual Breaker Position	52a Breaker Contact Bkr 2-9330Z CEA Trip Buss	(3d) 413
RX TRIP BKR RCB-1 OPEN K-9	1. Reactor trip circuit breaker # _____ has; (A) Tripped open by RPS trip signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power, (D) OR, has been racked out. 2. Breaker position lights on RPS trip SWR Bus Mode – green	1. (A) Breaker RCB-1 opens. (B) If power is lost to CEA buss, Rx trips. 2. (A) If Rx Trips; follow Rx Trip Off-Norm. Procedure 2 0010130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech. Contact From Actual Breaker Position	52a Breaker Contact Bkr 2-9330I CEA Trip Buss	(3d) 411
REACTOR TAVG/TREF TEMP III K-17	1. RCS average temperature has risen above secondary reference temperature for present turbine power level. 2. (A) 'A#' Annunciator – alarming (K-15). (B) TAVG/TREF Recorders/Displays (C) CEDMCS Auto Insertion of CEAS (D) RCS temperature indications	1. (A) Automatic CEA insertion starts when Temp. difference exceeds 2° F. (B) Automatic CEA insertion, FAST SPEED when Temp. difference exceeds 4° F. 2. Reduce RCS temperature by adjusting turbine load, boration, or CEA insertion to match reactor and turbine power.	6.6°F RCS TAVG Greater Than TREF	RRS, RS-1100-10 Temp. Error Alarm Selected Reactor RRC RCB-204 Rear	(3d) 404
REACTOR TAVG/TREF TEMP LO K-25	1. RCS average temperature has fallen below secondary reference temperature for present turbine power 2. (A) TAVG/TREF Recorders/Displays (B) CEDMCS Auto w/Manual Lights Illuminated. (C) RCS temperature indications	1. None (Auto withdrawal feature disabled) 2. Match RCS TAVG with TREF by adjusting turbine load, dilution, or CEA withdrawal.	6.6° F RCS TAVG less Than TREF	RRS, RS-1100-10 Temp. Error Alarm Selected Reactor RRC RCB-204 Rear	(3d) 404
BLANK K-33	BLANK				
BLANK K-41	BLANK				

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT NUMBER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX TRIP BKR BCB-6 OPEN K-7	1. Reactor Trip Circuit Breaker #6 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC Power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SWR Bkrs Blank = green.	1. (A) Breaker BCB-6 open. (B) If power is lost to CEA buss, Rx trips. 2. (A) If Rx Trips; follow Rx Trip Off-Normal Procedure 2-0030130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech Contact From Actual Breaker Position	52a Mechanical Bkr Contact - - - - - - - - - - Bkr 2-93306 CEA Trip Buss	GE 414
RX TRIP BKR BCB-5 OPEN K-10	1. Reactor Trip Circuit Breaker #5 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SWR Bkrs Blank = green.	1. (A) Breaker BCB-5 open. (B) If power is lost to CEA buss, Rx trips. 2. (A) If Rx trips; follow Rx Trip Off-Normal Procedure 2-0030130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech Contact From Actual Breaker Position	52a Mechanical Bkr Contact - - - - - - - - - - Bkr 2-93305 CEA Trip Buss	GE 412
AUTO WITHDRAWAL INHIBIT K-11	1. Multiple inputs indicative of Hi-Reactor Power will give "AW"; (A) Hi-Hold RCS Temperature (B) Steam bypass manual signal (C) TAVE/TREF Deviation (D) CEA drop from (AUG) 2. Plant parameters indicating above conditions	1. Prevents automatic withdrawal of CEAS by CEDMCS. (NOTE: Auto Withdrawal Feature Defeated) Function as alarm function only. 2. Determine if abnormal plant condition exist and take action to correct	A) 550° F B) Contact From SBCS C) 6.6° F D) Red Button Reset Switch	CEDMCS AW ALARM OUTPUT - - - - - - - - - - CEDMCS	GE 1097
CEA WITHDRAWAL INHIBIT K-12	1. CEA withdrawal in any mode is/is prevented by presence of 2 of the same RPS protrips below; (A) Local power density - High (B) Rx power-high (C) Start-up rate - high (D) Thermal margin/low pressure - low 2. Protrip RPS Indications and respective bypass features	1. Prohibited from CEA withdrawal in any mode 2. (A) Take action to reduce respective protrip condition.(CEA INSERTION IS available) (B) If CEA withdrawal could aid an LPD condition, bypass capability is provided	2/4 On Any Of Abstd Pr trips (ex. SBS no setpoint)	CEDMCS CWI ALARM OUTPUT - - - - - - - - - - Control Element Drive Master Control System	GE 1097
CEA REG GROUP WITHDRAWAL INHIBIT K-13	1. CEDMCS is preventing any Reg. CEAs to be withdrawn in a GROUP Mode because shutdown CEAs are not all full out. 2. (A) CEA positions displayed on AUG screen. (B) CEA positions from IRPIS.	1. Inability to withdraw Reg CEAs in a Group Mode. 2. Withdraw all shutdown CEAs out, if Reg Group withdrawal is desired.	Any Shutdown CEA not at WD.	CEDMCS "WD" Interlock - - - - - - - - - - KR33-314	GE 1097
CEA S/D GROUP INSERTION INHIBIT K-14	1. All Reg CEAs are inserted and a CEDMCS permissive now exist to insert the shutdown CEAs in a Group Mode. 2. (A) CEA positions displayed on AUG screen. (B) CEA positions from IRPIS.	1. Inability to drive shutdown CEAs into the core in a Group Mode. 2. Insert all CEAs to less than 9" if shutdown CEA insertion is desired.	Any regulating CEA not at or below WD.	CEDMCS "ISI" Interlock - - - - - - - - - - KR33-314	GE 1097

ANNUNCIATOR PANEL F VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX TRIP BRS TIE BKR TCB-9 CLOSD F-3	1. CEA trip bars the breaker No. 9 is open 2. CEA Rx trip SWR Mimic on RPS.	1. None 2. Maintain the Bkr-9 closed during manual Ops to assure CEA MG set synchronization capability	Mech. Contact From Actual Breaker Position	52a Breaker Contact - - - - - - - - - - - - Bkr 2-9300 CEA Trip Bus	GE 419
CEA MOTOR INHIBIT F-11	1. All CEA motion in all modes has been stopped due to abnormal conditions; (A) CHBP - Interlock on Reg & (PL) CEAs. (B) CHSH - Interlock on shutdowns (C) Group out of sequence (D) Group Deviation (E) PDIL Violation 2. (A) CEA position displayed on MIG screen. (B) Individual motion inhibit annunciators	1. All CEA motion has been inhibited in all Modes, by AUG generated CEA Motion Inhibit 2. (A) Determine cause for the CMI. (B) Follow PVIOLA OFF-Normal Proc 2-0010030	A) < 122" SHCEAs B) > 10" REG CEAs C) < 83" Sp D) > 4" Dev E) ≤ PDIL	CEDMCS "CMI" Interlock - - - - - - - - - - - - From Analog Real Switch Pos.	GE 1067
CROD OUT OF SEQUENCE (DRPS) F-19				DATA PROCESS, C.O.S - - - - - - - - - - - -	GE 1550
CROD OUT OF SEQUENCE (AUG) F-27				ANALOG DISPLAY - - - - - - - - - - - -	GE 1097
BOARD CEA CMIDS F-35				CEDMCS - - - - - - - - - - - -	GE 1097
AUG OVERALL FAILURE F-43				AUG - - - - - - - - - - - -	GE 1097

ANNUNCIATOR PANEL K VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PROVIDE TIMING	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REMARKS
RX TRIP BKR BCB-3 OPEN K-4	1. Reactor trip circuit breaker #3 has; (A) Tripped open by manual pushbutton on RTGB, (B) Tripped open by manual pushbutton on ETGB (C) Tripped open from loss of control DC power (D) OR, has been racked out 2. Breaker position lights on RPS Trip SWR Bus Blade – green.	1. (A) Breaker BCB-3 opens. (B) If power is lost to CEA buss, Rx trips 2. (A) If Rx Trips; follow Rx Trip Off-Normal Procedure 2-0010130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech Contact From Actual Breaker Position	52a Breaker Contact - - - - - - - - Bkr 2-9103A CEA Trip Buss	GAI 415
RX TRIP BKR BCB-4 OPEN K-12	1. Reactor trip circuit breaker #4 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power, (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SWR Bus Blade – green.	1. (A) Breaker BCB-4 opens (B) If power is lost to CEA buss, Rx trips 2. (A) If Rx Trips; follow Rx Trip Off-Normal Procedure 2-0010130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech Contact From Actual Breaker Position	52a Breaker Contact - - - - - - - - Bkr 2-9103A CEA Trip Buss	GAI 417
CEA DEVIATION (DEV) K-20	1. Indicates one or more CEAs is about to exceed acceptable insertion limits for existing T power level as determined by the DRCS. 2. (A) CEA pulse counter position indicators (B) DRCS; CEA Position Dev and T power. (C) CEA position as displayed on AIG screen.	1. None 2. (A) Stop CEA insertion prior to reaching PDIL limit, if possible. (B) If dropped CEA, follow MALFA-01 and Procedure 2-0010130. (C) Ensure CEA position meets Tech Spec insertion limits.	5% Above PDIL Variable Setpoint	Data Process, PDIL Alarm Output - - - - - - - - DRCS Computer	GAI 1550
CEA DEVIATION (AIG) K-28	1. Indicates one or more CEAs is about to exceed acceptable insertion limits for existing Q-Power as determined by AIG display. 2. (A) CEA position & PDIL alarm on AIG display (B) RPS highest Q-Power lower. (C) Backup display system readout	1. None 2. (A) Stop insertion prior to reaching PDIL limit, if possible. (B) If dropped CEA, follow MALFA-01 Procedure 2-0010130. (C) Ensure CEA positions meet Tech Spec insertion limits	Variable as Function of Q-Power	Analog Display Alarm Output - - - - - - - - AIG Micro-Computer Behind RTGB-204	GAI 1097
CONTROL ROD DRIVE MOT TRIP K-36	(Later)	(Later)	(Later)	CDMS Alarm Output - - - - - - - -	GAI 1097
CEA DEVIATION (CDMS) K-44	1. One or more CEAs has been inserted or withdrawing for greater than 10 seconds. 2. (A) CEA position display on AIG screen. (B) DRCS pulse counter CEA position displays (C) CDMS Control Panel Displays	1. None 2. Ensure CEA motion is under operator control	10 Seconds of continuous CEA motion	CDMS Alarm Output - - - - - - - - AIG Micro-Computer Behind RTGB-204	GAI 1097

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL GROUP 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SECTION	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX TRIP BKR RCB-7 OPEN K-5	1. Reactor trip circuit breaker #7 has; (A) Tripped opened by RPS Trip Signal (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power (D) OR, has been racked out 2. Breaker position lights on RPS Trip Sign Bus Blank = green.	1. (A) Breaker RCB-7 opens. (B) If power is lost to CEA Bus, Rx Trips 2. (A) If Rx Trips; follow Rx Trip Off-Normal Procedure #2-0120130. (B) If an breaker only; check breaker locally, notify Elect. Dept. If necessary	Mech Contact From Actual Breaker Position	52a Breaker Contact Bkr 2-9307 CEA Trip Bus	GAI 416
RX TRIP BKR RCB-8 OPEN K-11	1. Reactor trip circuit breaker #8 has; (A) Tripped opened by RPS Trip Signal, (B) Tripped open by manual pushbutton on RTGB (C) Tripped open from loss of control DC power (D) OR, has been racked out 2. Breaker position lights on RPS Trip Sign Bus Blank = green.	1. (A) Breaker RCB-8 opens. (B) If power is lost to CEA Bus, Rx Trips 2. (A) If Rx Trip; follow Rx Trip Off-Normal Procedure #2-0120130. (B) If an breaker only; check breaker locally, notify Elect. Dept. If necessary	Mech Contact From Actual Breaker Position	52a Breaker Contact Bkr 2-9308 CEA Trip Bus	GAI 418
CEA POWER DEPENDENT INSERTION (DPIS) K-21	1. One or more CEAs is inserted to or below the DPIS Power dependent Insertion Limit for existing T Power level. 2. (A) DPIS; CEA positions, and T Power. (B) CEA positions on ATG screen.	1. No Auto function on PDIL from DPIS. 2. (A) Ensure CEA insertion has ceased. (B) If dropped CEA, follow PLCEA Off-Normal Procedure #2-0120130.	Variable as Function of Delta-T Power	Data Process, PDIL Alarm Output DPIS Computer Behind RTGB-204	GAI 1550
CEA POWER DEPENDENT INSERTION (APIS) K-29	1. One or more CEAs is inserted to or below the APIS Power dependent Insertion Limit existing Q-Power level. 2. (A) CEA positions on ATG screen. (B) RPS highest Q-Power Level. (C) Back-up display system readout	1. CEA Withdrawal Interlock is generated stopping all CEA Motion, except in manual fullwithdrawal 2. (A) Ensure location and start withdrawal of CEAs to above PDIL. (B) If dropped CEA; follow PLCEA Off-Normal Procedure #2-0120130. (C) Ensure CEA insertion within Tech Specs	Variable as Function of RPS Q-Power	Analog Display Alarm Out APIS Micro-Computer Behind RTGB-206	GAI 1097
BLANK K-37	BLANK				
BLANK K-45	BLANK				

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PROVIDE DATA	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CEA AUTO WITHDRAWAL PROHIBIT K-6	1. Automatic CEA motion withdrawal from RRS has been prohibited, due to low power level. 2. Nuclear Power range power on 9 & 10 Power Recorder JR-0009/0010 on ICRB-204	1. No Automatic CEA 2. (A) Ensure proper power level for prohibit (B) Operate CEA in manual mode.	Below 11% Increasing, Up to 15% Increasing (Linear [9/10]power)	RRS, RS-1100-10 Low Power Motion Interlock --- Selected Reactor Regulating System ICRB-204 Rear	GD 403 RRS Tech.Manual 2998-1289
RX RRS SELECTED SRS INOPERATIVE K-14	1. The selected reactor RRS System; (A) Has lost one or more power supplies, (B) OR, RRS in Test, or manual by one auto Oper/Cal switches out of operate. 2. (A) Unexplained CEA motion or TAVE/TREF Abnormal (B) RRS drawer "TEST" and "MANUAL" Indicator Lights	1. None (Later) 2. (A) Swap reactor RRS system with select Switch. (B) Stabilize plant; take manual control of SRS, CVCS, and Pressurizer Level Control. If necessary.	Selected RRS A) Loss of power B) In Test Mode	RRS, RS-1100-10 Inoperative Alarm Output --- Selected Reactor Regulating System ICRB-204 Rear	GD 403 RRS Tech Manual 2998-1289
CEA POSITION +/- 4 INCH DEVIATION (DRPS) K-12	1. A deviation exist of ≥ 4" in CEA within a Group as sensed by pulse counter position, from CEA Coil Power Programmers. 2. (A) DRPS CEA Position Log. (B) Reed switch position on AEG screen or back-up display system.	1. None – (DRPS Dev. – alarm only) 2. (A) Check Reed Switch positions (B) Check DRPS log of CEA positions (C) Correct DRPS pulse counter CEA positions if applicable (D) Follow PSTA Off-Normal Proc. 2-0120030	+/- 4" Highest to Lowest CEA in a Group	Data Process. Dev (Deviation Alarm) --- DRPS Computer Behind ICRB-204	GD 432
CEA POSITION +/- 4 INCH DEVIATION (AEG) K-10	1. A deviation exist of ≥ 4" in CEA within a Group, as sensed by ANALOG Reed Switch Position from the AEG. 2. (A) AEG Reed Switch CEA position. (B) Back-up display system read out	1. ON-CEA motion Inhibit, preventing CEA motion in any mode. 2. (A) Follow PSTA OFF-Normal Proc. 2-0120030 (B) OR may be bypassed to allow MI mode ability, to realign CEAs.	+/- 4" Highest to Lowest CEA in a Group	ANALOG DISPLAY "PPL" Alarm --- CEA Micro-Computer Behind ICRB-204	GD 1097
CEA POSITION +/- 8 INCH DEVIATION (DRPS) K-8	1. A deviation exist of ≥ 8" in CEA within a Group as sensed by pulse counter position, from CEA Coil Power Programmers. 2. (A) DRPS CEA Position Log. (B) Reed switch position on AEG screen or back-up display system read out.	1. None – (DRPS Dev. – alarm only) 2. (A) Check Reed Switch Positions (B) Check DRPS log of CEA positions (C) Correct DRPS pulse counter CEA positions if applicable. (D) Follow PSTA OFF-Normal Proc 2-0120030	+/- 8" Highest to Lowest CEA in a Group	DATA PROCESS (Deviation Alarm) --- DRPS Computer Behind ICRB-204	GD 432
INST CAB POWER FAIL / GROUND DET K-16	1. (A) Loss of 120 VAC power to, (B) OR, DC ground detected in; PA, PB, PC, PD, SA, or SB Isolation cabinets in control room. 2. DC Ground Alarm	1. None 2. Notify I & C and Elect. Departments	(Later)	Power Failure Ground Detector Relays --- In each Safety Isolation Cabinet in	GD 1096

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORTHOGONAL INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
0A DRIVE MG SET 2A 0A30CB002H TRIP K-7	1. Indicates 2A 0A MG set has tripped on overload. 2. (A) MG set output breaker indication – Open on 0A trip bus Mode. (B) Local Alarm Annunciator (K-16)	1. (A) If other MG set ON; None (B) If other MG set OFF; 0A bus will de-energize, causing a reactor trip. 2. (A) If R. Trips; follow Rx Trip Off-Normal Procedure 2-0030130. (B) Check MG set locally	(later)	C,C (later) --- (later)	OD 401
0A DRIVE MG SET 2A LOCAL ALARM K-15	1. Indicates Local Alarm Annunciator at the 2A MG set control cabinet. (Later – Hot) 2. None	1. (Later) 2. Have operator check MG set locally.	(List Later)	CONTROL CAB. (Alarm Output) --- 2A MG SET	OD 409
CDMCS TROUBLE K-23	1. CDMCS Chmer clock "A" has failed, as detected (more information later) 2. None	1. Automatic transfer of system to clock "B" causing no disturbance to system operation 2. Notify I & C Department	Fail-Over Transfer to Clock "B"	CDMCS "Trouble Alarm" --- CDMCS Cable Spread Room	OD 1097
CDMCS ABNORM. K-31	1. Indicates removal of any risk-assessed circuit card in CDMCS System. 2. Abnormal function of CDMCS System.	1. None 2. Notify I & C Department	Circuit Card Removal From Contacts in	CDMCS "Card Removal" --- CDMCS In Control Room and Cable Spread Room	OD 1097
BLANK K-39	BLANK			---	
ANNUNCIATOR POWER SUPPLY FAILURE K-47	(LATER)	(LATER)		---	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FURTHER TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CEA DRIVE MG SET 2B OVERCURRENT TRIP K-8	1. Indicates 2A CEA MG set has tripped on overload 2. (A) MG set output breaker indication - green on CEA trip bus white (B) local alarm annunciator (K-16)	1. (A) If other MG set ON; None (B) If other MG set OFF; CEA bus will de-energize causing a reactor trip 2. (A) If Rx Trips; Follow Rx trip OFF-Normal Procedure 2-0010130. (B) Check MG set locally	(later)	C,r (later) (later)	OH 402
CEA DRIVE MG SET 2B LOCAL ALARM K-16	1. Indicates local alarm annunciation at the 2B MG Set Control Cabinet (Later List) 2. None	1. (Later) 2. Have operator check MG Set locally	(Later List)	CONTROL CAB. (Alarm Output) 2B MG SET Control Cabinet	OH 410
ANALOG DISPLAY SYS TROUBLE K-24	1. ANALOG display system trouble. (Later information add) 2. (A) Loss of Flashing "Live Computer" square. (B) Information later	1. None 2. Notify I & C	(later)	ANALOG DISPLAY (later)	OH 107
ANALOG DISPLAY SYS TEST K-32	1. ANALOG display system is in the test mode. (later information add)	1. None 2. Notify I & C	(later)	ANALOG DISPLAY (later)	OH 107
BLANK K-40	BLANK				
ANNUNCIATOR (2B??) DEFECTIVE K-48	(LATER)	(LATER)			

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
REACTOR MANUAL TRIP 1-1	1. Reactor has been tripped by depressing Rx Trip button on RTGB-204 or 201. 2. (A) Reactor trip circuit breakers open (B) Sequence-of-Events Recorder Printout	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip OFF-Normal Proc. 2-0030130.	Pushbutton Depressed (Takes 2)	PB/MT1-1,-2 PB/MT2-1,-2 Rx Trip Pushbutton --- RTGB-204 and RTGB-204	GAI 411, 413, 415, 417
REACTOR PWR LVL HI OHL TRIP 1-9	1. RPS has tripped the reactor from a 2/4 HI reactor power condition. 2. (A) Reactor Trip Circuit Breakers – open (B) Q-Power meters, prior to trip	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip OFF-Normal Proc. 2-0030130	2/4 Logic 9.6D Last Reset (107% Max)	RPS TB(4) S-2 Trip Bistables --- Reactor Protection System	GAI 406
REACTOR PWR LVL HI OHL PRE-TRIP 1-17	1. Reactor Q-Power is within 2% of Trip Setpoint on at least one of the 3% Trip Bistable. 2. (A) Q-Power meters on RTGB (B) Illuminated HI-Power test pushbuttons (C) Channel Pretrip Indication(s)–Illuminated	1. [illegible] withdrawal prohibit on 2/4 pretrips. 2. (A) Depress the WRT reset button. (B) Reduce reactor power by CEA insertion and/or boration if necessary	1/4 Logic 7.6% > Last Reset	RPS TB(4)S-57 Trip Bistables --- Reactor Protection System	GAI 408
REACTOR STARTUP RATE HI OHL TRIP 1-25	1. RPS has tripped the reactor from a 2/4 HI-rate of power increase 2. (A) Reactor trip circuit breakers – open (B) Start-up rate prior to trip (C) Bistable trip Indicators – Illuminated.	1. (A) Rx trip breakers open (B) Turbine trip 2. Follow Rx Trip OFF-Normal Proc. 2-0030130	2/4 Logic ≥ 2.49 DPM	RPS TB(4) S-4 Trip Bistables --- Reactor Protectoin System	GAI 406
REACTOR STARTUP RATE HI OHL PRE-TRIP 1-33	1. Start-up rate is high, and close to Trip setpoint 2. (A) Start-up rate meter (B) Positive reactivity addition rate. (C) Bistable pretrip Indicator(s) – Illuminated.	1. CRP, withdrawal prohibit on 2/4 pretrips. 2. (A) Ensure CEA withdrawal, or positive reactivity addition have been ahead to within Abdn SUR limit of 1.4 DPM.	1/4 Logic SUR >1.3 DPM	RPS TB(4) S-50 Trip Bistables --- Reactor Protection System	GAI 408
REACTOR STARTUP RATE TRIP BYPASSED 1-41	1. (LATER) HI-Start Up Rate Trip Bistable Trips has been automatically bypassed by reactor power level not in range for trip. 2. Wide/Linear Range displayed power levels.	1. SUR Trip will be disabled 2. Ensure proper operation of bypass (NOTE: Manual Alarm-Information Only	Bypassed <10-4% and >15% Power	RPS TB (4) S-44 "Linear 1" & "LIN" Bistables --- RPS Safety HI Beacon	GAI 408

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FURTHER TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCHS 1B5 UNDERVOLTAGE 1-2	1. One or more undervoltage relays on the CCHS Trip Bus have deenergized, probably due to reactor 2. CEA Trip Bus Mimic - Breaker, Bkr ect, and under-voltage relay status indicators.	1. (A) Turbine trip from (2/4) under voltage coils. (B) Steam bypass Control System may Quick-open from (3/4) undervoltage coils. 2. Follow Rx Trip Off-Nomal Proc. 2-0030130	(Later)	UV 1, -2, -3, -4 Under Voltage Relays --- CCHS Control Cabinets in C.S. Room	CAD 419
REACTOR COOLANT LOW FLOW Chl. TRIP 1-10	1. RCS low Flow has caused RPS to trip the reactor. 2. (A) Reactor trip circuit breakers open (B) RCP status and RCS flow indicators (C) Bistable TRIP indicators illuminated	1. (A) Rx Trip Breakers Open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Nomal Procedure 2-0030130 (B) Follow Nat-Circ/Loss Flow Emergency Procedure if all RCPs are lost.	95% of Rated RCS Flow	RPS TB (4) 5-6 Trip Bistables --- Reactor Protection System	CAD 406
REACTOR COOLANT LOW FLOW Chl. PRE-TRIP 1-18	1. RCS flow is less than 97% of rated RCS flow, close to trip setpoint 2. (A) RCP status, and RCS flow indicators (B) System Grid frequency low. (C) Bistable pretrip indicator(s) illuminated	1. None 2. If reactor trips; follow Rx Trip Off-Nomal Procedure 2-0030130	97% of Rated RCS Flow	RPS TB (4)5-61 Trip Bistables --- Reactor Protection System	CAD 420
BLANK 1-26	BLANK			---	
REACTOR DELTAT/ T TRIP Chl. TRY 1-34	1. A deviation exist of greater than (1.0DB) % between Delta-T and nuclear power on one or more channels. 2. RPS nuclear and thermal power is displayed on RPS CRT panel	1. Manually trip. 2. Perform Nuclear/DeltaT	(Later)	RPS TB(4) 5-32 NIC/ T Indicator --- RPS RPS CRT PANEL	CAD 408
RX TRIP BYP MODE Chl. TRY 1-42	1. Any one of 4 ZHIB keyswitches in bypass, and block actuation. 2. Zero power mode bypass keyswitch position on RPS.	1. Bypassing of low RCS flow and thermal margin low pressure trips. 2. None; Normal during testing	Any ZHBP Block Action	RPS TB (4)5-40 Auxiliary Relays --- Reactor Protection System	CAD 418

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION (MUST VERIFY OR PERFORM TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SM GEN WDE LVL LO OBL. TRIP 1-3	1. Low steam level on one or both steam generators has tripped the reactor. 2. (A) Reactor trip circuit breakers-open. (B) S/G water level indication-low-low (C) Bistable Trip Indicators-Illuminated.	1. (A) RC Trip breakers open (B) Turbine trip, AFAS actuation 2. (A) Follow Rx Trip Off-Normal Procedure #2-0130130.	2/4 on Auctioneered Low S/G, @ 38% Level (Dec)	RPS TB(4) 5-8 Trip Bistables - - - - - - - - - - - Reactor Protection System	(1d) 406
SM GEN WDE LVL LO OBL. PRE-TRIP 1-11	1. S/G level in one or both Steam Generators has decreased to near the RPS Trip Setpoint 2. (A) S/G water level indication (202) (206) (B) Evaluator system parameters (C) Bistable pretrip indicator(s) – Illuminated	1. None until RX reaches trip setpoint. 2. (A) Increase feedwater to Steam Generator (B) Follow Loss of S/G Level & Flow Emergency Procedure #2-0710160	1 Channel Low 42% Level (Narrow Rng)	RPS TB(4) 5-63 Trip Bistables - - - - - - - - - - - Reactor Protection System	(1d) 430
SM GEN PRESS LO OBL TRIP 1-19	1. S/G pressure has fallen to RPS trippoint point and has tripped reactor 2. (A) Reactor trip circuit breakers – open (B) S/G pressures low (385) RCS Tave low. (C) Bistable trip indicators-Illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0130130 (B) Follow Main Stream Line Break Emergency Procedure 2-0710160	2/4 Auctioneered low @ 60' PSIA	RPS TB (4) 5-10 Trip Bistables - - - - - - - - - - - Reactor Protection System	(1d) 406
SM GEN PRESS LO OBL. PRE-TRIP 1-27	1. S/G pressure is decreasing and is close to RPS trip setpoint. 2. (A) Steam Generator pressures (385) (B) Condition of steam dump system (C) Channel pre-trip indicator(s)-Illuminated	1. None 2. (A) Check all possible sources of steam leakage, such as ADVs SDCS valves etc. (B) Reduce turbine load to inc. steam pressure	Any Ckml Lo-700 PSIA	RPS TB (4) 5-65 - - - - - - - - - - - Reactor Protectoln System	(1d) 430
SM GEN PRESS LO OBL. TRIP BYPASSED 1-35	1. Steam Generator low pressure trip has been bypassed with keyswitch on RTGB 2. Bypass lights and keyswitch position lost on RPS channels.	1. S/G low pressure trip has been disabled. 2. (A) Recall during testing (B) If not latest; remove keys	S/G low Press Trip keyswitch(s) In bypass	RPS TB (4) 5-88 Auxiliary Relays - - - - - - - - - - - Reactor Protection System	(1d) 408
REACTOR DE RATIO CALIBRATE DEVIATION 1-43	(Later)	(Later)	(Later)	RPS TB (4) 5-79 Auxiliary Relays - - - - - - - - - - - Reactor Protection System	(1d) 430

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION OR INDICATION WHEN VERIFY OR PROBABLE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STM BYP SYS UNAVAILABLE 1-4	1. (A) SYSTEM TEST switch not in OPERATE (B) VALVE SELECTOR switch not in MANUAL (C) Condenser vacuum interlock (D) SBCS EMERGENCY OFF 2. (A) Observation of SBCS valve test panel. (B) Condenser vacuum indication	1. No Steam Bypass available to condenser 2. (A) Use atmospheric pumps if necessary (B) Check/improve condenser vacuum (C) Check/reset SBCS valve panel	C) Vacuum Interlock 12" Hg Abs. (Increasing)	RRS-2 Alarm Contact - - - - - - - - - - - Steam Bypass RIGB-204 Rear	GAI 748 SBCS Tech. Man. 2998-12810
STEAM BYPASS DEVIATION 1-12	1. Indicates excessive energy present in RCS and a O.O. or modulation signal permissive to allow valves to open has been generated. 2. RCS temperatures, Rx and turbine power, and steam bypass valves & system.	1. Steam Bypass HIV actuate & open 2. Take action to balance reactor and turbine power.	O.O. or modulation signal preset	RRS-2 Alarm Contact - - - - - - - - - - - Steam Bypass Control System RIGB-204 Rear	GAI 748 SBCS Tech Man. 2998-12810
PZR PRESS HI OHB. TRIP 1-20	1. High RCS Pressurizer Pressure has caused the RPS to trip the reactor. 2. (A) Pressurizer Pressure High (2310)(2306) (B) Bistable Trip Indicators - Illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030131. (B) Follow Pressure & Level Off-Normal Procedure #2-0120035.	2/4 High Trip 2375 PSIA	RPS TB (4) 5-12 Trip Bistables - - - - - - - - - - - Reactor Protection System	GAI 406
PZR PRESS HI OHB. PRE-TRIP 1-28	1. RCS pressure has risen above normal control range and is close to reactor trip setpoint. 2. (A) All available PZR pressure indications (B) Pressure control system status (C) Bistable Pretrip Indicator(s) - Illuminated	1. Pressure Control System should have no back-up, status prop. lites, and full PZR spray 2. Follow Pressurizer Pressure and Level Off-Normal #2-0120035	2350 PSIA	RPS TB (4) 5-67 Trip Bistables - - - - - - - - - - - Reactor Protection System	GAI 430
RC/LP OHB. TRIP 1-36	1. RPS has tripped the reactor on low pressurizer pressure, to maintain acceptable DNBR 2. (A) Reactor Trip Circuit Breakers Open (B) Pressurizer pressure - low (C) Bistable Trip Indicators - Illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030131. (B) Take actions to increase DNBR and RCS subcooling.	2/4 variable with ASI, Tcold, Psr (Min. of 1900 PSIA)	RPS TB (4) 5-14 Trip Bistables - - - - - - - - - - - Reactor Protection System	GAI 406
RC/LP OHB. PRE-TRIP 1-44	1. Pressurizer Pressure is insufficient to maintain acceptable DNBR margin and is close to causing a reactor trip. 2. (A) DNBR parameters; Rx Power, ASI, Bistable pre-trip Indicator(s) - Illuminated.	1. Operator shall prohibit on 2/4 pretrips. 2. (A) Check all available DNBR displayed parameters, and take action to increase DNBR and subcooling.	Variable 50 PSI> than TRIP Setpoint	RPS TB (5) 5-69 Trip Bistables - - - - - - - - - - - Reactor Protection System	GAI 430

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 5

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
CNMT PRESS HI CHNL TRIP 1-5	1. High containment pressure has caused the RPS to Trip the reactor. 2. (A) Containment pressure safety indicators. (B) RCS pressurizer pressure indications. (C) Bistable Trip Indicators - Illuminated	1. (A) Rx Trip Breakers - open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Nomal Procedure #2-0030130 (B) Follow applicable LOCA/MSLB Emergency Procedure	HI Trip - 4.0 PSIG	RPS TB (4) 5-18 Trip Bistables Reactor Protection System	OAD 406
CNMT PRESS HI CHNL PRE-TRIP 1-13	1. Pressure in containment has risen to $\geq$ 2.5 PSIG, and is close to trip setpoint 2. (A) Containment pressure safety indicators (B) RCS pressurizer pressure indications. (C) Bistable pretrip indicator(s) - Illuminated	1. NONE 2. (A) Establish cause for high pressure (B) If not accident caused, pressure may be reduced with continuous containment purge system	HI 2.5 PSIG	RPS TB (4) 5-71 Trip Bistables Reactor Protection System	OAD 420
LOSS OF LOAD CHNL TRIP 1-21	1. Turbine Trip has tripped the reactor by loss of load trip sensed from low EH header pressure 2. (A) EH header pressure - low (201) (B) Bistable Trip Indicators - Illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip Off-Nomal Procedure #2-0030130	(later)	RPS TB (4) 5-1 Trip Bistables Reactor Protection System	OAD 406
LOSS OF LOAD/ LCL PWR DENS CHNL TRIP BYPASS 1-29	1. Reactor power has fallen to below 15% and loss of load, and LPD Trips have been automatically 2. Q-Power Level Indicators.	1. Loss of load and local power density trips are automatically bypassed. 2. NONE; manual alarm on power reduction	<15% RPS Q-Power	RPS TB (4) 5-42 Auxiliary Relays Reactor Protective System	OAD 408
BLANK 1-37	BLANK				
BLANK 1-45	BLANK				

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. COMMON, ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
RCP CCW FLO LO TRIP 1-6	1. RPS has tripped the reactor due to low CCW return header flow from the RCPs 2. (A) Reactor Trip Circuit Breakers – open (B) RCP return header flow/valve indicators (206) (C) Individual RCP CCW return flow indicators (203) (D) Bistable Trip Indicators – illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130. (B) Also follow RCP-Off-Normal Procedure #2-0120314.	2/4 <636 GPM CCW Return Header Flow ≥ 10 mins.	RPS TR (4) S-22 Trip Bistables - - - - - - - - - - - Reactor Protection System	CRD 406
RCP CCW FLO LO 10 MIN TMG 1-14	1. One or more of the RCP-CCW return headers is below minimum flow trip setpoint. 2. (A) RCP return header flow/valve indications (206) (B) Individual RCP CCW return flow indications (203) (C) CCW system parameters (206)	1. None for 10 minutes 2. (A) Follow RCP-Off Normal Procedure 2-0120314 to restore CCW to RCPs expeditiously. (B) If CCW cannot be restored; reduce unit load as low as possible prior to automatic reactor trip	<636 GPM CCW Return Hdr Flow	RPS CH A, B, C, D C/S-206-1, 2, 3, & 4 Time delay trip/test Sw - - - - - - - - - - - Inside RTGB-206	CRD 206
LOCAL POWER DENSITY CHNL TRIP 1-22	1. Reactor ASI has exceeded the RPS ASI Trip Setpoint, and has generated a reactor trip. 2. (A) Reactor Trip Circuit Breakers – open (B) ASI recorded prior to trip on JR-012 (204) (C) Bistable Trip Indicators – illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130 (B) Notify Reactor Engineering	Variable with ASI exceeding Trip-Setpt	RPS TR (4) S-20 Trip Bistables - - - - - - - - - - - Reactor Protection System	CRD 406
LOCAL POWER DENSITY CHNL PRE-TRIP 1-30	1. Reactor ASI has exceeded the RPS ASI pretrip alarm setpoints, on one or more channels 2. (A) ASI and Trip Setpoint Indicator (206) (B) ASI and Trip Setpoint on RPS. (C) Channel Pre-Trip Indicator(s) illuminated	1. CRP – withdrawal prohibit on 2/4 Pretrips. 2. Follow ASI Control Operating Procedure #2-1200121	Variable with ASI exceeding Pretrip-Spnt	RPS TR (4) S-73 Trip Bistables - - - - - - - - - - - Reactor Protection System	CRD 420
RCP FLO SETPOINT ERROR 1-38	1. Flow dependent setpoint selector switches on RPSCP Panel are selected to other than proper number of pumps running (4 pmps) 2. (A) Select switch positions (B) RCP pump breaker positions	1. Changes T power calculation functions of the core protect calculator(s) 2. Return switch(es) to proper position for number of pumps running	Error Pump Sel. Sw -vs- RCP Bkr Position	RCP TR (4) S-34 Select Switch -VS- pump bkr pos. - - - - - - - - - - - RPS Aux Relays	CRD 408
BLANK 1-46	BLANK			- - - - - - - - - - -	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PRESENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/U RANGE NI-4 OPS HI 1-7	(Later)	(later)	(later)	RY-005/007 - - - - - - - - - - - -	
THERMAL PWR CHANGE > 15% PER HOUR 1-15	1. Rate of Thermal Power change has exceeded 15% per hour, and Specific Activity Surveillance Requirements now apply. 2. DOPS Power History Record	1. NONE 2. Notify Chemistry to take required Tech Spec required Iodine Samples.	>15% delta T Power Change per Hour	DOPS Power Alarm - - - - - - - - - - - - DOPS Computer Behind RTGB-204	OAD 1550
RBS OPA LONG TERM STEADY STATE INSERT LIMIT 1-23	1. OPAs have been inserted into the Tech Spec long term insertion limit area. 2. (A) OPA positions on AMS screen, and DOPS. (B) Q-Power on RPS and RTGB displays	1. NONE 2. Consult Technical Specification for Action Requirements	Insertion Below (later)	DOPS Insertion Alarm - - - - - - - - - - - - DOPS Computer Behind RTGB-204	OAD 1550
BLANK 1-31	BLANK			- - - - - - - - - - - -	
BLANK 1-39	BLANK			- - - - - - - - - - - -	
BLANK 1-47	BLANK			- - - - - - - - - - - -	

ANNUNCIATOR PANEL 1 VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
S/U RANGE NI-2 OPS HI 1-8	(later)	(later)	(later)	RY-006/008 - - - - - - - - - - - -	OAD 57
MOVABLE INCORE GUIDE TUBES PRESS HI/ LEAK 1-16	(later)	(later)	(later)	63X/82 63X/83 DUPS - - - - - - - - - - - -	OAD 1550
RHI OPA SHORT TERM STEADY STATE INSERT LIMIT 1-24	1. OPAs have been inserted into the Tech Spec Short Term Insertion Limit Area 2. (A) OPA position on AMS screen and DUPS. (B) Q-Power on RPS, and ICRR displays	1. NONE 2. Consult Technical Specifications for Action Requirements	Insertion Below (later)	DUPS Short Term Alarm - - - - - - - - - - - - DUPS Computer Behind RTGB-204	OAD 1550
BLANK 1-32	BLANK			- - - - - - - - - - - -	
NI CHANNEL INOPERATIVE 1-40	1. One or more NI Channel Drawers has; (A) OPER/CAL Switches - out of operate. (B) Circuit card(s) removed (C) (later more) 2. Switch positions on each NI Drawer	1. Trip Insertion on functions fed by inoperative drawer. 2. (A) Identify source of alarming channel (B) Notify I & C Department if necessary	Switch Positions Out of Operate	RPS TB (4) 5-10 - - - - - - - - - - - - (later)	OAD 408
BLANK 1-48	BLANK			- - - - - - - - - - - -	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 11 VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PURIFICATION FILTER 2A /P HI A-1	1. High differential pressure across filter 2. Check letdown flow indicator FIA-2202 for proper flow.	1. No Auto Action 2. (A) Verify Alarm (B) Bypass filter and clean/replace element	20 psid	PDE-2202 Pressure Differential Indicator --- CVCS/VCT Area Room	GAD 152
BORON CONC HI/LO A-9	1. Off-Normal Boron Concentration 2. (A) Boronmeter range lights (B) Check boron concentration recorder AR-2203 on RIGB 205 (C) Check last chemistry sample	1. No Auto Action 2. (A) If abnormal: Verify boron concentration by analysis. (B) If due to normal operation at power, reset alarm set points.	Present Boron Concentration ± 50 ppm	AR-2203 Boronmeter Alarm --- Boronmeter Control Panel Behind RIGB-204	GAD 191
BOROMETER/ PROC RAD MON FLTN LO A-17	1. Low flow to boronmeter and process monitor 2. (A) Check letdown flow (B) Check letdown temperature	1. No Auto Action 2. (A) Check for proper valve lineup (B) Check for auto closure of V-2468 on high letdown temperature	0.5 GPM	FIA - 2203 Flow Indicating Alarm --- (later)	GAD 152
BORON LOAD CONTROL V-2525 OVERLOAD A-25	1. V-2525 will not operate electrically due to: (A) Breaker trip on overcurrent or, (B) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-285 or, (D) Control power fuse blown 2. Loss of position indication lights	1. No Auto Action 2. (A) Operate valve locally if necessary (B) Refer to Boron Concentration Control Off-Normal Procedure #2-0250031	Thermal Overload or 42 Amps O.C. Trip	Relay 74 --- Thermal overloads and O.C. trip relay in Bkr 2-42019/MCC-285	GAD 190 PID & MD Sh. 38
BA GRAVITY V-2508 OVERLOAD/ SS ISOL. A-33	1. V-2508 will not operate electrically due to: (A) Breaker trip on overcurrent or, (B) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-285 or, (D) CONTROL POWER FUSE BLOWN OR, (E) Normal/Isolate switch is in ISOLATE position 2. Loss of position indication lights	1. No Auto Action 2. (A) Check breaker for proper operation (B) Operate valve locally if necessary (C) Call Electrical Dept. for assistance	Thermal Overload or 42 Amps O.C. Trip	SS/ISOL, 74 Isolate Switch/Contact --- Thermal overloads and O.C. trip relay in Bkr. 2-42012/MCC-285	GAD 165 PID & MD Sh. 38
BA GRAVITY V-2509 OVERLOAD/ SS ISOL. A-41	1. V-2509 will not operate electrically due to: (A) Breaker trip on overcurrent or, (B) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-285 or, (D) Control power fuse blown or, (E) Normal/Isolate switch is in ISOLATE position 2. Loss of position indication lights	1. No Auto Action 2. (A) Check breaker for proper operation (B) Operate valve locally if necessary (C) Return Normal/Isolate switch to NORMAL as soon as practicable	Thermal Overload or 42 Amps O.C. Trip --- Normal/ Isolate switch is in ISOLATE position	SS/ISOL,74 Isolate Switch/Contact --- Thermal overloads and O.C. trip relay in Bkr 2-42052/MCC-285 and Normal Isolate Switch	GAD 166 PID & MD Sh. 39

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PURIFICATION FILTER 2B /P HI M-2	1. High differential pressure across filter 2. Check letdown flow indicator FIA-2202 on KRUB 205 for proper flow.	1. No Auto Action 2. (A) Verify alarm (B) Bypass filter and clean/replace element	20 psid	PDI-2210 Pressure Differential Indicator --- CVCS/VCT Area Room	OAD 152
LX BYPASS TEMP HI M-10	1. Indicates a high letdown temp. due to excessive letdown flow or low CCW flow to letdown Hx. 2. (A) Check regen Hx outlet temp. & compare with letdown Hx outlet temp. (B) Check letdown flow and pressure (C) Check letdown control valves position	1. Bypass valve diverts at 145° F 2. (A) Refer to Charging & letdown Off-Normal Procedure #2-0210030.	140° F HI	TIC-2224 Temp. Indicating Controller --- KRUB-205	OAD 152
BLANK M-18	BLANK			---	
DEMIN WATER MAKE UP FLO HI/LO M-26	1. Rotameter flow excessively high or low. 2. Chart indicator FRO-2210K on KRUB-205 indicates ± 10 GPM from setpoint.	1. No Auto Action 2. (A) Check PMW tank level & PMW pump operation. (B) Check valve lineup to ensure flow path	± 10 GPM from present set point	FA-2210K, HS-2210 62X-2512 --- Make-up water flow Flow Recorder KRUB-205	OAD 192
AUX SPR VLVS I-SE 02-03/ I-SE 02-04 OPEN/SS ISOL M-34	1. (A) Either auxiliary spray valve has been opened (B) Either auxiliary spray valves Normal/Isolate 2. (A) Decreasing pressurizer pressure (B) Position indicating lights for valves I-SE 02-03 or I-SE 02-04 on KRUB-303	1. No Auto Action 2. (A) Verify position of Aux. Spray Valves (B) Check the Normal/Isolate switches and return applicable switch to "NORMAL" as soon as permissible.	Either valve Open --- Either valve "Normal / Isolate" switch in the "Isolate position	SS-1, 2/ISOL., CS-189 -3, -4 --- Later	OAD 189
BRIDG BYPASS V-2514 OVERLOAD/ SS ISOL M-42	1. Emergency borate valve V-2514 will not operate electrically from the KRUB because: (A) Breaker tripped on electrical fault or, (B) Breaker manual off at MCC-2A5 or, (C) Control circuit fuse is blown or, (D) The breaker Normal/Isolate switch is in ISOLATE 2. Position indication lights will be out if bkr trips	1. No Auto Action 2. (A) Check breaker for proper operation (B) If Normal/Isolate switch is in ISOLATE return to NORMAL as soon as permissible. (C) Operate valve locally if necessary (D) Call Electrical Dept. for assistance	Thermal Overload or 42 Amp O.C. trip --- Normal / Isolate switch is in ISOLATE	S/ISOL., 74 --- Thermal overload & O.C. trip coil are in bkr. 2-41214/MCC-2A5	CAF 167 --- PID & MD Sh 31

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGINAL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
VCT LEVEL HI/LO M-3	1. (A) Possible leak in RCS (B) Charging/letdown flows are unbalanced (C) Auto makeup system is malfunctioning (D) Level control system is malfunctioning 2. Check level indicator on RTGB-205	1. (A) Contacts close to stop automatic makeup to VCT on HI level. (B) Contacts close to initiate automatic make up to VCT on low level 2. Refer to Boron Concentration Control Off-Normal Procedure #2-0250031	HI - 90% LO - 65% Level	LA-2226 Level Alarm --- Local on VCT	OAD 154
VCT LEVEL LO-LO M-11	1. (A) Possible leak in RCS (B) Charging/letdown flows are unbalanced (C) Auto makeup system is malfunctioning (D) Level control system is malfunctioning 2. Check level indicator on RTGB-205.	1. At 5% VCT level, valve V-2504 (RWT to charging pump suction) will open and valve V-2501 (VCT Discharge) will shut. 2. Refer to Boron Concentration Control Off-Normal Procedure #2-0250031.	5% Level	LA-2227 Level Alarm --- Local on VCT	OAD 154
VCT TEMP HI M-19	1. High temperature in VCT 2. Check temperature indicator TIA-2225 on RTGB-205	1. No Auto Action 2. Refer to charging and letdown Off-Normal Procedure #2-0230030.	HI-130° F	TIA-2225 Temp Indicating Alarm --- RTGB-205	OAD 154
BLANK M-27	BLANK	BLANK			
VCT DISCH V-2501 OVERLOAD M-35	1. Indicates that VCT discharge valve V-2501 will not operate electrically due to: (A) Blown control power fuse or, (B) Breaker has tripped on thermal overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off at MCC-2A5 2. Loss of position indicating lights	1. No Auto Action 2. (A) Valve may be operated manually if required (B) Refer to Charging & Letdown Off-Normal Procedure #2-0230030 (C) Call Electrical Dept. for assistance	Thermal Overload or 42 Amp O.C. Trip	74 --- Thermal overloads and O.C. Trip coil in Bkr. 2-41215/MCC-2A5	OAD 161 PD & ND Sh. 31
RETRN. VOR V-2504 OVERLOAD / SS DISC. M-43	1. (A) Normal/Isolate Switch is in ISOLATE position or (B) V-2504 will not operate electrically due to: 1. Loss of Control Power fuse or, 2. Breaker has tripped on thermal overload or, 3. Breaker has tripped on overcurrent or, 4. Breaker has been turned off at MCC-2A5 2. If electrical fault, position indicating lights are off.	1. No Auto Action 2. (A) Valve may be operated manually if (B) Return Normal/Isolate switch to Normal position when possible (C) Call Electrical Dept. for assistance	Thermal Overload or 23 Amp O.C. Trip --- Normal / Isolate Switch in Isolate Position	74 and Normal/Isolate Switch --- Thermal overloads and O.C. Trip coil in Bkr. 2-42036/MCC-2B5	OAD 162 PD & ND Sh. 38

ST. LUCIE UNIT 2
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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
VCT PRESS HI/LO M-4	1. (A) N_2 or H_2 regulators are improperly set (B) A leak exists in the VCT 2. Check pressure indicator PIA-2225 on RRB-205	1. On high pressure: VCT reliefs will open at 75 PSIG 2. HI Press: Open VCT vent V-2513 and reduce press to normal range LO Press: Check VCT vent V-2513 and check H_2 & H_2 gas regulators	HI 65 psig LOW 4 psig	PIA-2225 Pressure Indicating Alarm --- RRB-205	OAD 154
BLANK M-17	BLANK			---	
RCP CONTROLLED BLEED OFF ISOL VALVES CIS OVERRIDE M-20	1. With a CIS signal present: (A) RCP controlled bleedoff isolation valve(s) failed to shut or, (B) Operator re-opened either isolation valve 2. Valve position indication lights	1. No Auto Action 2. Shut affected valve(s) if they failed to shut.	Valve(s) indicate not full shut by limit switch with CIS present	3-1, 3-2 --- Later	OAD 159
REGEN HX OUTLET TEMP HI M-28	1. Low charging flow or high letdown flow 2. Check temperatures on temperature indicators TIC-2221 and TI-2279	1. Letdown stop valve V-2515 will shut if temp. exceeds 475° F. 2. Refer to charging & letdown Off-Normal Procedure #2-0230000	460° F	TIC-2221 ---	OAD 150
CHG LINES 2A2/2B1 VLVS I-SE-02-01/02 SS ISOL M-36	1. Capability of operating either valve from RRB – 205 has been removed. 2. (A) Loop charging valve indicate lights – out (B) Inability to open or shut either valve with the RRB control switches	1. No Auto Action 2. Return Normal/Isolate switch to Normal when permissable	Normal / Isolate Switch is in Isolate	SS-1,2/ISOL ---	OAD 176
CONMT LINE ISOL V-2516 SS-ISOL M-44	1. Containment Isolation valve V-2516 cannot be operated from RRB-205 2. Inability to open or shut V-2516 with its control on RRB-205	1. No Auto Action 2. Return Normal/Isolate switch to Normal when permissable.	Normal / Isolate Switch is in Isolate Position	SS-ISOL ---	OAD 157

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LETDOWN PRESS HI/LO M-5	1. (A) Letdown control valves LCV-2110 P or Q malfunction or (B) Pressure control valves PCV-2101 P or Q malfunction 2. (A) Check letdown flow indicator FIA-2202 on KRGB 205. (B) Check pressurizer level deviation (C) Check valve position indicating lights	1. No Auto Action 2. (A) Return pressure to normal by taking manual control of PCV-2101 P or Q (B) If letdown is lost, refer to charging and letdown Off-Normal Proc. 2-0210030.	HI ->500# LO -<420#	PA-2201 - - - - - - - - - - - -	OAD 151
LETDOWN FLO HI M-13	1. (A) Failure of letdown level controller (B) Failure of pressurizer level controller 2. (A) Check pressurizer level deviation (B) Check letdown flow indicator FIA-2202 on KRGB-205	1. No Auto Action 2. (A) Return letdown flow to normal by taking manual control of letdown control valves (B) If letdown is lost refer to charging and letdown Off-Normal Proc. 2-0210030.	>135 GPM	FIA-2202 - - - - - - - - - - - -	OAD 152
LETDOWN ISOL V-2522 SS-ISOL M-21	1. Control of letdown isolation valve V-2522 has been removed from KRGB-205. 2. Inability to open or shut V-2522 from KRGB-205.	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position when permissable.	Normal / Isolate Switch in Isolate Position	SS-1/ISOL - - - - - - - - - - - -	OAD 194
LETDOWN STRAINER /P HI M-29	1. Indicates dirty strainer or excessive letdown flow 2. Check letdown flow indicator FIA-2202 on KRGB-205.	1. No Auto Action 2. (A) Check strainer diff. press indication locally (B) Adjust LCV-2110 P or Q to reduce flow (C) If letdown is lost, refer to charging and letdown Off-Normal Proc. 2-0210030	<19 psid	PDI-2204 - - - - - - - - - - - -	OAD 152
LETDOWN STOP V-2515 SS ISOL M-37	1. Letdown stop valve V-2515 Normal/Isolate switch is in Isolate position. 2. Inability to open or shut V-2515 from KRGB-205	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position as soon a permissable.	Normal / Isolate Switch is in Isolate Position	SS/ISOL - - - - - - - - - - - -	OAD 157
LETDOWN LCV-2110 P/Q LIMITER BYPASSED M-45	1. (A) Letdown Control valves LCV-2110 P/Q can be fully opened or shut. (B) Position Limiter bypass switch is in bypass position.	1. No Auto Action 2. (A) When initiating letdown flow - Note (B) During normal operation - return position limiter bypass switch to Normal	Position Limiter Bypass Switch in BYPASS	SS-2/PS - - - - - - - - - - - -	OAD 158

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CHG LINE ISOL V-2523 SS ISOL M-6	1. Charging line isolation valve V-2523 cannot be operated from RTGB-205. 2. Inability to open or shut V-2523 from RTGB-205	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position as soon as permissable.	Normal / Isolate Switch is in Isolate Position	SS-2/ISOL	OAD 194
CHG PUMPS FLOW LOW M-14	1. Inadequate flow from operating charging pumps. 2. (A) Check charging flow indicator FIA-2212 on RTGB-205 (B) Charging pump running indicating lights	1. No Auto Action 2. Refer to charging and letdown Off-Normal Procedure 2-0210030	< 40 GPM	FIA-2212	OAD 150
CHG PP 2A SUCT PRESS LO/ OVRLD/TRIP M-22	1. (A) Suction pressure available to pump is to low (B) Charging pump has tripped due to: 1) Overcurrent 2) Breaker racked out at local cubicle 2. (A) Check flow indicator FIA-2212 on RTGB-205 (B) Charging pump running indicating lights	1. Pump breaker opens 2. Refer to charging and letdown Off-Normal Procedure #2-0210030.	< 10 psig Time Dependent O.C. Trip	2X-1, r, t PS-2224 X Time dependent O.C. Trip is in Breaker: 2-40217/L.C. 2A2	OAD 150 PID & MD Sh. 16
CHG PP 2A OIL LP TRIP / OIL LVL LO / STRG BX LVL LO M-30	1. (A) Insufficient oil pressure to pump brngs. (B) Insufficient oil in pump (C) Insufficient level in stuffing box 2. None	1. No Auto Action 2. (A) Start backup pump (B) Secure the affected pump (C) Check oil parameters locally (D) Determine cause and correct	Oil LP: <2.5 psig Oil Lvl LO: Gal in pump STRG BX LVL LO < 10"	63X, 2X, 71X, LIA-2233X LS-2234X	OAD 177
BLANK M-38	BLANK				
CHG PP 2A RECIRC V-2555 OVERLOAD SS ISOL M-46	1. Charging pump recirc to VCT valve V-2555 (A) Will not operate from RTGB-205 (B) Breaker has tripped on overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off on MCC - 2. Valve position indicating lights	1. No Auto Action 2. (A) If electrical-call Electrical Dept. for assistance. (B) Return Normal/Isolate switch to the Normal position as soon as permissable	Thermal Overload or O.C. Trip at 28 Amps Norm/ISOL SW In Isolate	SS/ISOL/177, 74/196 Thermal overload and O.C. trip coils in bkr 2-41261/MCC-2A5	OAD 196, 177 PID & MD Sh. 33

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CLOSED BLOWDOWN HX TEMP HI M-7	1. High temp from closed blowdown Hx 2. Loss of blowdown flow as indicated on FIA-23-12 FIA-23-14 on back of RTGB-203	1. High temp isolation valve 2-TCV-23-8 shuts Determine cause of high temperature and 2. Determine cause of high temperature and correct	140° F	23X-3(2-TIS-23-8)	OMD 1350
CHG PUMP HEADER PRESS LO M-15	1. Charging pump(s) discharge pressure has dropped below 2000 psig. 2. (A) Check discharge pressure on PIA-2212 on RTGB-205. (B) Check pump running lights	1. No Auto Action 2. (A) Start backup pump (B) If charging is not regained, refer to charging and letdown Off-Normal Procedure 2-0210030	<2000 psig	PIA-2212	OMD 150
CHG PP 2B SUCT PRESS LO/ OVRLD/TRIP M-23	1. (A) Suction pressure available to pump is too low (B) Charging pump has tripped due to: 1) Overcurrent 2) Breaker racked out at local center 2. (A) Check flow indicator FIA-2212 on RTGB-205 (B) Charging pump running indicating lights	1. Pump breaker opens 2. Refer to Charging & Letdown Off-Normal Procedure #2-0210030.	< 10 psig --- Time Dependent O.C. Trip	2Y-1, r,t PS-2224 Y --- Time Dependent O.C. Trip is in breaker 2-40508/L.C. 282	OMD 178
CHG PP 2B OIL LP TRIP / OIL LVL LO / STFG BX LVL LO M-31	1. (A) Insufficient oil pressure to pump bngs (B) Insufficient oil in pump (C) Insufficient level in stuffing box 2. None	1. No Auto Action 2. (A) Start backup pump (B) Secure the affected pump (C) Check oil parameters locally (D) Determine cause and correct	OIL LP: <2.5 psig --- OIL LVL. LO: <7 Gal in pump --- STFG BX LVL LO < 10"	63Y, 2Y, 71Y LIA-2231Y --- LS-2234 Y	OMD 178
BLANK M-39	BLANK			---	
CHG PP 2B BRKR V-2554 OVRLOAD SS ISOL M-47	1. Charging pump recir to VCT valve V-2554 (A) Will not operate from RTGB-205 (B) Breaker has tripped on overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off on MCC – (E) Control power fuse has blown 2. Valve position indicating lights	1. No Auto Action 2. (A) If electrical; call Electrical Dept. for assistance. (B) Return Normal/Isolate switch to the Normal position as soon as permissable.	Thermal Overload or O.C. Trip at 28 Amps --- Normal / Isolate Switch is in Isolate	SS/ISOL/178 74/197 --- Thermal overload and O.C. Trip coils in Bkr. 2-42014/MCC-285	OMD 178 197 PID & MD Sh. 40

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RCP CONTRL BLEOFF PRESS HI-HI M-8	1. Possible RCP seal failure 2. (A) Check bleedoff pressure at PIA-2215 on RTGB – 205 (B) Check RCP seal pressures on RTGB-203 (C) Check controlled bleedoff flow indicators on RTGB-203	1. No Auto Action 2. Refer to reactor coolant pump Off-Normal Procedure #2-0130034	> 250 psig	PIA-2215	GAD 150
RCP CONTRL BLEOFF PRESS HI M-16	1. Possible RCP seal failure 2. (A) Check bleedoff pressure at PIA-2215 on RTGB – 205 (B) Check RCP seal pressures on RTGB-203 (C) Check controlled bleedoff flow indicators on RTGB-203	1. No Auto Action 2. Refer to reactor coolant pump Off-Normal Procedure #2-0130034	>120 psig	PIA-2215	GAD 150
CHG PP 2C SUCT PRESS LO / OVLD/TRIP M-24	1. (A) Suction pressure available to pump is to low (B) Charging pump has tripped due to: 1) Overcurrent 2) Breaker racked out at local center 2. (A) Check flow indicator FIA-2212 on RTGB-205 (B) Charging pump running indicating lights	1. Pump breaker opens 1. Refer to Charging & Letdown Off-Normal Procedure 2-0210030	< 10 psig --- Time Dependent O.C. Trip	22-1, r, t PS-2224Z --- Time dependent O.C. Trip is in Breaker 2-4070[illegible] O.C. 2AB	GAD 179 PID & MD Sh. 16
CHG PP 2C OIL LP TRIP / OIL LVL LO / STPG BX LVL LO M-32	1. (A) Insufficient oil pressure to pump brngs (B) Insufficient oil in pump (C) Insufficient level in stuffing box 2. NONE	1. No Auto Action 2. (A) Start bkup pump (B) Secure the affected pump (C) Check oil parameters locally (D) Determine cause and correct	Oil LP: <2.5 psig --- Oil LVL LO: < 7 Gal in pump --- STPG BX LVL LO <10"	632, 22, 712 LIA-2233Z --- LS-2234Z	GAD 179
BLANK M-40	BLANK			---	
CHG PP 2C RECIRC V-2553 OVERLOAD SS TRIP. M-48	1. Charging pump recirc to VCT valve V-2553 (A) Will not operate from RTGB-205 (B) Breaker has tripped on overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off on MCC- 2. Valve position indicating lights	1. No Auto Action 2. (A) If electrical call Electrical Dept. for assistance (B) Return Normal/Isolate switch to the Normal position as soon as permissable	Thermal Overload or O.C. Trip at 28 Amps --- Normal / Isolate Switch is in Isolate	SS/ISOL/179, 74/198 --- Thermal overload and O.C. Trip coils in Bkr. 2-42406/MCC-2AB	GAD 179 198 PID & MD Sh. 44

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
H/U TK 2A LEVEL HI/LO N-1	1. High or low level in 2A Holdup Tank 2. Holdup Tank 2A Level Indicator (LIA-6610)	1. Stops holdup drain pumps on low level 2. Check tank level. If high, secure tank & line up another tank to receive degassed liquid. If low, secure discharge Hmaps.	HI-97% LO- 4%	LIA-6610 LIA RTGB-205	OAD 538 P&ID 2998-G160
H/U TK 2A PRESS HI/LO N-9	1. High or low press. in 2A holdup tank 2. Holdup Tank 2A Pressure Indicator (PS-6610)	1. NONE 2. If Press High, check level. If full secure tank for processing & place another tank in service. If level normal, chk N_2 regulator. If press. low, check reg. for proper setting. Adjust as necessary.	HI-10psig LO-.5psig	PS-6610 Holdup Tank 2A	OAD 540 P&ID 2998-G160
RDT LEVEL HI/LO N-17	1. High or low leve in reator drain tank 2. Reactor drain tank level Indicator	1. Stops RDT pumps on low level. 2. Check RDT level. If high, start RDT pumps & disch. RDT to HUT's. If low, stop or verify stopped RDT pumps.	HI-88% LO-21%	LIA-6601 LIA RTGB-205	OAD 541 P&ID 2998-G160
RDT PRESS HI/LO N-25	1. High or low press. in reactor drain tank. 2. Reactor drain tank press. Indicator	1. NONE 2. Check RDT press. & level. If high & tank full, disch. to HUT's. If high & level normal, chk N_2 regulator. Vent excess press. to containment vent header	HI-10 psig LO-.5 psig	PIA-6601 PIA RTGB-205	OAD 540 P&ID 2998-G160
PRIMARY COOL. SAMPLE VLVS CIS OVERRIDE N-33	1. Primary Coolant Sample valves open with CIS present 2. CIS Actuation Indicating lights, CIS annuciation & sample valve indicating lights.	1. NONE 2. Verify valves are actually open & determine if necessary that they are open.	N/A	3-1, 3-2/578 HS-5200 HS-5203 RTGB-206	OAD 578
RADWST CONCENTRATOR CONTROL PNL N-41	1. Alarm condition on waste concentrator control panel. 2. NONE	1. NONE 2. Check waste concentrator control panel & take action as indicated by alarm condition	N/A	Local Annuciator Waste Concentrator Control Panel	OAD 568 P & ID 2998-G167

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
H/U TK 2B LEVEL HI/LO N-2	1. High or low level in 2B Holdup Tank. 2. Holdup Tank 2B Level Indicator (LIA-6609)	1. Stops holdup drain pumps on low level. 2. Check tank level. If high, secure tank & line up another tank to receive degassed liquid. If low, secure discharge lineup.	HI-97% LO- 4%	LIA-6609 LIA RTGB-205	GMD 538 P&ID 2998-G160
H/U TK 2B PRESS HI/LO N-10	1. High or low press. in 2B Holdup Tank. 2. Holdup Tank 2B Pressure Indicator (PS-6609)	1. NONE 2. If press. high, check level. If full, secure tank for processing & place another tank in service. If level normal, chk N_2 regulator. If press. low, chk regulator for proper setting. Adjust as necessary.	HI-10 psig LO-.5 psig	PS 6609 Holdup Tank 2B	GMD 541 P&ID 2998-G160
N_2 HDR SPLY PRESS HI/LO N-18	1. High or low N_2 supply pressure. 2. NONE	1. NONE 2. Check N_2 HDR, press. regulator, and system lineup. If low, place standby N_2 bottles in service. If high, adjust reg. to proper setting.	HI - 660 psig LO - 600 psig	PS-6662 N_2 supply manifold	GMD 566 P&ID 2998-G163
H_2 HDR SPLY PRESS HI/LO N-26	1. High or low H_2 supply pressure. 2. NONE	1. NONE 2. Check H_2 press. regulator and system lineup. If low, place standby H_2 bottles in service. If high, adjust reg. to proper setting.	HI - 110 psig LO - 90 psig	PS-6666 H_2 supply manifold	GMD 566 P&ID 2998-G163
GAS ANALYZER TROUBLE N-34	1. Alarm condition on gas analyzer 2. NONE	1. NONE 2. Notify Gaseous Sys. Dept. to check gas analyzer and take action as indicated by alarm condition.	N/A	N/A Gas Analyzer	GMD 564 P&ID 2998-G164
BA CONC 2A CONTROL PNL N-42	1. B/A concentrator 2A trouble 2. Local control panel 2A	1. NONE 2. Check B/A concentrator control panel 2A for alarm & take necessary action.	N/A	Local Annunciator '2A' BA CONC. Control Panel	GMD 570 P&ID 2998-G165

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR CORRECT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
H/U TK 2C LEVEL HI/LO N-3	1. High or low level in 2A Holdup Tank 2. Holdup Tank 2C Level Indicator (LIA-6608)	1. Stops holdup drain pumps on low level 2. Check tank level. If high, secure tank & line up another tank to receive degassed liquid. If low, secure discharge lineup.	HI – 97% LO – 4%	LIA-6610 LIA RRB 205	OAD 519 P&ID 2998-G160
H/U TK 2C PRESS HI/LO N-11	1. High or low press. in 2C Holdup Tank 2. Holdup Tank 2C Pressure Indicator (PS-6608)	1. NONE 2. If press. high, check level. If full, secure tank for processing & place another tank in service. If level normal, chk N_2 regulator. If press. low, chk regulator for proper setting. Aljust as necessary	HI – 10 psig LO – .5 psig	PS-6608 Holdup Tk 2C	OAD 541 P&ID 2998-G160
FLASH TANK LEVEL HI/LO N-19	1. High or low level in Flash Tank. 2. Flash Tank level indicator controller	1. Stops Flash Tank pps on low level. Diverts to Holup Tanks on high. 2. If level low, chk pps secured. If level high, chk for diverting & flash tank pps running. If pumps did not auto start, determine cause.	HI – 85% LO – 10%	LA-6604 LA RRB-205	OAD 541 P&ID 2998-G160
FLASH TANK PRESS HI/LO N-27	1. High or low pressure in Flash Tank 2. Flash Tank Pressure Indicator (PIA-6603)	1. NONE 2. If press. high, close N_2 supply valve (V-6308). If pressure low check V-6308 to be open & N_2 system lineup to determine cause of low pressure.	HI – 10 psig LO – .5 psig	PIA-6603 Flash Tank	OAD 540 P&ID 2998-G160
N_2 SUPPLY PRESS HI/LO N-35	1. High or low N_2 supply pressure 2. NONE	1. NONE 2. Check N_2 BANK, press. regulator, and system lineup. If low, place standby N_2 bottles in service. If high, aljust reg. to proper setting.	HI – 240 psig LO – 200 psig	PS-6661 N_2 Supply MANIFOLD	OAD 566 P&ID 2998-G163
BA CONC 2B CONTROL PNL N-43	1. B/A concentrator 2B trouble 2. Local control panel 2B	1. NONE 2. Check B/A concentrator control panel 2B for alarm & take necessary action.	N/A	Local Annunciator '2B' BA CONC Control Panel	OAD 572 P&ID

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
H/U TK 2D LEVEL HI/LO N-4	1. High or low level in 2D Holdup Tank 2. Holdup Tank 2D Level Indicator (LIA-6607)	1. Stops holdup drain pumps on low level. 2. Check tank level. If high, secure tank & line up another tank to receive degassed liquid. If low, secure discharge lineup.	HI - 97% LO - 4%	LIA-6660 --- LIA RTGB-205	GAD 539 --- P&ID 2998-G160
H/U TK 2D PRESS HI/LO N-12	1. High or low press. in 2D Holdup Tank. 2. Holdup Tank 2B Pressure Indicator (PS-6607)	1. NONE 2. If pess. high, check level. If full, secure tank for processing & place another tank in service. If level normal, chk N_2 regulator for proper setting. Adjust as necessary	HI - 10 psig LO - .5 psig	PS-6607 --- Holdup Tank 2B	GAD 541 --- P&ID 2998-G160
FUEL HDLG BLDG HATCH SEAL DEFLATED N-20	1. Low N_2 pressure between "O" ring seals. 2. NONE	1. NONE 2. (A) Check for proper gas pressure setting and adjust as necessary. (B) Comply with Tech Specs on Containment Integrity.	25 psig	74 --- Fuel Handling Bldg Hatch	GAD 186
FUEL POOL PP DISCH HDR PRESS LO N-28	1. Fuel Pool cooling pumps low discharge pressure. 2. NONE	1. NONE 2. Verify alarm by local inspection start second pump or restart first pump if cause of trip is corrected.	25 psig	PS-4403 --- Fuel Pool PPS Discharge Hdr	GAD 182 --- P&ID 2998-G140
WM LOCAL ALARM GROUND DET / POWER FAIL N-36	1. Ground or power failure in the Waste Management Controls or associated relaying. 2. NONE	1. NONE 2. Check local WM annunciator panel and notify I & C Dept.	N/A	Gnd Det, Pwr Fail --- Local WM Annunciator Panel	GAD 587
FUEL POOL PP OVERLOAD N-44	1. Breaker open, loss of control power, or thermal overload on fuel pool cooling pumps or fuel pool purification pump.	1. Pump trips 2. Investigate cause of pump trip and correct.	N/A	74/180, 74/181 74/182 --- Pump Breaker	GAD 180 181 182

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SCRTF LOCAL ALARM N-5	1. Local alarm or power failure at SCRTF. 2. NONE	1. NONE 2. Check local SCRTF panel for alarm condition	N/A	74 SCRTF	GAD 1435 S/G Blowdown Treatment GAD 3509-B-327
UNUSED BLDN UNIT 2 RADIATION HI N-13	1. Deprocessed blowdown has high radiation at SCRTF 2. NONE	1. Discharge valve to canal (2-RCV 23-1) closes and valve to Blowdown Treatment Facility (23-2) opens. 2. Verify valves 23-1 & 23-2 cycle as required Notify Chemistry Dept. for chemical sample.	(later)	74 SCRTF	GAD 1359 S/G Blowdown Treatment GAD 3509-B-327
RX CAVITY SUMP LEVEL HI-HI N-21	1. High level in Reactor Cavity Sump 2. Reactor cavity sump level indicator	1. NONE 2. Notify operator to rack in the Rx Cavity Sump Pumps to reduce level. Determine source of water. If excessive RCS leakage refer to Off-Normal Procedure #2-0120031.	4'8" From Top	LS 06-2 Rx Cavity Sump	GAD 574 P&ID 2998-G088
RX CAVITY SUMP LEVEL HI N-29	1. High level in Reactor Cavity Sump 2. Reactor cavity sump level indicator	1. Reactor Cavity Sump pumps will start if racked in. 2. Check alarm clears as sump is pumped down. If alarm does not clears, check for pump failure or high leak rate into sump.	5'4" From Top	LS 06-2 Rx Cavity Sump	GAD 574 P&ID 2998-G088
BLANK N-37	BLANK				
WASTE MANAGEMENT LOCAL ALARM N-45	1. Alarm condition on Waste Management Control Panel. 2. NONE	1. NONE 2. Check Waste Management Control Panel for for alarm condition and take necessary action.	N/A	RE-XMIT Waste Management Local Panel	GAD 587 P&ID 2998-G092 2998-G160 thru 2998-G171

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
WH BA HT TR SYS 2A/2B LOCAL ALARM R N-6	1. Trouble in 2A or B Waste Hunaysand Boric Acid Heat Tracing Systems. 2. NONE	1. NONE 2. Check local control panel or reflash module RA-RAB-6 on El –.5' of the RAB. Take necessary action.	N/A	RA-RAB-6 WH/BA Heat Tracing Local Control Pnl	GAD 584 P&ID 2998-G092, 152, 161, 165, 166, 167
PROC EFFLN TO DISCH CANAL RADIATION HI N-14	1. Processed blowdown to discharge canal has high radiation.	1. Blowdown discharge valve to canal (2-RCE 23-1) closes. 2. Verify 2-RCV 23-1 closes (RTGB 205) as required. Notify Chemistry Dept. for discr-	(later)	74 SGBD	GAD 1362 Blowdown Treatment GAD 3509-0-327
LAUN & CHEM DRAIN SUMP LEVEL HI N-22	1. Laundry and chemical drain sump has high level. 2. NONE	1. NONE 2. Check pmp start for laundry and/or chem. drain sump. Check if level alarm clears as sump pumped down. Check that pumps stop when sump is pumped down.	1 Ft. from on both sumps	LS-06-3 LS-06-4 Laun & Chem Drain Sump	GAD 534 P&ID 2998-G162
CONDR PIT / YARD SUMP LEVEL HI N-30	1. High level in the Condenser Pit Sump or the Yard Sump. 2. NONE	1. NONE 2. Verify sump pumps are running. Determine leakage source and isolate.	CNDR PIT-4 Ft. Yard Sump – 3'3"	LS-06-7 LS-06-8 Condenser Pit & Yard Sump	GAD 535, 745 P&ID 2998-G087
BLANK N-38	BLANK				
RX CAVITY LEAK HI N-46	1. High leakage rate into reactor cavity sump. 2. Reactor Cavity Leakage Recorder (FR-07-03) & Level Indicator (LIS-07-06).	1. NONE 2. Determine source & isolate leakage if possible. If RCS leakage, refer to the Off-Normal Procedure #2-0120031 "EXCESSIVE RCS LEAKAGE".	1 GPM into Reactor cavity sump	LS-07-12 Reactor Cavity Sump	GAD 576 P&ID 2998-G088

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
BORIC ACID MKUP TK 2A LEVEL HI/LO N-7	1. High or low level in the '2A' BAM Tank. 2. BAMT '2A' Level Indication (LIA-2306)	1. NONE 2. Check level. If high, secure filling if in progress. If low, fill tank with BA batch tank. Refer to Tech Specs 3.1.2.7 & 3.1.2.8	HI – 92% LO – 86%	LIA-2206 LIT/LIA-2206 LIA RTGB-205	CRD 155 P&ID 2998-G121
BORIC ACID MKUP TK 2A LEVEL LO/LO N-15	1. Low-low level in the '2A' BAM Tank. 2. BAMT '2A' Level Indication (LIA-2306)	1. NONE 2. Check level. Verify BAM pump off and fill tank with BA batch tank. Refer to Tech Specs 3.1.2.7 & 3.2.1.8.	18%	LIA-2206 LIA RTGB-205	CRD 155 P&ID 2998-G121
CVCS BA HTG SYS 2A/2B LOCAL ALARM N-23	1. Trouble in 2A or 2B CVCS Boric Acid Heat Tracing 2. NONE	1. NONE 2. Check local control panel or reflash modules RA-RAB-7, -8, and -9 on El. 19.5' in the RAB. Refer to Tech Specs 3.1.2.1 & 3.1.2.2 for necessary actions.	N/A	RA-RAB-7 CVCS/BA Het Tracing Local Control Pnl	CRD 1558 P&ID 2998-G121 2998-G122
BORIC ACID MKUP TK 2A TEMP HI/LO N-31	1. High or low temperature in BAM Tank 2A. 2. NONE	1. NONE 2. Verify local alarm and take necessary action. Refer to Tech Spec Figure 3.1-1	HI – 165°F LO – 135°F	TIC-2206/168 TIC-2207/169 BAM Tank 2A	CRD 168 169 P&ID 2998-G121
BA MKUP PP DISCHARGE PRESS LO N-39	1. Low BA pumps discharge pressure with low level demand from VCT auto makeup system (40%). 2. NONE	1. NONE 2. Verify condition of B/A makeup pps. If pp is not operating, start makup as necessary If pump was operating, determine cause of low press. & take necessary action.	85 psig	PS-2206 PS-2208 BAM Pumps Discharge Hdr	CRD 174 P&ID 2998-G121
BORIC ACID MKUP PP 2A OVERLOAD / CS OFF/SS ESOL N-47	1. Motor overload, control switch off, makup pump selector misaligned, breaker trip, fuse failure. 2. Control switch lights.	1. NONE 2. Verify alignment of control switch & selector switch. Reset if necessary or notify Electrical Dept.	N/A	SS/ISOL, HS/OFF, 74, HS-BOR-2A RTGB 205	CRD 174 P&ID 2998-G121

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL N VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BORIC ACID MKUP TK 2B LEVEL HI/LO N-8	1. High or low level in the '2B' BAM Tank 2. BAMT '2B' Level Indication (LIA-2208)	1. NONE 2. Check level. If high, secure filling if in progress. If low, fill take with BA batch tank. Refer to Tech Specs 3.1.2.7 and 3.1.2.8.	HI-92% LO-86%	LIA-2208 LIT/LIA-2208 LIA RTGB 205	GAD 155 P&ID 2998-G121
BORIC ACID MKUP TK 2B LEVEL LO/LO N-16	1. Low-low level in the '2B' BAT Tank. 2. BAMT '2B' Level Indication (LIA-2208)	1. NONE 2. Check level. Verify BAM pump off and fill tank with BA batch tank. Refer to Tech. Specs 3.1.2.7 & 3.1.2.8.	18%	LIA-2208 BAM TK 2B	GAD 155 P&ID 2998-G121
REACTOR SUMP ISOL VALVES CIS/SIAS OVERIDE N-24	1. Rx sump isolate valves (LCV-07-11A & LCV-07-11B) open with CIS or SIAS present. 2. NONE	1. NONE 2. Close LCV-07-11A & LCV-07-11B on RTGB-205 IF NOT NEEDED.	N/A	94-1, 94-2 3-1, 3-2 LCV-07-11A LCV-07-11B RTGB-205	GAD 576 P&ID 2998-G088
BORIC ACID MKUP TK 2B TEMP HI/LO N-32	1. High or low temperature in BAM Tank 2B. 2. NONE	1. NONE 2. Verify local alarm and take necessary action. Refer to Tech Spec Figure 3.1-1.	HI - 165°F LO - 135°F	TIC-2208/170 TIC-2209/171 BAM TK 2B	GAD 170/171 P&ID 2998-G121
BORIC ACID FLO HI/LO N-40	1. Deviation bet. BA flow setpoint and actual flow. 2. FRC 2210Y	1. NONE 2. Check BA flow & determine why it has changed from the desired setpoint.	1 GPM Difference Bet. Setpnt. & Actual Flow	FA-2210Y HS-2210/163 62X-2512 FRC 2210Y RTGB 205	GAD 192 P&ID 2998-G121
BORIC ACID MKUP PP 2B OVERLOAD/ CS OFF/SS ISOL N-48	1. Motor overload, control switch off, makeup pump selector misaligned, breaker trip, fuse failure. 2. Control switch lights.	1. NONE 2. Verify alignment of control switch & selector switch. Reset if necessary or notify Electrical Dept.	N/A	SS/ISOL, HS/OFF, 74, HS-BOR-2B RTGB 205	GAD 175

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FIND IF TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MINIFLO ISOL V-3695/3659 RAS-FAIL OPEN/ NO RAS CLOSED P-1	1. (A) Miniflow isolation valve(s) V-3695/3659 failed to close on RAS, or (B) Valve(s) in closed position with no RAS. 2. (A) RAS actuation indicating light dim. A (B) Valve position indication	1. NONE 2. (A) RAS: Place valve(s) in closed position. (B) No RAS present; place valve(s) in open position.	Valve Limit Switch Position with/or without RAS Signal	33XA, HS-3491 1/1520 HS-3659-1/244 RASXA Valve Limit Switches V-3495/V-3659 (LATCH)	CAD 1520
BLANK P-11	BLANK				
MINIFLOW ISOL V-3659 OVERLOAD P-21	1. (A) Breaker trip on overload. (B) Fuse Blown 2. Valve position indication	1. NONE 2. Verify valve position/close locally if required.	(later)	74 Local at Breaker	CAD 244
S/D CLG LN 2A W/O V-3536 OPEN P-31	1. SIC blowup valve train A open 2. Valve position indication	1. NONE 2. Close V-3536 unless warming up SIC or equalizing boron.	N/A	33 Valve Limit Switch	CAD 1510
BLANK P-41	BLANK				
BLANK P-51	BLANK				

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MINIFLO ISOL V-3496/3660 RAS-FAIL OPEN / NO RAS-CLOSED P-2	1. (A) Valve(s) failed to close on RAS. (B) Valve(s) in closed position with no RAS. 2. (A) RAS actuation indicating light dual. A (B) Valve position indication	1. NONE 2. (A) Place valve(s) in closed position. (B) Place valve(s) in open position	RAS Present	3 DOR, HS-3496-1/1520 HS-3660-1/245, RAS X B	OAD 1520
BLANK P-12	BLANK			- - - - - - - - - - - -	
MINIFLO ISOL V-3660 OVERLOAD P-22	1. (A) Breaker trip on overload (B) Fuse Blown 2. Valve position indication	1. NONE 2. Verify Valve position /close locally if required.	(later)	74	OAD 245
S/D CLG LN 2B W/U V-3530 OPEN P-32	1. SDC crossup valve train A open 2. Valve position indication	1. NONE 2. Close V-3530 unless standing up SDC or equalizing boron.	N/A	33	OAD 1511
BLANK P-42	BLANK			- - - - - - - - - - - -	
BLANK P-52	BLANK			- - - - - - - - - - - -	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P , VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
CIS ACTUATOR CHANNEL A/B P-3	1. Containment Isolation actuated 2. (A) Containment press indicators (B) Containment Rad. indications.	1. CIS components actuate 2. (A) Carry out reactor/turbine trip procedure if not a dual. malfunction and refer to LOCA/MSB procedures as appropriate. (B) If malfunction unisolate cont. using overrides as applicable.	5 psig or 10 R/HR	CIS-A CIS-B ESFAS Panel	OMD 330/331
CONTAINMENT PRESS HI CIS ONE TRIP P-13	1. One or more containment pressure bistables tripped 2. ESFAS CIS Press MA, MB, MC, MD	1. CIS initiates if 2 or 4 2. (A) If only one tripped check for malfunction (B) If 2 or more verify CIS components actuate carry out P-3 above.	5 psig	CIS-MA, MB, MC, MD	OMD 295
CONTAINMENT PRESS HI CIS ONE PRE-TRIP R P-23	1. Indicates increased containment pressure. 2. ESFAS CIS press MA, MB, MC, MD	1. NONE 2. (A) Verify increased cont. pressure. (B) Insure Reactor/Turbine Trip if pressure exceeds 4 psig.	(Later)	RA-RAB ESFAS Panel	OMD 1570
BLANK P-33	BLANK				
BLANK P-43	BLANK				
BLANK P-53	BLANK				

ANNUNCIATOR PANEL P VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTINENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK P-4	BLANK			- - - - - - - - - - -	
BLANK P-14	BLANK			- - - - - - - - - - -	
LINE WTR TO CW PPS ISOL VLVS OVRLD/ SIAS OVRID P-24	1. Motor overload or valves open with SIAS present 2. Position indication lights	1. NONE 2.(A) Check Breaker (B) Close valve(s) as applicable	N/A	- - - - - - - - - - - Limit SW at Valve(s)	
H_2 ANALYZER CONC III P-34	1. Indicates increasing containment H_2 concentration 2. H_2 Panel & Recorder	1. NONE 2. Notify Chemistry Dept.	4%	AH-1 - - - - - - - - - - - Behind RTGB	GAI 1205
H_2 ANALYZER SYSTEM FAILURE P-44	1. Indicates failure of analyzer 2. Verify pwr ON, valve alignment on H_2 panel	1. NONE 2. Notify Chemistry Dept.	N/A	CR2 - - - - - - - - - - - Behind RTGB	GAI 1205
BLANK P-54	BLANK			- - - - - - - - - - -	

ANNUNCIATOR PANEL P VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PREDICT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT RAD HI CIS CHNL TRIP P-5	1. One or more CIS HI RAD bistables tripped. 2. ESFAS CIS RAD MA, MB, MC, MD	1. CIS initiates if 2 of 4 2. (A) If only one channel check for malfunction. (B) If 2 or more verify CIS components actuate carry out reactor/turbine trip	10 R/hr	CIS-MA, MB, MC, MD --- ESFAS Panel	CKD 295
CONTAINMENT RAD HI CIS CHNL PRE-TRIP R P-15	1. Indicates increased cont. radiation. 2. ESFAS CIS RAD MA, MB, MC, MD	1. NONE 2. Compare cont. RAD monitors	(later)	74 --- ESFAS Panel	CKD 1570
BLANK P-25	BLANK			---	
PERSNL/EMERG AIR LCK DOOR OPEN P-35	1. Personnel or Emergency Airlock one or more doors OPEN 2. Notification of containment entry in progress.	1. NONE 2. Verify alarm is due to normal Ingress & Egress notify Tech. Staff if not.	N/A	LS-2, LS-4, LS-6, LS-8 --- Door limit switches thru Sec. Computer.	CKD 514
BLANK P-45	BLANK			---	
BLANK P-55	BLANK			---	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTAINS THERE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MN FEWTR ISOL HCV-09-1A ACCUM PRESS LO/CONT PWR P-6	1. Main feed isolation valve low accumulator press or loss of control power. 2. Valve position lights	1. NONE 2. (A) Have operator verify local panel for specific LO press condition. (B) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, PS1, PS2, PS3 Local Aux Feed Area	GAD 655
MN FEWTR ISOL HCV-09-1B ACCUM PRESS LO/CONT PWR P-16	1. Main feed isolation valve low accumulator press or loss of Control Power. 2. Valve position lights	1. NONE 2. (A) Have operator verify local panel for specific LO press condition. (B) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, PS1, PS2, PS3 Local Aux eed Area	GAD 656
MN FEWTR ISOL HCV-09-2A ACCUM PRESS LO/CONT PWR P-26	1. Main feed isolation valve low accumulator press or loss of Control Power. 2. Valve position lights	1. NONE 2. (A) Have operator verify local panel for specific LO press condition. (B) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, PS1, PS2, PS3 Local Aux Feed Area	GAD 671
MN FEWTR ISOL HCV-09-2B ACCUM PRESS LO/CONT PWR P-36	1. Main feed isolation valve low accumulator press or loss of Control Power. 2. Valve position lights	1. NONE 2. (A) Have operator verify local panel for specific LO press condition. (B) Check fuses for Control Power (C) Notify I & C	(later)	74, PS1, PS2, PS3 Local Aux Feed Area	GAD 672
BLANK P-46	BLANK				
BLANK P-56	BLANK				

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MSIS CHNL A ACTUATION P-7	1. Main Steam Isolation A Train actuated 2. (A) "A" S/G press and actuation indicating lights (B) Cont. press indication	1. MSIS components isolated 2. (A) Verify components function in auto or perform manually (B) Carry out Reactor/Turbine Trip & refer to Main Steam Line Break Proc. 2-0810040.	500 psig S/G Press 5 psig Cont. Press	MSIS-A ESFAS Panel	OAD 330
MSIS SG 2A PRESS LO CHNL BYP P-17	1. One or more MSIS S/G "A" press bistables tripped. 2. ESFAS MSIS press S/G 2A-MA, MB, MC, MD	1. MSIS if 2 of 4 2. (A) If only one channel check for malfunction (B) If 2 or more carry-out trip procedure and refer to MSLB Procedure 2-0810040.	600 psig	MSIS-MA, MB, MC, MD ESFAS Panel	OAD 295
BLANK P-27	BLANK				
BLANK P-37	BLANK				
MSIV HCV-08-1A AIR PRESS LO/ DC FAILURE P-47	1. Low air press in accumulator or loss of D.C. Control Power. 2. (A) Local panel air pressure (B) Valve position indicating lights	1. NONE 2. (A) HCV-08-1A fails shut on total loss of air. Restore air supply to accumulator. (B) Determine cause of D.C. failure.	70 psig	74, PS-08-12A (later)	OAD 312
MSIV HCV-08-1A FAIL TO CLOSE P-57	1. HCV-08-1A failed to close 2. Valve position indicating lights	1. NONE 2. Determine cause of failure	N/A	94X, 33X Valve limit switches	OAD 312

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMINENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MSIS CHNL A ACTUATION BLOCKED P-8	1. Channel A MSIS blocked 2. S/G press MA, MB, MC, MD	1. Blocks MSIS Chnl A 2. Vrify S/G press $\leq$ 700 psia	N/A	MSIS-A ESFAS Panel	CHD 330
MSIS CHNL A ACTUATION BLOCK PERMISS P-18	1. "A" S/G press $\leq$ 700 psia 2. S/G PRESS MA, MB, MC, MD	1. NONE 2. Verify S/G "A" press $\leq$ 700 psia block MSIS "A" if shutdown in progress.	700 psia	MSIS-A ESFAS Panel	CHD 330
BLANK P-28	BLANK				
FW PP 2A/2B DISCH MV-09-1/2 OVERLOAD P-38	1. Fuse failure or bkr trip on overload 2. Valve position lights	1. Valves fail as is 2. (A) Have operator check fuses/reset overload (B) Notify Electrical Dept.	(Later)	74/621, 74/616 Local at Breaker	CHD 621
BLANK P-48	BLANK				
MSIV BYP MV-08-1A OVERLOAD P-58	1. Fuse failure or bkr trip on overload 2. Valve position lights	1. Valve fails as is 2. (A) Have operator check fuses/reset overload (B) Notify Electrical Dept.	(Later)	74 Local at Breaker	CHD 311

ST. LUCIE UNIT 2
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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P VERTICAL COLUMN 9

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MSIS CHNL B ACTUATION P-9	1. Main Steam Isolation B Train actuated 2. (A) "B" S/G press and actuation indicating lights (B) Cont. press indications	1. MSIS components isolate 2. (A) Verify components function in auto or perform manually (B) Carry out reactor/turbine trip & refer to MSLB 2-0810060	600 psia S/G press 5 psig Cont. Press	MSIS-B - - - - - - - - - - - -	OMD 331
MSIS SG 2B PRESS LO CHNL TRIP P-19	1. One or more MSIS S/G "B" press bistables tripped. 2. ESFAS MSIS press S/G 2B-MA, MB, MC, MD	1. MSIS if 2of4 2. (A) If only on channel check for malfunction (B) If 2 or more carry out trip procedure and refer to MSLB Procedure 2-0810060	600 psia	MSIS-MA, MB, MC, MD - - - - - - - - - - - -	OMD 295
BLANK P-29	BLANK			- - - - - - - - - - - -	
BLANK P-39	BLANK			- - - - - - - - - - - -	
MSIV HCV-08-1B AIR PRESS LO/ DC FAILURE P-49	1. Low air press in accumulator or loss of DC power 2. (A) Local panel air pressure (B) Valve position indicating lights	1. NONE 2. (A) HCV 08-1B fails shut on total loss of air. Restore air supply to accumulator (B) Determine cause of DC failure	70 psig	74, PS-08-12B - - - - - - - - - - - -	OMD 315
MSIV HCV-08-1B FAIL TO CLOSE P-59	1. HCV-08-1B failed to close 2. Valve position indicating lights	1. NONE 2. Determine cause of failure	N/A	94X, 33X - - - - - - - - - - - -	OMD 315

ANNUNCIATOR PANEL P VERTICAL COLUMN 10

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MSIS CHNL B ACTUATION BLOCKED P-10	1. Channel B MSIS blocked 2. S/G Press MA, MB, MC, MD	1. Block MSIS Channel B 2. Verify S/G pres $\leq$ 700 psia	N/A	MSIS B --- ESFAS Panel	OAD 331
MSIS CHNL B ACTUATION BLOCK PERMISS P-20	1. "B" S/G press $\leq$ 700 psia 2. S/G press MA, MB, MC, MD	1. NONE 2. Very S/G "B" pres $\leq$ 700 psia block MSIS "B" if shutdown in progress.	700 psia	MSIS-B --- ESFAS PANEL	OAD 331
BLANK P-30	BLANK			---	
RAB TURB BL/ AUX STEAM LINE TCV-08-06/ PCV-16-1 CLOSE P-40	1. Fuse failure or bkr trip on overload 2. Valve position lights	1. Valves fail as is 2. (A) Rest operator check fuses/reset overload. (B) Notify Electrical Department	(later)	TS-08-7B(1-6) TS-16-1A(1-6) --- Local at Breaker	OAD 751/752
BLANK P-50	BLANK			---	
MSIV BYP MV-08-1B OVERLOAD P-60	1. Fuse failure or bkr trip on overload 2. Valve position lights	1. Valve fails as is 2. (A) Rest operator check fuses/reset overload (B) Notify Electrical Department	(later)	74 --- Local at Breaker	OAD 314

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGIN. ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ENG SFGD MODULE REMOVED 0-1	1. One or more safeguards modules removed. 2. NONE	1. NONE 2. (A) Determine which module removed and why (B) Ensure Tech. Spec. requirements are met	(later)	ESF-MA, MB, MC, MD SA, SB --- Behind RTGB-206 or or HVAC Panel	OAD 1580
BLANK 0-11				---	
HPSI PP 2B OVERLOAD 0-21	1. Thermal overload of HPSI Pump 2B 2. (A) Ammeter High before trip. (B) Breaker indicate lights - out	1. Pump trips 2. (A) Verify HPSI pump 2B tripped (B) Verify HPSI pump A running or start if required. (C) Check HPSI Bkr 2-20405 locally	(later)	74-1, 74-4 (later) --- Breaker 2-20405/2B3-4160V Bus	OAD 238
HPSI PP 2B START FAIL. / SIAS OVRID 0-31	1. (A) HPSI Pump 2B fail to auto start on SIAS (B) OR, HPSI Pump 2B control switch in stop 2. (A) HPSI pump 2B ammeter (B) HPSI Pump Breaker indication.	1. NONE 2. (A) Attempt start of 2B HPSI Pump by CSW and verify HPSI Pump 2A operation, start as required (B) Place control switch to "Auto".	(later)	74-3, 74-4 (later) --- Breaker 2-20405/2B3-4160V Bus	OAD 238
BLANK 0-41				---	
HPSI VLV 3616/26/36/46 OVERLOAD / SIAS OVRID 0-51	1. One or more HPSI Injection header valves tripped on thermal overload or CS in closed position. 2. Valve control switch position or valve position indication lights	1. Thermal Overload; valve fails as is. 2. (A) Place control switch to Auto (B) Check Breaker(s) locally, notify Electric Department if necessary (C) Attempt to operate with CS or manually	(later)	3, 74, 258, 261, 264, 267 (later) --- Breakers (16) 2-42057/2B5 MCC (26) 2-42123/2B6 MCC (36) 2-42122/2B6 MCC (46) 2-42054/2B5 MCC	OAD 258

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR SYMPTOM TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
AUTO TEST INSERTION FAULT 0-2	1. One or more ESFAS bistables out of calibration, or failure 2. (A) Auto test lamp fails to flash on auto test (B) Auto test lamp on steady on auto test	1. NONE 2. (A) Determine which bistable is out of calibration (B) Place in bypass if required by T.S. (C) Notify I & C	5% Above Setpoint 5% Below Setpoint	ESF-SA - - - - - - - - - - - - ESFAS Panel behind RTGB-206	GD 1580
BLANK 0-12	BLANK			- - - - - - - - - - - -	
BLANK 0-22	BLANK			- - - - - - - - - - - -	
BLANK 0-32	BLANK			- - - - - - - - - - - -	
BLANK 0-42	BLANK			- - - - - - - - - - - -	
BLANK 0-52	BLANK			- - - - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 11 VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTMT PRESS SIAS MEAS CHNL TRIP 0-3	1. High containment pressure 1 or more channels has exceeded trip value. 2. RR28-206 containment pressure indication channels MA, MB, MC, or MD high pressure indication	1. 2/4 Logic, SIAS actuates 2. (A) Verify high containment pressure condition (B) Verify SIAS or initiate manually (C) Verify Reactor & Turbine Trip (D) Follow LOCA Procedure #2-0120042	5 psig HI	SIAS-MA, MB, MC, MD --- ESFAS Cabinet or SA, SB Actuation Cabinets	OAD 295
BLANK 0-13	BLANK			---	
HPSI PP 2B DISCH V-3654 CLOSE 0-23	1. HPSI Pump 2B discharge valve not fully open 2. Valve position indication	1. NONE 2. (A) Verify control switch in locked open position unless Hot Leg Injection in (B) Open locally if required.	< Fully Open Limit Switch Contact	33 Valve position Limit Switch --- V-3654 2B HPSI RM	OAD 277
HPSI PP 2A DISCH V-3656 CLOSE 0-33	1. HPSI Pump 2A discharge valve not fully open 2. Valve Position Indication	1. NONE 2. (A) Verify control switch in locked open position unless Hot Leg Injection in operation. (B) Open locally if required	< Fully Open Limit Switch Contact	33 Valve Position Limit Switch --- V-3656 2A HPSI Room	OAD 279
BLANK 0-43	BLANK			---	
BLANK 0-53	BLANK			---	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 0-4	BLANK			- - - - - - - - - -	
BLANK 0-14	BLANK			- - - - - - - - - -	
BLANK 0-24	BLANK			- - - - - - - - - -	
SI TK ISOL V-3614/3624 CLOSE 0-34	1. 2A2 and/or 2A1 SIT isolation valve not fully open. 2. Valve position indication	1. Valves automatically open when RCS pressure $\geq$ 500 psia. 2. Verify power available and open the valve(s) if RCS pressure $\geq$ 500 psia	< Fully Open Limit Switch Contact	33 Open limit switch on - - - - - - - - - - - V3614, 3624 In Containment (19.5)	OAD's 269 270
SI TK ISOL V-3614/3624 OVERLOAD 0-44	1. (A) Motor operator on either 2A2 or 2A1 SIT isolation valve tripped on thermal overload, (B) OR, valve(s) have been racked out. 2. Valve position indication; lights out	1. Valves fail as is. 2. (A) Have operator check breaker(s) 2-41219/2-41311 locally, notify Electrical Dept. if necessary. (B) Manually operate valves if required	(later)	74 (later) - - - - - - - - - - - Breakers; (14) 2-41219/2A5 MCC (24) 2-41311/2A6 MCC	OAD's 269 270
BLANK 0-54	BLANK			- - - - - - - - - -	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 0-5	BLANK			- - - - - - - - - - -	
BLANK 0-15	BLANK			- - - - - - - - - - -	
BLANK 0-25	BLANK			- - - - - - - - - - -	
SI TK ISOL V-3634/3644 CLOSE 0-35	1. 281 and/or 282 SIT Isolation valve(s) not fully open 2. Valve position indication	1. Valves automatically open when RCS pressure $\geq$ 500 psia 2. Verify power available and open the valve(s) if RCS pressure $\geq$ 500 psia	< Fully Open Limit Switch Contact	33 - - - - - - - - - - - Open Limit Switch on Valves	GMD's 271 272
SI TK ISOL V-3634/3644 OVERLOAD 0-45	1. Motor operator on either 281 or 282 SIT Isolation Valve tripped on thermal overload 2. Valve position indication; Lights-out	1. Valves fail as is. 2. (A) Have operator check breaker(s) 2-42117/2-42048 locally, notify Electrical Dept. if necessary (B) Manually operate valves locally	(Later)	74 (later) - - - - - - - - - - - Breakers (34) 2-42117/286 MCC (44) 2-42048/285 MCC	GMD's 271 272
BLANK 0-55	BLANK			- - - - - - - - - - -	

2

ANNUNCIATOR PANEL Q VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIC SECTION CROSS TIE V-3545 OPEN Q-6	1. SIC suction cross connect valve V-3545 open 2. Valve position indication	1. NONE 2. (A) Verify V-3545 MS in local closed (B) Close manually if required	< Fully Closed Limit Switch Contact	33 Open Limit Switch --- V-3545 (later)	CAD 1501
HOT LEG INJECT LOOP 2A PRESS Q-16	1. Indicates high pressure between Hot Leg Injection check valves V-3524 & V-3525 due to leakage of RCS isolation valves. 2. "HPSI to Hot Leg 2A" pressure goes: PIA-3310	1. NONE 2. (A) V-3572 to relieve pressure (B) Consult RCS Leakage Tech Specs	HI - 1000 psig Reset 900 psig	PIA-3310 Press. Indicating Alarm SIGMA --- RTGB-206	CAD 1512
HPSI TO HT LG 2A V-3540/50 OVERLOAD R Q-26	1. Loop 2A Hot Leg Injection Valve Motor Operators tripped on thermal overload 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breaker(s) 2-41307/2-41344 locally, notify Electrical Dept. if necessary (B) Operate locally if required	(later)	74/233, 74/234 (later) --- (40) 2-41307/2A6 MCC (50) 2-41344/2A6 MCC	CAD's 233 234
HPSI PP 2A DISCH V-3656 OVERLOAD Q-36	1. HPSI pump 2A discharge valve has tripped on overload 2. Valve position indication; light-out	1. Valve fails as is 2. (A) Have operator check breaker 2-41255 locally, notify Electrical Dept. if necessary (B) Operate locally if required	(later)	74 (later) --- Breaker 2-41255/2A5 MCC	CAD 279
HOT LEG INJECT LOOP 2A V-3540/3550 OPEN Q-46	1. Hot Leg Injection valves Loop 2A open 2. Valve position indication	1. NONE 2. Verify limit switches in open closed position or close manually, unless Hot Leg Injection in operation.	< Fully Closed Limit Switch Contact	33/233, 33/234 Valve Limit Switches --- V-3540, V-3550 2A HPSI Room	CAD's 233 234
S/D CLG CONT V-3306 CLOSE/CONT SIGNAL LOSS Q-56	1. SIC Heat Exchanger Bypass FCV-3306; (A) Less than fully open from valve Lim. Sw. (B) OR, remote local CS out of "Locked Open" (C) Flow signal to FIC-3306 has been lost 2. (A) Valve position indication (B) SIC Flow Indication	1. NONE 2. NORMAL AT POWER; (A) Verify V-3306 CS in "Locked Open" position. ON SHUTDOWN COOLING; (B) Take manual control on Makatronic Controller and open. (C) Verify ≥ 3000 GPM flow on SIC	Limit Sw. <Full Open --- Remote Local CS out of Locked Open --- FIC-3306 Controller loss of flow Signal	33/Lim. Switch V-3306, & SS-3306-1 Local Res. Switch Both in a LPSI Room. --- FC 3306-1/Controller RTGB-206	CAD's 1516 1528

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIC SECTION CROSS TIE V-3545 OVERLOAD 0-7	1. SIC section cross connect V-3545 has tripped on 2. Valve position indication lights – out	1. Valve fails as is on overload. 2. (A) Have operator check breaker 2-42404 locally, notify Elect. Dept. if necessary (B) Operate valve locally, if possible	(later)	74 (later) --- Breaker 2-42404 MCC 2AB	GAD 1501
HOT LEG INJECT LOOP 2B PRESS HI 0-17	1. Indicates high pressure between Hot Leg Injection check valves V-3526 & V-3527 2. "HPSI to Hot Leg 2A" pressure indicator alarm PIA-3120	1. NONE 2. (A) Align system thru leakage valve V-3571 to relieve pressure (B) Consult Tech Spec leakage requirements	HI – 1000 psig Reset – 900 psig	PIA-3120 Pressure Indicating Alarm SIGMA --- RTGB-206	GAD 1513
HPSI TO HT LG 2B V-3551/23 OVERLOAD 0-27	1. One or both Loop 2B Hot Leg Injection Valve Motor Operators tripped on overload 2. Valve position indication lights – out	1. Valves fail as is on overload 2. (A) Have operator check breaker(s) 2-42066/ 2-42065 locally and notify Electrical Dept. if necessary (B) Operate valves manually if necessary	(later)	74/235, 74/236 (later) --- (51) 2-42066/285 MCC (23) 2-42065/285 MCC	GAD's 235 236
HPSI PP 2B DISCH V-3654 OVERLOAD 0-37	1. 2B HPSI pump discharge valve 2B-3654 has tripped on motor overload 2. Valve position indication lights-out	1. Valve fails as is on overload 2. (A) Have operator check breaker 2-42059 locally, notify Elect. Dept. if necessary (B) Open locally if required	(later)	74 (later) --- Breaker 2-42059/285 MCC	GAD 277
HOT LEG INJECT LOOP 2B V-3523/3551 OPEN 0-47	1. One or both Hot Leg Injection valves Loop 2B open 2. Valve position indication	1. NONE 2. Verify Control Switch in locked closed position	< Fully Closed Limit Switch Contact	33/235, 33/236 Limit Switches --- Hot Leg Injection Valves V-3523/51 2B HPSI Room	GAD 235 236
S/D CLG CONT V-3301 CLOSE/CONT SIGNAL LOSS 0-57	1. SIC Heat Exchanger Bypass FCV-3301. (A) Less than fully open from valve limit switch (B) Remote local CS out of "locked Open" (C) OR, flow signal to FIC-3301 has been lost. 2. (A) Valve position indication (B) SIC flow indications	1. NONE 2. (A) Verify V-3301 HS in open position (B) Take manual control on Modutrole Controller and open (C) Verify ≥ 3000 GPM flow on SIC	Limit Switch <Fully Open --- Remote Local CS out of Locked Open --- FIC 3306 Controller Loss of Flow Signal	33/Lim. Switch SS3301-1 Rem. CS Both in HPSI Room --- FC 3301-1 Controller RTGB-206	GAD 1517 1528

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 9 VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/D CLG ISOL V-3651/3652 OPEN 9-B	1. Loop 2B Hot Leg Suction Valves V-3651/3652 open 2. Valve position indication	1. Valves Auto Close at ≥ 275 psia 2. (A) None, if on SDC. (B) Place hand switch to locked closed position	< Fully Closed Limit Switch Contacts	33/253, 33/254 Limit Switches - - - - - - - - - - - V-3651, 3652	OAD's 253 254
S/D CLG ISOL V-3651/3652 OVERLOAD 9-1B	1. Loop 2B Hot Leg Suction Valves V-3651/3652 overload trip 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breaker(s) locally notify Electrical Dept. if necessary (B) Operate locally if required	(later)	74/253, 74/254 (later) - - - - - - - - - - - Breakers (51) 2-42121/2B6 MCC (52) 2-41243/2A5 MCC	OAD's 253 254
S/D CLG ISOL V-3664 OPEN 9-2B	1. Loop 2A Hot Leg Suction Valve V-3664 open 2. Valve position indication	1. NONE 2. (A) None, if on SDC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch - - - - - - - - - - - V-3664 (later)	OAD 1502
S/D CLG HX 2A V-3456 OPEN 9-3B	1. 2A SDC Heat Exchanger Return Valve V-3456 open 2. Valve position indication	1. NONE 2. (A) None, if on SDC (B) Place handswitch to local closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch - - - - - - - - - - - V-3456 2A LPSI Room	OAD 1504
S/D CLG HX 2A V-3517 OPEN 9-4B	1. 2A SDC Heat Exchanger Inlet Valve V-3517 open 2. Valve position indication	1. NONE 2. (A) None, if on SDC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch - - - - - - - - - - - V-3517 2A LPSI Room	OAD 1506
S/D CLG TCV V-3657 OPEN 9-5B	1. 2A SDC temperature control valve open 2. Valve position indication	1. NONE 2. (A) None, if on SDC (B) Place handswitches to locked closed position	< Fully Closed Limit Switch Contacts	33/Limit Switch - - - - - - - - - - - V-3657 (later)	OAD 1514

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 9

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/D CLG ISOL V-3480/3481 OPEN 0-9	1. Loop 2A Hot Leg Suction Valves V-3480/3481 open 2. Valve Position Indication	1. Valves Auto Close ≥ 275 psia 2. (A) None, if on SIC (B) Place handswitch(s) to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	31/249, 31/250 Valve Limit Switch - - - - - - - - - - - - V-3480/81	OAD 249 250
S/D CLG ISOL V-3480/3481 OVERLOAD 0-19	1. Loop 2A Hot Leg Suction Valves V-3480/3481 Overload trip 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breaker(s) locally notify Electrical Dept. if necessary (B) Operate manually if required	(later)	74/249, 74/280 (later) - - - - - - - - - - - - Breakers (80) 2-42013/2B5 MCC (81) 2-41204/2A5 MCC	OAD 249 250
S/D CLG ISOL V-3665 OPEN 0-29	1. Loop 2B Hot Leg Suction Valve V-3665 open 2. Valve position indication	1. NONE 2. (A) None, if on SIC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33, Valve Limit Switch - - - - - - - - - - - - V-3665 (later)	OAD 1503
S/D CLG HX 2B V-3457 OPEN 0-39	1. 2B SIC Heat Exchanger Return Valve V-3457 open 2. Valve position indication	1. NONE 2. (A) None, if on SIC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33, Valve Limit Switch - - - - - - - - - - - - V-3457 2B LPSI Room	OAD 1505
S/D CLG HX 2B V-3658 OPEN 0-49	1. 2B SIC Heat Exchanger Inlet Valve V-3658 open 2. Valve position indication	1. NONE 2. (A) None, if on SIC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33, Valve Limit Switch - - - - - - - - - - - - V-3658 2B LPSI Room	OAD 1507
S/D CLG TCV V-3612 OPEN 0-59	1. 2B SIC Temperature Control Valve V-3612 open 2. Valve position indication	1. NONE 2. (A) None, if on SIC (B) Place hand switches to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33, Valve Limit Switch - - - - - - - - - - - - V-3612 (later)	OAD 1515

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 0 VERTICAL COLUMN 10

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR CURRENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 0-10	BLANK			- - - - - - - - - -	
S/D COOLING V-3664/3536 OVERLOAD 0-20	1. Loop 2A Hot Leg Suction Valve V-3664 and/or SIC 2A Warmup valve V-3536 Mech. Overload 2. Valve position indication	1. Valves fail ASIS on overload 2. (A) Have operator check breakers locally, notify Electrical Dept. if necessary (B) Operate valve(s) manually if required	(later)	74/1504, 74/1510 (later) - - - - - - - - - - Breakers (64) 2-41318/2A6 MCC (36) 2-41325/2A6 MCC	OMD's 1502 1510
SD COOLING V-3665/3539 OVERLOAD 0-30	1. Loop 2B Hot Leg Suction Valve V-3665 and/or SIC 2B Warmup Valve V-3539 Mechanical Overload 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breakers locally, notify Electrical Dept. if necessary (B) Operate valve(s) manually if required	(later)	74/1503, 74/1511 (later) - - - - - - - - - - (65) 2-41318/2A6 MCC (39) 2-42131/2B6 MCC	OMD 1503
S/D COOLING V-3456/3517/ 3657 OVERLOAD 0-40	1. 2A SDC Heat Exchanger Inlet, Outlet & Temperature Control Valves Mechanical Overload 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breakers locally; notify Electrical Dept. if necessary (B) Operate valve(s) manually if required	(later)	74/1504, 1506, 1514 (later) - - - - - - - - - - (56) 2-41224/2A5 MCC (57) 2-41223/2A5 MCC (17) 2-41225/2A5 MCC	OMD 1504
S/D COOLING V-3457/3658/ 3512 OVERLOAD 0-50	1. 2B SDC Heat Exchanger Inlet, Outlet & Temperature Control valves mechanical overload 2. Valve position indication	1. Valves fail as is on overload 2. (A) Have operator check breakes locally, notify Electrical Dept. if necessary (B) Operate valve(s) manually if required	(later)	74/1505, 07, 15 (later) - - - - - - - - - - (57) 2-42026/2B5 MCC (58) 2-42130/2B6 MCC (12) 2-42025/2B5 MCC	OMD 1505
BLANK 0-60	BLANK			- - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL R VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTINENT TO ISSUE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
SI TK 2A1 PRESS HI/LO R-1	1. Indicates increase/decrease in level or N_2 Press. 2.(A) PIA-3321 SIT press. indicator. (B) LIA-3321 SIT W/R level indicator.	1. NONE 2.(A) Loss Press - verify vent closed - Increase N_2 Press - Check for Local Leak (B) High Press - Verify N_2 Isolated - Vent excess pressure (C) Verify level in Spec.	HI- 621 PSIG LO- 579 PSIG	PIA-3321 Pressure Indicating Alarm SIGMA Local at Tank 2A1	OAD-281
SI TK 2A1 PRESS HI-HI R-11	1. Indicates increase in level of N_2 pressure 2.(A) PIA-3321 SIT press. indicator (B) LIA-3321 SIT W/R level indicator	1. NONE 2.(A) Close N_2 supply to tank (B) Close vent valve (C) Verify level not increasing	HI-HI 643 PSIG	PS-3323 Pressure Switch Local at Tank 2A1	OAD-1522
SI TK 2A1 PRESS LO-LO R-21	1. Indicates loss of N_2 or large level decrease 2.(A) PIA-3321 SIT press. indicator (B) LIA-3321 SIT W/R level indicator	1. NONE 2.(A) Fill with N_2 to specification press. (B) Close vent valve (C) Verify normal level (D) Check locally for leaks	Lo-Lo 557 PSIG	PS-3322 Pressure Switch Local at Tak 2A1	OAD-1522
SI TK 2A1 LEVEL HI/LO R-31	1. HI-Indicates in leakage from RCS LO-Indicates leakage from tank 2.(A) LIA-3321 and PIA-3321 (B) Verify no flow/press on SI leakage test line	1. NONE 2.(A) High level - Open fill/drain valve (B) Low level - check drain closed (C) Verify proper valve line-up (D) Verify proper level		LIA-3321 Level Indicating Alarm SIGMA Local at Tank 2A1	OAD-281
SI TK 2A1 LEVEL HI-HI R-41	1. Indicates leakage from RCS 2. LIA-3322 SIT narrow range level indicator	1. NONE 2.(A) Verify tank level (B) Open drain/fill VLV & restore proper LVL (C) Check SI leakage test line line-up (D) Verify tank line-up	HI-HI 92.5%	LIA-3322 Level Indicating Alarm SIGMA Local at Tank 2A1	OAD-1521
SI TK 2A1 LEVEL LO-LO R-51	1. Indicates leakage from tank 2. LIA-3322 SIT narrow range level indicator	1. NONE 2.(A) Verify drain valve closed (B) Check tank line-up (C) Restore normal level	Lo-Lo 75.5%	LIA-3322 Local at Tank 2A1	OAD-1521

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SI TK 2A2 PRESS HI/LO R-2	1. Indicates increase/decrease in level or N_2 Press. 2.(A) PIA-3311 SIT press. indicator. (B) LIA-3311 SIT W/R level indicator.	1. NONE 2.(A) Loss Press – verify vent closed – Increase N_2 Press – Check for Local leak (B) High Press – Verify N_2 Isolated – Vent excess pressure (C) Verify level in Spec.	HI- 621 PSIG LO- 579 PSIG	PIA-3311 Pressure Indicating Alarm SIGMA RTGB-206	OAD-280
SI TK 2A2 PRESS HI-HI R-12	1. Indicates increase in level of N_2 pressure 2.(A) PIA-3311 SIT press. indicator (B) LIA-3311 SIT W/R level indicator	1. NONE 2.(A) Close N_2 supply to tank (B) Vent excess N_2 to reduce press. (C) Verify level not increasing	HI-HI 643 PSIG	PS-3313 Pressure Switch Local at Tank 2A2	OAD-1522
SI TK 2A2 PRESS LO-LO R-22	1. Indicates loss of N_2 or large level decrease 2.(A) PIA-3311 SIT press. indicator (B) LIA-3311 SIT W/R level indicator	1. NONE 2.(A) Fill with N_2 to specification press. (B) Close vent valve (C) Verify normal level (D) Check locally for leaks	Lo-Lo 557 PSIG	PS-3312 Pressure Switch Local at Tank 2A2	OAD-1522
SI TK 2A2 LEVEL HI/LO R-32	1. HI-Indicates in leakage from RCS LO-Indicates leakage from tank 2.(A) LIA-3311 and PIA-3311 (B) Verify no flow/press on SI leakage test line	1. NONE 2.(A) High level – Open fill/drain valve (B) Low level – check drain closed (C) Verify proper valve line-up (D) Verify proper level		LIA-3311 Level Indicating Alarm SIGMA RTGB-206	OAD-280
SI TK 2A2 LEVEL HI-HI R-42	1. Indicates leakage from RCS 2. LIA-3312 SIT narrow range level indicator	1. NONE 2.(A) Verify tank level (B) Open drain/fill VLV & restore proper LVL (C) Check SI leakage test line line-up (D) Verify tank line-up	HI-HI 92.5%	LIA-3312 Level Indicating Alarm SIGMA RTGB-206	OAD-1521
SI TK 2A2 LEVEL LO-LO R-52	1. Indicates leakage from tank 2. LIA-3312 SIT narrow range level indicator	1. NONE 2.(A) Verify drain valve closed (B) Check tank line-up (C) Restore normal level	Lo-Lo 75.5%	LIA-3312 Level Indicating Alarm SIGMA RTGB-206	OAD-1521

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL R VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SI TK 281 PRESS HI/LO R-3	1. Indicates increase/decrease in level or N_2 Press. 2.(A) PIA-3331 SIT press. Indicator. (B) LIA-3331 SIT W/R level Indicator.	1. NONE 2.(A) Low Press - verify vent closed - Increase N_2 Press - Check for Local leak (B) High Press - Verify N_2 Isolated - Vent excess pressure (C) Verify level in Spec.	HI- 621 PSIG LO- 579 PSIG	PIA-3331 Pressure Indicating Alarm SIOMA Local at Tank	OMD-282
SI TK 281 PRESS HI-HI R-13	1. Indicates increase in level of N_2 pressure 2.(A) PIA-3331 SIT press. Indicator (B) LIA-3331 SIT W/R level Indicator	1. NONE 2.(A) Close N_2 supply to tank (B) Close vent valve (C) Verify level not increasing	HI-HI 643 PSIG	PS-3333 Pressure Indicating Alarm SIOMA Local at Tank	OMD-1522
SI TK 281 PRESS LO-LO R-23	1. Indicates loss of N_2 or large level decrease 2.(A) PIA-3331 SIT press. Indicator (B) LIA-3331 SIT W/R level Indicator	1. NONE 2.(A) Fill with N_2 to specification press. (B) Close vent valve (C) Verify normal level (D) Check locally for leaks	Lo-Lo 557 PSIG	PS-3332 Pressure Switch Local at Tank	OMD-1522
SI TK 281 LEVEL HI/LO R-33	1. HI-Indicates in leakage from RCS LO-Indicates leakage from tank 2.(A) LIA-3331 and PIA-3331 (B) Verify no flow/press on SI leakage test line	1. NONE 2.(A) High level - Open fill/drain valve (B) Low level - check drain closed (C) Verify proper valve lineup (D) Verify proper level	HI - 88% Lo - 80%	LIA-3331 Level Indicating Alarm SIOMA Local at Tank	OMD-282
SI TK 281 LEVEL HI-HI R-43	1. Indicates leakage from RCS 2. LIA-3332 SIT narrow range level Indicator	1. NONE 2.(A) Verify tank level (B) Open drain/fill VLV & restore proper LVL (C) Check SI leakage test line lineup (D) Verify tank lineup	HI-HI 92.5%	LIA-3332 Level Indicating Alarm SIOMA Local at Tank	OMD-1521
SI TK 281 LEVEL LO-LO R-53	1. Indicates leakage from tank 2. LIA-3332 SIT narrow range level Indicator	1. NONE 2.(A) Verify drain valve closed (B) Check tank lineup (C) Restore normal level	Lo-Lo 75.5%	LIA-3332 Level Indicating Alarm SIOMA Local at Tank	OMD-1521

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SI TK 2B2 PRESS HI/LO R-4	1. Indicates increase/decrease in level or N_2 Press. 2.(A) PIA-3341 SIT press. indicator. (B) LIA-3341 SIT W/R level indicator.	1. NONE 2.(A) Loss Press - verify vent closed - Increase N_2 Press - Check for local leak (B) High Press - Verify N_2 Isolated - Vent excess pressure (C) Verify level in Spec.	HI- 621 PSIG LO- 579 PSIG	PIA-3341 Pressure Indicating Alarm SIGMA RRSB-206	OMD-283
SI TK 2B2 PRESS HI-HI R-14	1. Indicates increase in level of N_2 pressure 2.(A) PIA-3341 SIT press. indicator (B) LIA-3341 SIT W/R level indicator	1. NONE 2.(A) Close N_2 supply to tank (B) Vent excess N_2 to reduce press. (C) Verify level not increasing	HI-HI 643 PSIG	PS-3343 Pressure Switch Local at Tank	OMD-1522
SI TK 2B2 PRESS LO-LO R-24	1. Indicates loss of N_2 or large level decrease 2.(A) PIA-3341 SIT press. indicator (B) LIA-3341 SIT W/R level indicator	1. NONE 2.(A) Fill with N_2 to specification press. (B) Close vent valve (C) Verify normal level	Lo-Lo 557 PSIG	PS-3342 Pressure Switch Local at Tank	OMD-1522
SI TK 2B2 LEVEL HI/LO R-34	1. HI-Indicates in leakage from RCS LO-Indicates leakage from tank 2.(A) LIA-3341 and PIA-3341 (B) Verify no flow/press on SI leakage test line	1. NONE 2.(A) High level - Open fill/drain valve (B) Low level - check drain closed (C) Verify proper valve line-up (D) Verify proper level	HI - 88% Lo - 80%	LIA-3341 Level Indicating Alarm SIGMA RICB-206	OMD-283
SI TK 2B2 LEVEL HI-HI R-44	1. Indicates leakage from RCS 2. LIA-3342 SIT narrow range level indicator	1. NONE 2.(A) Verify tank level (B) Open drain/fill VLV & restore proper LVL (C) Check SI leakage test line line-up (D) Verify tank line-up	HI-HI 92.5%	LIA-3342 Level Indicating Alarm SIGMA RICB-206	OMD-1521
SI TK 2B2 LEVEL LO-LO R-54	1. Indicates leakage from tank 2. LIA-3342 SIT narrow range level indicator	1. NONE 2.(A) Verify drain valve closed (B) Check tank line-up (C) Restore normal level	Lo-Lo 75.5%	LIA-3342 Level Indicating Alarm SIGMA RICB-206	OMD-1521

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL R VERTICAL COLUMN 5

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK R-5	BLANK			- - - - - - - - - -	
BLANK R-15	BLANK			- - - - - - - - - -	
BLANK R-25	BLANK			- - - - - - - - - -	
BLANK R-35	BLANK			- - - - - - - - - -	
BLANK R-45	BLANK			- - - - - - - - - -	
BLANK R-55	BLANK			- - - - - - - - - -	
BLANK R-65	BLANK			- - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL R VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL A/B ACTUATION R-6	1. SIAS A and/or B train actuated 2.(A) Multiple safeguards equip. start and actuation (B) Lo PRZR pressure/high containment press.	1. SIAS components actuate 2.(A) Verify reactor & turbine trip (B) Verify auto action occur and follow LOCA Emerg. Proc. 2-0120042	5 PSIG HI Cont. Press. 1708 PSIA low PRZR Pressure	SIAS-A, SIAS-B ESFAS Cabinet Behind RTGB-206	OAD-246
PRZR PRESS LO SIAS BYPASS CHNL. BKUP R-16	1. One or more ESFAS PRZR press. Bistables has tripped 2. PIA-1102A, B, C, D PRZR safety channel press. Indicators	1. SIAS if 2/4 channels trip 2.(A) Verify PRZR press (B) If channel failure bypass (C) If valid carry out action per LOCA Emergency Procedure no. 2-0120042.	1708 PSIA LOW	SIAS-AA, BB, CC, DD ESFAS Cabinet Behind RTGB-206	OAD-295
PRZR PRESS LO SIAS CHNL BYP-UNAVAIL R-26	1. Low press on one or more PRZR press safety channels 2. PIA-1102A, B, C, D, PRZR safety channel press Indicators	1. NONE 2.(A) Verify PRZR press (B) Energize heaters (C) Start additional charging if low level (D) Isolate spray & PORV's	1808 PSIA LOW	RA-RAB-17 Refiash Panel (LATER)	OAD-1564
BLANK R-36	BLANK			- - - - - - - - - -	
SI HEADER LOOP 2A1 PRESS HI R-46	1. SI Header 2A1 press above normal 2. PIA-3129 SI loop press. Indicator	1. NONE 2.(A) Verify header pressure (B) Verify SIT 2A1 nomal parameters (C) Verify ECCS check valve integrity	HI-1000 PSIG Reset 900 PSIG	PIA-3129 Press Indicating Alarm SIGMA RTGB-206	OAD-281
SI HEADER LOOP 2A2 PRESS HI R-56	1. SI Header 2A2 press above normal 2. PIA-3119 SI loop press. Indicator	1. NONE 2.(A) Verify header pressure (B) Verify SIT 2A2 nomal parameters (C) Verify ECCS check valve integrity	HI-1000 PSIG Reset 900 PSIG	PIA-3119 Press Indicating Alarm SIGMA RTGB-203	OAD-280

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL R VERTICAL COLUMN 7

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ENC SMALL CAB DOORS OPEN R-7	1. One or more ENC doors open 2. Visually check cabinet doors	1. NONE 2. Determine which door open & reason. Verify all doors closed except during maintenance or testing	Limit Switch Contact "OPEN"	Door Switches ESFAS Cabinet Behind RTGB-206	CAD-331
BLANK R-17	BLANK			- - - - - - - - - -	
BLANK R-27	BLANK			- - - - - - - - - -	
BLANK R-37	BLANK			- - - - - - - - - -	
SI HEADER LOOP 281 PRESS LO R-47	1. SI header 281 press above normal 2. PIA-3339 SI loop press indicator	1. NONE 2.(A) Verify header press (B) Verify SIT 281 normal parameters (C) Verify HCV check valve integrity	LO-1000 psig Reset 900 psig	PIA-3339 Pressure Indicating Alarm SIGMA RTGB-206	CAD-282
SI HEADER LOOP 282 PRESS LO R-57	1. SI header 282 press above normal 2. PIA-3349 SI loop press indicator	1. NONE 2.(A) Verify header press (B) Verify SIT 282 normal parameters (C) Verify HCV check valve integrity	LO-1000 psig Reset 900 psig	PIA-3349 Pressure Indicating Alarm SIGMA RTGB-206	CAD-283

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL ACTUATION BLOCK PERMIT R-8	1. Capability to manually block SIAS 2. PIA-1102 A, B, C, D, PRZR press safety channel indicators	1. NONE 2. Verify 3 of 4 PRZR press indicators and block SIAS A & B if shutdown in progress	3/4 1808 PSIA Decreasing	SIAS-A, SIAS-B ESFAS Cabinets Behind KIA3-216	OAD-246 OAD-248
BACKFIT					
LPSI PP 2A OVRLD/TRIP R-29	1. LPSI pump 2A thermal overload 2. Amester high before trip	1. NONE 2. Stop LPSI PP 2A if LPSI PP 2B running or can be operated	(LATER)	74-1, 74-2 (LATER) (BREAKER)	OAD-251
LPSI PP 2A FAILURE/ SIAS (MOD)/ RAS (MOD) R-38	1.(A) LPSI pump 2A fail to start (B) LPSI pump 2A control switch in stop (C) LPSI pump 2A started after RAS 2.(A) LPSI pump 2A amester	1. NONE 2.(A) Place control switch to auto (B) Start LPSI pump 2A if required	(LATER)	64-2, 74-4, CS Pump Breaker Control Switch/ Contacts	OAD-251
LPSI PP 2A RUNNING/ V-3480/3481 OPENING R-48	1. LPSI PP 2A running when Inj suction valves have close signal 2.(A) LPSI PP 2A amester (B) Valve position indication	1. NONE (A) Reopen suction valves if possible (B) If (A) not possible STOP LPSI pump 2A (C) Verify RCS press <275 psia	(LATER)	52/251, 42C/249 42C/250 (LATER) Valve limit switches Pump MOV Contacts	OAD-249 OAD-250 OAD-251
LPSI VLV V-3615/3625 OVRLD/MV/ SIAS (MOD) R-58	1. Either V-3615/3625 LPSI Hdr. valves motor overload or control switch(s) in closed position 2.(A) Valve position indication (B) Control switch position	1. NONE 2.(A) Place control switche(s) to auto (B) Control switch positions (C) Breaker check breaker	(LATER)	(74,3)/257, (74,3)/260, (LATER) Breakers (LATER) C.S. Contacts	OAD-257 OAD-260

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 9

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL A BLOCKED R-9	1. Channel A SIAS manually blocked 2. Channel A blocked indicating light illuminated	1. NONE 2. Verify appropriate RCS pressure	3/4 1808 PSIA Decreasing With Blocked	SIAS-A ESFAS Cabinet	O4D-246
BACKFIT R-19				- - - - - - - - - -	
LPSI PP 2B OVLD/TRIP R-29	1. LPSI pump 2B thermal overload 2.(A) Ammeter high before trip (B) Breaker position indicate lights out	1. NONE 2. Stop LPSI pump 2B if LPSI pump 2A running or can be operated	(LSTER)	74-1, 74-2 (LATRM) Breaker (LATRM)	O4D-252
LPSI PP 2B FAILURE/ SIAS OVRD/ RAS OVRD R-39	1.(A) LPSI pump 2B fail to start (B) LPSI pump 2B control switch in stop (C) LPSI pump 2B started after RAS 2.(A) LPSI pump 2B ammeter (B) Manual start after RAS	1. NONE 2.(A) Place control switch to auto (B) Stop 2B LPSI pump if required (C) Start 2B LPSI pump if required	(LATRM)	74-3, 74-4, CS Pump Breaker Control Switch (LATRM)	O4D-252
LPSI PP 2B RUNNING/ V-3651/E52 CLOSING R-49	1. LPSI pump 2B running when hot leg suction valves have close signal 2.(A) LPSI pump 2B ammeter (B) Valve position indication	1. NONE 2.(A) Reopen suction valves if possible (B) If (A) not possible stop LPSI 2B (C) Verify RCS press <275 psia	(LATRM)	52/252, 42C/253, 42C/254 VLV Limit Switches PP BRK Contacts (LATRM)	O4D-252 O4D-253 O4D-254
LPSI VLV V-3615/3645 OVRLD/VLV SIAS OVRD R-59	1. Either V-3615/3645 LPSI HDR VLV motor overload or control switch(s) in closed position 2.(A) Valve position indications (B) Control switch position	1. NONE 2.(A) Place control switch to Auto (B) Open manually if required	(LATRM)	(74,3)/263, (74,3)/266 Local at Breaker (LATRM)	O4D-263 O4D-266

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 10

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL B BLOCKED R-10	1. Channel B SIAS manually blocked 2. Channel B blocked indicating light illuminated	1. NONE 2. Verify appropriate RCS pressure	3/4 1808 PSIA Decr. when Blocked	SIAS-B ESFAS Cabinet Behind RCTB-236	OMD-248
BACKFIT R-20					
HPSI PP 2A OVLD/TRIP R-30	1. HPSI pump 2A thermal overload 2. Ammeter high before trip	1. NONE 2. Stop HPSI PP 2A if HPSI PP 2B operable and in operation	(LATER)	74-1, 74-2 Local at Breaker (LATER)	OMD-237
HPSI PP 2A FAILURE/ SIAS/OVLD R-40	1.(A) HPSI pump 2A fail to start (B) HPSI pump 2A control switch in stop 2.(A) HPSI pump 2A Ammeter (B) HPSI pump 2A control switch	1. NONE 2.(A) Place control switch to Auto (B) Start HPSI 2A if required	(LATER)	74-3, 74-3, CS C.S. Contacts Pump BKR Contacts (LATER)	OMD-237
LPSI/HPSI PP 2A/2B STRGR /P R HI R-50				RA-RAB-7 Refash N/A	OMD-1209
AUX HPSI VLV 3617/27/37/47 OVLD/TRIP/ SIAS OVLD R-60	1.(A) Aux. HPSI valve motor overload (B) Aux. HPSI valve control switches in stop 2.(A) Valve position indication (B) Valve control switch position	1. NONE 2.(A) Place control switch(s) to Auto (B) Open manually if required	(LATER)	(74,3)/259,262,265,268 Control Switch Contacts/Local At Breaker(s)	OMD-259

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL S VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCW HEADER A FLO HI/LO S-1	1. (A) Indicates excessive or low flow 2. (A) Verify by observing pump amps. (B) Header pressure (C) Isolated components	1 NONE 2. (A) If low, start standby pump and investigate. (B) If HI, check for isolated components (C) Refer to CCW Off-Normal #2-0310030	HI - 9500 GPM LO - 4000 GPM	FIS-14-1A - - - - - - - - - - - (later)	CKD 217
CCW HEADER A PRESS LO S-11	1. (A) Possible loss of pump (B) Possible excessive flow. 2. (A) Verify by observing pump amps. (B) Header pressure (C) Isolated components	1. NONE 2. (A) If pump failure, line up and start standby pump (B) Refer to CCW Off-Normal Proc. 2-0310030	LO - 60 psig	PIS-14-8A - - - - - - - - - - - (later)	CKD 217
CCW NORMAL HDR ISOL HCV-14-8A/9 SIAS/OMSS S-21	1. (A) On SIAS valve fails to close (or) valve overridden to open. 2. (A) Verify by observing valve position lights (B) Pump amps (C) Header pressure	1. NONE 2. (A) Investigate failure of valve to close. (or) Isolation valve was overridden open.	(later)	CS-202-1,3 - - - - - - - - - - - RTGB-206	CKD 202
CCW PP 2A OVRLD/TRIP S-31	1. (A) CCW pump has tripped on overcurrent, (B) OR, CCW pump has lost control power, (C) OR, CCW pump has been racked out 2. (A) Pump amps zero (B) Breaker indicator lights - green on out	1. (A) Pump trips - stops 2. (A) Uloop and start standby pump (B) Refer to CCW Off-Normal Proc. 2-0310030 (C) Notify Electrical Department	Thermal Overload or Time Dependent Overcurrent trip	74-1, 74-2 - - - - - - - - - - - Bkr #2-20206 4160V Bus 2A3 in Cable Spreading Room	CKD 201
CCW PP 2A MOTOR BRG TEMP HI S-41	(ndicates motor bearing overheating 2. NONE	1. NONE 2. (A) Have operator locally check brg. lubrication, excessive noise. (B) Uloop and start standby pump	HI - 90° F	TIS-14-28-1A1, 1A2 - - - - - - - - - - - CCW Bldg. CCW pump 2A	CKD 219
CCW PP 2A BKR FAILURE / SS ISOL S-51	1. (A) The CCW pump has been given a start signal, but the pump has failed to start (B) OR the CCW pump has been isolated from the Control Room by NB/ISOL Switch 2. (A) Failure; pump indicate lights - green (B) ISOLATE; pump indicate lights - out.	1. If isolated; loss of control from Control Room 2. (A) Investigate breaker failure locally, contact Electrical Dept. for assistance. (B) Return NB/ISOL switch to "Normal" if applicable.	(Later)	74-3, SS/ISOL - - - - - - - - - - - Bkr #2-20306 4160V-Bus2A3 and NB/ISOL switch in cable spread room	CKD 201

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL S VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
CCW HEADER B FLO HI/LO S-2	1. (A) Indicates excessive or low flow 2. (A) Verify by observing pump amps. (B) Header pressure (C) Isolated components	1. NONE 2. (A) If low, start standby pump and investigate (B) If HI, check for isolated components (C) Refer to CCW Off-Normal #2-0310030	HI – 9500 GPM LO – 4000 GPM	FIS-14-1B (later)	OAD 218
CCW HEADER B PRESS LO S-12	1. (A) Possible loss of pump (B) Possible excessive flow 2. (A) Verify by observing pump amps (B) Header pressure (C) Isolated components	1. NONE 2. (A) If pump failure, lineup and start standby pump (B) Refer to CCW Off-Normal Proc #2-0310030	LO – 60 psig	FIS-14-8B (later)	OAD 218
CCW NORMAL HDR ISOL HCV-14-8B/D SIAS/OVRRD S-22	1. (A) On SIAS valve fails to close (or) valve overridden to open. 2. (A) Verify by observing valve position lights. (B) Pump amps (C) Header pressure	1. NONE 2. (A) Investigate failure of valve to close. (or) reason valve was overridden open.	(later)	GS-202-2,4 KRRB-206	OAD 202
CCW PP 2B OVRLD/TRIP S-3	1. (A) CCW pump has tripped on overcurrent (B) OR, CCW pump has lost control power, (C) OR, CCW pump has been racked out 2. (A) Pump amps zero (B) Breaker indicator lights – green on out	1. (A) Pump trips – stops 2. (A) Lineup and start standby pump (B) Refer to CCW Off-Normal Proc 2-0310030 (C) Notify Electrical Department	Thermal Overload or Time Dependent overcurrent trip	74-1, 74-2 Bkr #2-20406 4160V-Bus 2B3 in Cable Spreading Room	OAD 205
CCW PP 2B MOTOR BRG TEMP HI S-4	1. Indicates motor bearing overheating 2. NONE	1. NONE 2. (A) Have operator locally check brg. lubrication, excessive noise. (B) Lineup and start standby pump	HI –90° F	TIS-14-29-2B1, 2B2 CCW Bldg. CCW pump 2B	OAD 219
CCW PP 2B BKR FAILURE/ SS ISOL S-52	1. (A) The CCW pump has been given a start signal, but the pump has failed to start. (B) OR the CCW pump has been isolated from the Control Room by NML/ISOL Switch 2. (A) Failure; pump indicate lights – green (B) ISOLATE; pump indicate lights – out	1. If Isolate; loss of control from Control Room 2. (A) Investigate breaker failure locally, contact Electrical Dept. for assistance (B) Return NML/ISOL switch to "Normal" if applicable.	(later)	74-3, SS/ISOL Bkr #2-20406 4160V – Bus 2B3 and NML/ISOL switch in Cable Spreading Room.	OAD 205

ANNUNCIATOR PANEL S VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PYRAMIDS TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCW HX 2A HOT FLO LO S-3	1. Low flow of HOT to CCW HX exchange 2A 2. (A) Verify by observing HOT 2A pump amps (B) HOT Header A press. (C) Check temperature indicator on CCW outlet on RTGB 206	1. NONE 2. (A) Check 2A HOT pump running, if not start standby pump (B) Check strainer D.P. (C) Check HCV-14-4A for proper operation (D) Refer to HOT Off-Normal Proc #2-0640030	LO - 7500 GPM	FIS-2[illegible] 9A - - - - - - - - - - - - CCW Bldg; outlet CCW HX 2A	OMD 217
CCW HX A/B TEMP HI S-13	1. High temperature in CCW headers 2. Read TR-25-A/2B point 17 on HVAC Control Panel	1. NONE 2. (A) Have N. O. check HOT flow (B) Strainer D.P. (C) Check proper operation of HCV-14-4A/4B (D) Refer to HOT Off-Normal #2-0640030 and CCW Off-Normal #2-0380030	HI - 150° F	TE-14-3A, 3B TR-25-2A Point 17 TR-25-2B Point 17 - - - - - - - - - - - - CCW Bldg. T.R. on HVAC Control Panel	OMD's 478 479
S/D HX 2A CCW FLO HI/LO S-23	1. Excessive or low flow 2. Check FIS-14-10A on RTGB-206	1. NONE 2. (A) Check CCW for proper operation (B) Check for proper valve lineup (C) Refer to CCW Off-Normal Proc 2-0380030	HI - 5300 GPM LO - 3850 GPM	FIS-14-10A - - - - - - - - - - - - S/D Cooling HX Room 2A, RAB	OMD 217
CCW PP 2C OVRLD/TRIP S-33	1. (A) CCW pump has tripped on overcurrent, (B) OR, CCW pump has lost control power, (C) OR, CCW pump has been racked out 2. (A) Pump amps zero (B) Breaker indicator lights - green on out	1. Pump trips - stops 2. (A) Lineup and start standby pump (B) Refer to CCW Off-Normal Proc 2-0380030 (C) Notify Electrical Department	Thermal Overload or Time Dependent over-current trip	74-1, 74-2 - - - - - - - - - - - - Bkr 2-20502 4160V-Bus 2AB Cable Spreading Rm.	OMD 209
CCW PP 2C MOTOR BRG TEMP HI S-43	1. Indicates motor bearing overheating 2. NONE	1. NONE 2. (A) Have operator locally check brg. lubrication, excessive noise.	90° F	TIS-14-29-1C1, 1C2 - - - - - - - - - - - - CCW Bldg 2C CCW pump	OMD 219
CCW PP 2C BKR FAILURE/ SS ISOL S-53	1. (A) The CCW pump has been given a start signal but the pump has failed to start (B) OR, the CCW pump has been isolated from the Control Room by NML/ISOL switch 2. (A) Failure; pump indicate light - given (B) Isolate; pump indicate lights - out	1. IF ISOLATE; loss of control from Control Room 2. (A) Investigate breaker failure locally, contact Electrical Dept. (B) Return NML/ISOL switch to "NORMAL" if applicable	Fault in Bkr NORM/ISOL switch in Isolate	74-3, SS/ISOL - - - - - - - - - - - - Bkr 2-20502 4160V-Bus 2AB and NML/ISOL switch in Cable Spreading Rm.	OMD 209

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ANNUNCIATOR PANEL S VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGINAL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK S-4	BLANK			- - - - - - - - - - -	
BLANK S-14	BLANK			- - - - - - - - - - -	
BLANK S-24	BLANK			- - - - - - - - - - -	
BLANK S-34	BLANK			- - - - - - - - - - -	
CONT SEISMIC TRIGGER ACTUATION S-44	1. Unit 1 Seismic trigger has actuated, also indicating a Seismic event has occurred at St. Lucie 2. NONE	1. NONE 2. Refer to Tech Specs, Instrumentation	Alarms at 90% OBE	74-2 - - - - - - - - - - - Unit 1 Containment	GD 1209
CONTAINMENT TRIAXIAL ACCLR ACTUATION S-54	1. Unit 1 Triaxial Accelerograph has actuated, also indicating a Seismic event has occurred at St. Lucie Unit 2 2. NONE	1. NONE 2. Refer to Tech Specs, Instrumentation	Alarms at .01G vertical	74-1 - - - - - - - - - - - Unit 1 Containment	GD 1209

ANNUNCIATOR PANEL 5 VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PLANT/PROCESS TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
CCW HX 2B HI FLO LO S-5	1. Low flow of ICW to HT Exchanger 2B 2. (A) Verify by observing ICW 2B pump amps (B) ICW header B press. (C) Check temp. indicator on CCW outlet on RTGB-206	1. NONE 2. (A) Check 2B ICW pump running, if not start (B) Check strainer D.P. (C) Check TCV-14-48 for proper operation (D) Refer to ICW Off-Normal Proc 2-0640030	LO – 7500 GPM	FIS-21-9B - - - - - - - - - - - - CCW Bldg., Outlet HX 2B	OAD 218
FUEL POOL HX CCW FLO HI/LO S-15	1. (A) Excessive or low CCW flow to the fuel pool (B) On SIAS CCW flow is isolated 2. Check FIS-14-2 on RTGB-206	1. NONE 2. (A) If not SIAS, verify MV-14-17/19 open or open MV-14-18/20. (B) If Head up to B header shift to A Header	HI – 3700 GPM LO – 2950 GPM	FIS-14-2 - - - - - - - - - - - - Fuel Handling Bldg. at at HT Exch. Indicates on RTGB-206.	OAD 217
S/D HX 2B CCW FLO HI/LO S-25	1. Excessive or low CCW flow to the S/D HX 2B. 2. Check FIS-14-10A	1. NONE 2. (A) Check CCW for proper operator (B) Check for proper valve lineup (C) Refer to CCW Off-Normal #2-0310030	HI – 5300 GPM LO – 3850 GPM	FIS-14-10B - - - - - - - - - - - - S/D cooling HX ROOM 2B RAB Indicates on RTGB-206	OAD 218
LETDOWN HX CCW FLO HI/LO S-35	1. Excessive or low CCW flow to the letdown HX. 2. (A) Check FIS-14-6 on RTGB-206 (B) Check TIC-2224 on RTGB-205 for increase of temperature.	1. NONE 2. (A) Check for proper operation of TCV-2223 (B) OR, loss of inst. air. (C) Refer to CCW Off-Normal #2-0310030	HI – 4100 GPM LO – 3850 GPM	FIS-14-6 - - - - - - - - - - - - Letdown HX Room RAB, Indicates on RTGB-206	OAD 218
BLANK S-45	BLANK			- - - - - - - - - - - -	
CCW DISTR HDR MV-14-1/2 OVERLOAD/ SS ISOL S-55	1. (A) Indicates loss of control power (B) OR, breaker trip (C) OR, NML/ISOL switch in Isolate 2. (A) Check CCW header press/flow indicators (B) Check valve position indicator lights	1. NONE 2. (A) Investigate breaker failure locally, contact Electrical Dept. (B) Return NML/ISOL switch to normal, if applicable	Thermal Overload, (or) NML/ISOL switch in	(74,SS/ISOL) / 204 (74,SS/ISOL) / 208 - - - - - - - - - - - - 480V-MCC2AB Bkr 2-42418 Bkr #2-42419	OAD's 204 208

ANNUNCIATOR PANEL S VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK S-6	BLANK			- - - - - - - - - - -	
BRKR: 125 VDC 4160V - 480V AB BUSES MISALGN S-16	1. All AB buses are not aligned from the same bus (A or B) 2. KRUB-201	1. NONE 2. Align all AB buses to be fed from either A or B BUS	Bus tie Position: 125 VDC AB 4160 V AB 480 V AB	52, 72AX, 72BX - - - - - - - - - - - Isolation cabinets SA, SB in Cable Spreading Room	OAD 978
CCW PP 2C VALVES MISALIGNED S-26	1. Pump suction and discharge valve alignment inconsistent with pump power source. 2. Check valve position lights on KRUB-206.	1. NONE 2. Refer to Tech Specs for allowable variances in misalignment and restore alignment as appropriate.	NONE	52/MCC, 33 - - - - - - - - - - - 4.16 KV-Bus 2AB Cub. 4,5. Isolation Cab. SA8 in Cable Spreading Room	OAD 2.4 208
CCW COOLERS CCW FLO LO S-36	1.(A) Indicates possible loss of CCW flow to coolers (B) OR, N Heater isolated 2.(A) Check TR-25-3 points 7,8 for increase in temp. (B) "N" Heater valve position indication	1. NONE 2.(A) Check for possible "N" heater isolation (B) Check for possible HBR rupture or valve misalignment	LO 450 GPM	FTS-14-13 - - - - - - - - - - - Rx Containment Bldg. CCW Fan Coolers	OAD-218
RCP CW ISOL HCV-14-1/2/6/7 SIAS (WOO) S-46	1. Indicates valves not closed w/SIAS signal present 2. Check valve position lights on KRUB-206	1. NONE 2. If SIAS; refer to applicable Off-Normal Emergency Procedure for opening criteria	HCV-14-1 OR HCV-14-2 OR HCV-14-3 OR HCV-14-4 Open w/SIAS Signal	CS-212-1, 2, 3, 4 94-1, 2, 3, 4 - - - - - - - - - - - (LATER)	OAD-212
CCW SURGE HDR HV-14-3/4 (WOO/WW/ SS ISOL S-56	1.(A) Indicates loss of control power (B) OR, Breaker trip (C) OR, HDR4/ISOL SW in ISOLATE 2.(A) Check CCW Header Press/Flow indicators (B) Check valve position indicator lights	1. NONE 2.(A) Investigate BRK failure locally, contact Electrical Dept. (B) Return HDR4/ISOL SW to NORM, if applic.	Thermal Overload OR HDR4/ISOL SWITCH in ISOLATE	(74,SS/ISOL) / 203 (74,SS/ISOL) / 207 - - - - - - - - - - - 480V-MCC 2AB BRK 2-42423 BRK 2-42424	OAD-203 OAD-207

/K2

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL S VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CSAS CHANNEL A/B ACTUATION S-7	1. Containment Spray actuation 2. CSAS channel A/B indicating light indicates actuation	1. 2/4 logic CSAS initiated coincident with SIAS 2. Check auto actions performed. If not check then initiate. Refer to EP 2-010042	10 psig and SIAS Signal present	CSAS-A, CSAS-B - - - - - - - - - - - - (later)	O40 302 303
CONTAINMENT PRESS HI CSAS MEAS CHNL TRIP S-17	1. High pressure in containment one or more channels 2. Containment pressure indication on RTGB-206 indicates high pressure.	1. 2/4 logic CSAS initiated coincident with SIAS 2. (A) Check redundant channels (B) If channel failed, bypass affected channel.	10 psig and SIAS Signal Present	CSAS-MA, MB, MC, MD - - - - - - - - - - - - (later)	O40 295
CNMT SPRAY HEADER A PRESS LO S-27	1. Low pressure in CS Header A 2. Indicated low press PIS-07-3A on RTGB-206	1. NONE 2. (A) Check status CS pump A (B) Check proper valve lineup on RTGB-206	LO - 100 psig	PIS-07-3A - - - - - - - - - - - - Outside S/D HX A Room, RAB indicates on RTGB-206	O40 293
CNMT SPRAY FCV-07-1A FAIL TO OPEN S-37	1. Valve not open within 15 seconds of CS Actuation Signal. 2. (A) FCV-07-1A indicates closed on RTGB-206 (B) No flow in 2A CS header	1. NONE 2. (A) Open FCV-07-1A, if required. (B) If unable to open notify I & C	15 Second time delay after CS Actuation Signal	94-1, 3XI - - - - - - - - - - - - RTGB-206	O40 289
CNMT SPRAY PP 2A OVLD/TRIP S-47	1. (A) CS pump has tripped on overcurrent (B) OR, CS pump has lost control power, (C) OR, CS pump has been racked out 2. (A) CS pump amps zero (B) Breaker Indicator lights - green or out	1. Pump Trips - STOPS 2. (A) Start CS pump 2B if applicable (B) Notify Electrical Dept.	Thermal Overload (or) Time Dependent over-current trip	74-1, 74-2 - - - - - - - - - - - - 4160V-Bus 2A3 Breaker #-20203 in Cable Spreading Room	O40 287
CNMT SPRAY PP 2A FAILURE CSAS CMND S-57	1.(A) CS pump does not start within 5 sec. (B) OR, BRK failure (C) OR, CS pump switch in STOP 2.(A) CS pump amps zero (B) CS HDR press/flow low or zero	1. NONE 2.(A) Investigate BRK failure locally, contact Electrical Dept. for assistance (B) Return CS pump to Auto as required	CS Pump Does not Start 5 Sec. after CSAS SIGNAL	74-3, 74-4, CS 4160V-Bus 2A3 BRK 2-20303 in Cable Spreading Room	O40-287

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 5 VERTICAL COLUMN 8

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK S-8	BLANK			- - - - - - - - - - -	
BLANK S-18	BLANK			- - - - - - - - - - -	
CNTMT SPRAY HEADER B PRESS LO S-28	1. Low press in CS Hdr B 2. Indicated low press PIS-07-3B on RTGB-206	1. NONE 2.(A) Check status CS pump B (B) Check proper valve lineup on RTGB-206	LO 100 PSIG	PIS-07-3B Outside S/D HX B Rm RAB Indicates on RTGB-206	OAD-294
CNTMT SPRAY FCV-07-1B FAIL TO OPEN S-38	1. Valve not open within 15 seconds of CS actuation signal 2. (A) FCV-07-1B indicates closed on RTGB-206 (B) No flow in 2B CS Header	1. NONE 2. (A) Open FCV-07-1B; if required (B) If unable to open notify I & C	15 second Time delay after CS actuation signal	94-2, 3302 - - - - - - - - - - - RTGB-206	OAD 289
CNTMT SPRAY PP 2B OVRLD/TRIP S-48	1. (A) CS pump has tripped on overcurrent, (B) OR, CS pump has lost control power, (C) OR, CS pump has been racked out 2. (A) CS pump amps zero (B) Breaker indicator lights - green on out	1. Pump trips - STOPS 2. (A) Start Cs pump 2A, if applicable (B) Notify Electrical Dept	Thermal Overload (or) Time Dependent over-	74-1, 74-2 - - - - - - - - - - - 4160V-Bus 2B3 Breaker #2-20407 in Cable Spreading Room	OAD 290
CNTMT SPRAY PP 2B FAILURE/ CSAS (MOD) S-58	1. (A) CS pump does not start within 5 sec (B) OR, Breaker Failure, (C) OR, CS pump switch in STOP 2. (A) CS pump amps zero (B) CS header press/flow low or zero	1. NONE 2. (A) Investigate Breaker Failure locally, contact Electrical Dept. for assistance (B) Return CS pump to auto as required	CS pump doesn't start 5 sec after CSAS signal	74-3, 74-4, CS - - - - - - - - - - - 4160V-Bus 2A3 Breaker #2-20407 in Cable Spreading Room	OAD 290

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL S VERTICAL COLUMN 9

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAS CHANNEL A/B ACTUATION S-9	1. Safety injection recirculation mode 2. RAS channel A/B indicating light indicates actuation	1. (A) LPSI pumps stop (B) Containment sump outlet valves open (C) RWT outlet valve close (D) S.I. pump mini-recirc valves close to RWT. 2. Check auto actuations have taken place IF NOT - INITIATE	5'8" RWT Level	RAS-A, RAS-B --- (later)	OAD's 302 303
RWT LVL LO RAS MEAS CHN. TRIP S-19	1. Low level in RWT one or more channels 2. RWT level indicators on RTGB-206	1. 2/4 Logic - RAS initiated 2. (A) Check RWT level (B) Verify RAS actuation	5'8" RWT Level	RAS-HA, HB, HC, HD --- (later)	OAD 295
RWT LEVEL HI/LO S-29	1. RWT Hi or Low level 2. RWT level on RTGB-206	1. NONE 2. (A) High - DRAIN to normal level (B) LO - RAISE level to normal level, Investigate LO level	HI - 37'6" Lo - 29'7"	LIS 07-1 --- at RWT	OAD 296
BLANK S-39	BLANK			---	
RWT MV-07-1A OPEN/CLOSE/ RAS FAIL TO CLOSE S-49	1. (A) RWT outlet not fully open (B) RWT outlet not fully closed after 100 seconds on RAS (C) Indicates breaker trip 2. Valve position indication on RTGB-206	1. Valve will fail as is 2. (A) If Bkr fault investigate overload (B) Try to close from RTGB-206 or locally if RAS present. (C) If no RAS open	Thermal Overload (or) 100 sec. after RAS	74, 33 RASX --- 480V-MCC 2A6 Breaker #2-41362 Cable Spreading Room	OAD 297
CONT SUMP MV-7-2A OPEN/CLOSE/RAS FAIL TO OPEN S-59	1. (A) Containment sump outlet not fully closed (B) Containment sump outlet not fully open within 40 seconds on RAS (C) Indicates breaker trip 2. Valve position indication on RTGB 206	1. Valve will fail as is. 2. (A) If Bkr fault investigate overload (B) If RAS present, open from RTGB-206 or locally (C) If no RAS, then close	Thermal Overload (or) 40 Sec After RAS	74, 33, RASX --- 480V-MCC2A6 Breaker 2-41359 Cable Spreading Room	OAD 299

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL S VERTICAL COLUMN 10

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
HYDRAZINE TK LEVEL LO S-10	1. Lo level Hydrazine tank 2. Hydrazine tank level on RTGB-206	1. NONE 2. (A) Notify Chemistry (B) Check for leaks	LO - 25"	LIS-07-9 - - - - - - - - - - - - At Hydrazine tank RAB	OAD 306
HYDRAZINE TK LEVEL LO-LO S-20	1. Lo level Hydrazine tank 2. Hydrazine tank level on RTGB-206	1. Hydrazine pumps 2A/2B Stop 2. Notify Chemistry	LO-LO - 4"	LIS-07-9 - - - - - - - - - - - - At Hydrazine tank RAB	OAD 306
HYDRAZINE TK PRESS HI/LO S-30	1. HI or Low Hydrazine tank pressure 2. Hydrazine tank level on RTGB-206	1. HI - possible relief action 2. (A) Check for proper nitrogen reg operation (B) Stop any filling or vent in progress	HI - 15 psig LO - 7 psig	PDIS-07-7 - - - - - - - - - - - - At Hydrazine tank RAB	OAD 306
HYDRAZINE PP 2A/2B OVERLOAD S-40	1. 2A or 2B Hydrazine pumps overload 2. NONE	1. Pump Stops 2. (A) Investigate breaker failure - notify Electrical Dept.	Thermal Overload	74 - - - - - - - - - - - - 480V-MCC 2A 5 -MCC 2B 5 Cable Spreading Room	OAD 306
HAT-HV-07-1B OVRLD/CLOSE/ RAS FAIL TO CLOSE S-50	1. (A) HAT outlet not fully open (B) HAT outlet not fully closed after 100 sec on RAS (C) Indicates Bkr trip 2. Valve position indication on RTGB-206	1. Valve will fail as is 2. (A) If Bkr fault investigate overload. (B) Try to close from RTGB-206 or locally if RAS present (C) If no RAS, then open	Thermal Overload; (or) 100 sec After RAS	74, 33, RASX - - - - - - - - - - - - 480V-MCC 2B6 Breaker 2-42158 Cable Spreading Room	OAD 298
CONTMT SUMP MV-7-2B OPEN/OVRLD/RAS FAIL TO OPEN S-60	1. (A) Containment sump outlet not fully closed (B) Containment sump outlet no fully open within 40 sec on RAS (C) Indicates Bkr trip 2. Valve position indication on RTGB-206	1. Valve will fail as is 2. (A) If Bkr fault investigate overload (B) If RAS present, open from RTGB-206 or locally (C) If no RAS, then close	Thermal Overload (or) 40 sec after	74, 33, RAS X - - - - - - - - - - - - 480V-MCC 2B6 Breaker 2-42159 Cable Spreading Room	OAD 300

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL T VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT VACUUM HI T-1	1. Differential press between Cont. & Shield Bldg. annulus has reached setpoint on PDIS-25-11A, 11B 2.(A) Cont. to annulus D/P at HVCB (PDIS-25-1A, B) (B) Cont. vacuum BRK VLVs (FCV-25-7A, 7B) open	1. Cont. vacuum BRK VLVs should open at (LATER) 2. Secure Cont. purge (if operating) insure Cont. vacuum BRK are open	-11.5" WG (Increasing Vacuum)	63 X A1, 63 X B1 PDIS-25-11A, 11B D/P Ind. Switches (LATER)	GAD-482
CNTMT VAC RLF FCV-25-7 ACTUM AIR PRESS LO T-7	1. Air accumulator press for vacuum relief valve FCV-25-7 low 2. NONE	1. NONE 2. Return air press in air accumulator to normal by restoring inst. air system or checking valve linkup	To PSIG Decreasing	PS-25-12A Press Switch (LATER)	GAD-529
CNTMT PURGE 2HVE-8A FLO LO/OVRLD T-13	1.(A) Low flow thru "A" Cont. purge fan (B) The "A" Cont. purge fan has tripped (1) The Control power fuse has blown or, (2) BRK opened on thermal ovrld or O.C. trip or (3) BRK is opened at MCC-2A5	1. NONE 2.(A) Start alternate cont. purge fan or verify inlet damper to "A" cont. purge fan open (B) Check BRK locally (C) Call Elec. Dept. for assistance	Therm. OVRLD OR Time Dependent O.C. Trip	74, A10A Thermal OVRLD and Time Dependent trip coil Located in BRK No. 2-41272/MCC-2A5	GAD-509 PD & MD Sheet 31
BLANK T-19	BLANK			- - - - - - - - - - -	

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL T VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK T-2	BLANK			- - - - - - - - - - -	
CNMT VAC RLF FCV-25-8 ACTIN AIR PRESS LO T-8	1. Air accumulator pressure for vacuum relief valve FCV-25-8 low 2. NONE	1. NONE 2. Return air pressure in air accumulator to normal, by restoring instrument air system or	70 psig decreasing	PS-25-123 Press. Switch - - - - - - - - - - - (later)	GAD 529
CNMT PURGE SYS-8B FLO LO/OVRLD T-14	1. (A) Low flow through "B" containment purge fan (B) The "B" containment purge fan has tripped due to: (1) The control power fuse has blown or, (2) Trip on overcurrent or thermal overload or, (3) Breaker has been opened at MCC-2B5	1. NONE 2. (A) Start alternate cont. purge fan, or verify inlet damper to "B" cnt. purge fan open (B) Call Elect. Dept. for assistance if necessary	Thermal Overloads or time dependent O.C. trip	74, 80B - - - - - - - - - - - Thermal overloads and time dependent O.C. trips are in breaker #2-42073/MCC-2B5	GAD 510 PID & MD 3B
BLANK T-20	BLANK			- - - - - - - - - - -	

ST. LUCIE UNIT 2
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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL T VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH MODIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR COOLER CCW VLVS SS ISOL T-3	1. Control of HV-14-69 and/or HV-14-13 has been isolated from the control room by NORM/ISOL switch 2. Loss of control switch lights	1. Loss of control from control room 2. Return NORM/ISOL switch to "NORMAL" if applicable, in Cable Spreading Room	NML/ISOL switch in "Isolate" one or both	SS/ISOL Switches #1 and #7 --- Cable Spreading Room Isolate Panel	CAD 220 224
CONTAINMENT AIR COOLER A/B THMP HI T-9	1. High temperature on A and/or B containment air cooler(s) either before or after cooling coil(s) 2. (A) Temperature on TR-25-1A on IMCB (pts. 1-4) increasing (B) Loss of CCW flow to coolers	1. NONE 2. Insure sufficient cooling water being supplied to fan cooling coils	110° F (increasing)	TR-25-1A Points 1, 2, 3, 4 ---	CAD 483
CONTAINMENT AIR COOLER C/D THMP HI T-15	1. High temperature on C and/or D containment air cooler(s) either before or after cooling coil(s) 2. (A) Temperature on TR-25-1B on IMCB (pts. 1-4) increasing (B) Loss of CCW flow to coolers	1. NONE 2. Insure sufficient cooling water being supplied to fan cooling coils	110° F (increasing)	TR-25-1B Points 1, 2, 3, 4 ---	CAD 1137
BLANK T-21	BLANK			---	

ANNUNCIATOR PANEL T VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR COOLER A CCW FLO LO T-4	1. CCW supply flow to "A" containment cooler is low 2. Verify proper CCW valve alignment, pump(s) running and T-3 not on.	1. NONE 2. Return normal CCW flow to cont. air cooler, otherwise secure (if practical)	(later)	FIS-14-12A Flow ind. switch	OMD 218
CONTAINMENT AIR COOLER A OVRLD/TRIP T-10	1. The "A" containment air cooler has tripped due to: (A) Control fuse is blown or, (B) Breaker has tripped on overcurrent (C) Breaker is open at MCC-2A9 2. (A) Air cooler "A" indicating lights are out (B) Increasing air temperature as indicated by recorder TR-25-1A	1. NONE 2. (A) Start non-running containment air cooler (if applicable) (B) Call Electrical Dept. for assistance	Time dependent O.C. trip or instantaneous trip at 2250 amps	T, t, 74F, 74 Time dependent O.C. trip is in Breaker: #2-4260I/MCC-2A9	OMD 285 PD & MD Sh.102
CONTAINMENT AIR COOLER A AIR FLOW LO/ VIBRATION HI T-16	1.(A) Low air flow through air cooler or, (B) High vibration on fan motor 2.(A) Temp increasing n air cooler outlet (B) Air cooler not running (C) Increasing vacuum in containment (if applicable)	1. NONE 2. Start non-operating cooler and secure alarming cooler (if practical)	(LATER)	FS-25-2A, VIB. SW, 4X flow switch	OMD-285
CONTAINMENT AIR COOLER A SIAS OVRD CS STRT/SS ISOL T-22	1.(A) Control Room SW for "A" Cont. Cooler in "STRT" position with SIAS signal present OR (B) NORM/ISOL SW in "ISOLATE" position 2. Indicating lights for "A" Cont. Cooler not on	1. NONE 2.(A) Return CS to auto (or start if running of cooler is required). (B) Return NORM/ISOL switch to NORMAL (if applicable)	Control SW in "STRT" or NORM/ISOL SW in ISOLATE	42XS, SIAS Y, CS/285, SS/285	OMD-285

ST. LUCIE UNIT 2
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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL T VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR COOLER B CCW FLO LO T-5	1. CCW supply flow to "B" containment cooler is low 2. Verify proper CCW valve alignment, pump(s) running and T-3 not on.	1. NONE 2. Return normal CCW flow to cont. air cooler, otherwise secure (if practical)	(later)	FIS-14-12B Flow ind. switch	C4D 218
CONTAINMENT AIR COOLER B OVRLD/TRIP T-11	1. The "B" containment air cooler has tripped due to: (A) Control fuse is blown or, (B) Breaker has tripped on overcurrent (C) Breaker is open at MCC-2A9 2. (A) Air cooler "B" indicating lights are out (B) Increasing air temperature as indicated by recorder TR-25-1A	1. NONE 2. (A) Start non-running containment air cooler (if applicable) (B) Call Electrical Dept. for assistance	Time dependent O.C. trip or instantaneous trip at 2250 amps	r, t, 74P, 74a Time dependent O.C. trip is in Breaker: #2-42602/MCC-2A9	C4D 286 PD & MD Sh. 102
CONTAINMENT AIR COOLER B AIR FLOW LO/ VIBRATION HI T-17	1.(A) Low air flow through air cooler or, (B) High vibration on fan motor 2.(A) Temp increasing a air cooler outlet (B) Air cooler not running (C) Decreasing vacuum in containment (if applicable)	1. NONE 2. Start non-operating cooler and secure alarming cooler (if practical)	(LATER)	FS-25-2B, VIB. SW, 4X flow switch	C4D-286
CONTAINMENT AIR COOLER B SIAS C4D0/ CS STOP/SS ISOL T-23	1.(A) Control Room SW for "B" Cont. Cooler in "STOP" position with SIAS signal present OR (B) HOA/ISOL SW in "ISOLATE" position 2. Indicating lights for "B" Cont. Cooler not on	1. NONE 2.(A) Return CS to auto (or start if running of cooler is required). (B) Return HOA/ISOL switch to NORMAL (if applicable)	N/A	42SX, SIAS Y, CS/286, SS/286	C4D-286

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL T VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR COOLER C CCW FLO LO T-6	1. CCW supply flow to "C" containment cooler is low 2. Verify proper CCW valve alignment, pump(s) running and T-3 not on.	1. NONE 2. Return normal CCW flow to cont. air cooler, otherwise secure (if practical)	(later)	FIS-14-12C Flow ind. switch	CAD 218
CONTAINMENT AIR COOLER C OVHLD/TRIP T-12	1. The "C" containment air cooler has tripped due to: (A) Control fuse is blown or, (B) Breaker has tripped on overcurrent (C) Breaker is open at MCC-2A9 2. (A) Air cooler "C" indicating lights are out (B) Increasing air temperature as indicated by recorder TR-25-1A	1. NONE 2. (A) Start non-running containment air cooler (if applicable) (B) Call Electrical Dept. for assistance	Time dependent O.C. trip or instantaneous trip at 2250 amps	T, t, 74F, 74 Time dependent O.C. trip is in Breaker: #2-42601/MCC-2A9	CAD 304
CONTAINMENT AIR COOLER C AIR FLOW LO/ VIBRATION HI T-18	1.(A) Low air flow through air cooler or, (B) High vibration on fan motor 2.(A) Temp increasing n air cooler outlet (B) Air cooler not running (C) Decreasing vacuum in containment (if applicable)	1. NONE 2. Start non-operating cooler and secure alarming cooler (if practical)	(LATER)	FS-25-2A, VIB. SW, 4X flow switch	CAD-304
CONTAINMENT AIR COOLER C SIAS OVRD/ CS STOP/SS ISOL T-26	1.(A) Control Room SW for "C" Cont. Cooler in "STOP" position with SIAS signal present OR (B) NORM/ISOL SW in "ISOLATE" position 2. Indicating lights for "C" Cont. Cooler not on	1. NONE 2.(A) Return CS to auto (or start if running of cooler is required). (B) Return NORM/ISOL switch to NORMAL (if applicable)	N/A	42XS, SIAS Y, CS/285, SS/285	CAD-384

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 1

WINDOW TYPE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR CLR D CCW FLO LO D-1	1. Containment cooling water supply flow to "D" containment cooler is low. 2. Verify proper CCW valve alignment, pump(s) running	1. NONE 2. Return normal CCW flow to cont. air cooler otherwise secure if practical.	(later)	FIS-14-12D Flow ind. switch --- Pipe Penetration Room	OAD 218
CONTAINMENT AIR COOLER D OVRLD/TRIP D-7	1. The "D" containment air cooler has tripped on overload 2. (A) "C" cont. air cooler indicating lights out (B) Increasing temp on containment air temp recorder	1. NONE 2. (A) Start non-running containment air cooler if applicable. (B) Investigate cause for fan motor overload	(later)	r, t, 74P, 74S overcurrent trip --- Breaker 2-4270Z 259 MCC	OAD 305
CONTAINMENT AIR CLR D AIR FLW LO / VIBRATION HI D-13	1. (A) Low air flow through air cooler, or (B) High vibration on fan motor 2. (A) Temp increasing on air cooler outlet (B) Air cooler not running (C) Decreasing vacuum in containment if applicable	1. NONE 2. Start non-operating cooler and secure alarming cooler if practical	(later)	PS-25-2D VIB SW, 4X Flow Switch ---	OAD 305
CONTAINMENT AIR CLR D SIAS OVRD / SS 1B4. D-19	1. (A) Control Room switch for "D" containment cooler in "STOP" position with SIAS signal present or (B) Normal/Isolate switch in Isolate position 2. Indicating lights for "D" containment cooler not on	1. NONE 2. (A) Return CS to auto or start if running of cooler is required (B) Return Norm/Isol switch to Normal if applicable	Not Applicable	42XS SIAS Y, C2/305, SS 305 --- Breaker 2-4270Z 289 MCC	OAD 305

2

ANNUNCIATOR PANEL U VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT PROBLEM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK U-2	BLANK				
BLANK U-8	BLANK				
BLANK U-14	BLANK				
BLANK U-20	BLANK				

ANNUNCIATOR PANEL H VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX SUPPORT CHANNEL A TEMP HI H-3	1. High temperature in Rx support area 2. (A) Containment temperature increasing (B) Containment cooler(s) off (C Rx support cooling fan(s) off	1. NONE 2. (A) Start non-operating Rx support cooling fan (B) Start containment cooler(s) - if practical	105° F (increasing)	TR-25-1A Points 6, 7, 8	CAD 423
RX SUPPORT CLG ZONE-3A FLO LO/OVRLD H-9	1. (A) Low flow through fan measured at FS-25-5A (B) Fan motor is overloaded 2. (A) Indicating lights out (B) Reactor temperature increasing	1. NONE 2. (A) Start non-operating Rx support cooling fan (B) Investigate cause for overload (C) Verify dampers in flow pan open	(later)	FS-25-5A, 74, 2	CAD 524
RX CAVITY CHANNEL A TEMP HI H-15	1. High temperature in Rx cavity area 2. (A) Containment temperature increasing (B) Containment cooler(s) off (C) Rx cavity cooling fan(s) off	1. NONE 2. (A) Start non-operating Rx cavity cooling fan (B) Start containment cooler(s) if practical	150° F (increasing)	TR-25-1A Point 5	CAD 483
RX CAVITY CLG ZONE-2A FLO LO/OVRLD H-21	1. (A) Low flow through fan measured at FS-25-7A (B) Fan motor is overloaded 2. (A) Indicating lights out (B) Reactor cavity temperature increasing	1. NONE 2. (A) Start non-operating Rx cavity cooling fan. (B) Investigate cause for overload (C) Verify dampers in flow path open	(later)	FS-25-7A, 74.2	CAD 522

ANNUNCIATOR PANEL 11 VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX SUPPORT CHANNEL B TEMP HI 11-4	1. High temperature in RX support area 2. (A) Containment temperature increasing (B) Containment cooler(s) off (C) Rx support cooling fan(s) off	1. NONE 2. (A) Start non-operating Rx support cooling fan (B) Start containment cooler(s) if practical	150° F (increasing)	TR-25-1B Points 6, 7, 8 - - - - - - - - - - - -	OAP 1137
RX SUPPORT CLG ZONE-3B FLO LO/UNRLD 11-10	1. (A) Low flow through fan monitored at FS-25-5B (B) Fan motor is overloaded 2. (A) Indicating lights out (B) Containment temperatures increasing	1. NONE 2. (A) Start non-operating Rx support cooling fan (B) Investigate cause for overload (C) Verify dampers in flow path open	(later)	FS-25-5B, 7A, 2 - - - - - - - - - - - -	OAP 525
RX CAVITY CHANNEL B TEMP HI 11-16	1. High temperature in Rx cavity area 2. (A) Containment temperature increasing (B) Containment cooler(s) off (C) Rx cavity cooling fan(s) off	1. NONE 2. (A) Start non-operating Rx cavity cooling fan (B) Start containment cooler(s) if practical	150° F (increasing)	TR-25-1B Point 5 - - - - - - - - - - - -	OAP 1137
RX CAVITY CLG ZONE-2B FLO LO/UNRLD 11-22	1. (A) Low flow through fan monitored at FS-25-7B (B) Fan motor is overloaded 2. (A) Indicating lights out (B) Containment temperature increasing	1. NONE 2. (A) Start non-operating Rx cavity cooling fan (B) Investigate cause for overload	(later)	FS-25-7B, 7A, 2 - - - - - - - - - - - -	OAP 523

ANNUNCIATOR PANEL 11 VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SHIELD BUILDING CHARCOAL ABSORBER VENT SYSTEM B HIGH TEMPERATURE 11-5	1. High temperature in charcoal absorber for "A" train shield building ventilation system 2. High temp on train down stream of charcoal absorber (TR-25-2A, Pt. 6)	1. NONE 2. Select alternate SBVS train and investigate cause for high temp.	200° F (Increasing)	TR-25-2A Points 2, 3, 4, 5	OAE 478
SHLD BLDG TO OUTSIDE A D/P HI/LO 11-11	1. Diff press between shield bldg and atmos. outside control bund. 2. (A) PDIS-25-7A (B) Outside air intake valve position (FCV-25-11) (C) SBVS fan running ind.	1. NONE 2. Insure proper valve position of outside air intake valves, dampers in SBVS "A" train	+5" WG (HI) -4" WG (LO)	PDIS-25-7A	OAD 482
SHLD BLDG HEPA FLT VENT A D/P HI 11-17	1. Diff. pressure across HEPA prefilter in SBVS "A" train is high 2. PDIS-25-8A	1. NONE 2. (A) Inspect HEP prefilter locally and if necessary replace (B) Verify proper damper position in train	(later)	PDIS-25-8A HVAC	OAD 1165
SHLD BLDG VENT-A HUMID HI 11-23	1. Moisture content of air in SBVS "A" train is high 2. Investigate humidity sensor locally	1. NONE 2. Verify heaters and filters operating properly in alarming train	(Later)	MIS-25-1	OAD 482

ANNUNCIATOR PANEL 8 VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SHIELD BUILDING CHARCOAL ABSORBER VENT SYSTEM B HIGH TEMPERATURE B-6	1. High temperature in charcoal absorber for "B" train shield building ventilation system. 2. High temp on train downstream if charcoal absorber (TR-25-2B, Pt. 6)	1. NONE 2. Select alternate SBVS train and investigate cause for high temp.	200° F (Increasing)	TR-25-2B Points 2, 3, 4, 5 - - - - - - - - - - - -	OAD 479
SHLD BLDG TO OUTSIDE B D/P HI/LO B-12	1. Diff press between shield bldg and atmos. outside control band 2. (A) PDS-25-7B (B) Outside air intake valve position (PCV-25-12) (C) SBVS fan running ind.	1. NONE 2. Insure proper valve position of outside air intake valves, dampers in SBVS "B" train	+5" WG (HI) -4" WG (LO)	PDIS-25-7B - - - - - - - - - - - -	OAD 482
SHLD BLDG HEPA FLTR VENT B /P HI B-18	1. Diff pressure across HEPA prefilter in SBVS "B" train is high 2. PDIS-25-8B	1. NONE 2. (A) Inspect HEPA prefilter locally and if necessary replace (B) Verify proper damper position in train	(later)	PDIS-25-8B - - - - - - - - - - - - HVAC	OAD 1165
SHLD BLDG VENT B HUMD HI B-24	1. Moisture content of air in SBVS "B" train is high 2. Investigate humidity sensor locally	1. NONE 2. Verify heaters and filters operating properly in alarming train	(later)	MIS-25-2 - - - - - - - - - - - -	OAD 482

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL V VERTICAL COLUMN 1

2

WINDOW TITLE	1. INDICATED CONDITION 2. COMMON ROOM INDICATION WHICH VERIFY OR PERSONNEL TASKED	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SBVS HTR COIL 2 HVE-6A1/6A2 FAILURE V-1	1. Main htr or space htr elements for SBVS "A" train not energized 2. Moisture build-up in "A" train SBVS	1. Heaters de-energize 2. (A) Investigate cause for loss of heater elements (B) Use the other SBVS train	(Later)	CR1, CR2, CR3 - - - - - - - - - - - Htr Control Panel	GAD 1150
SBVS HTR COIL 2 HVE-6B1/6B2 FAILURE V-7	1. Main htr or space htr elements for SBVS "B" train not energized 2. Moisture build-up in "B" train SBVS	1. Heaters de-energize 2. (A) Investigate cause for loss of heater elements (B) Use the other SBVS train	(Later)	CR1, CR2, CR3 - - - - - - - - - - - Htr Control Panel	GAD 1152
BLANK V-13	BLANK			- - - - - - - - - - -	
BLANK V-19	BLANK			- - - - - - - - - - -	

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL V VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SBVS 2 BVE-6A OVERLOAD/ SS ISOL V-2	1. Indicates that SBVS 2BVE-6A cannot be operated from Control Room due to: (A) NML/ISOL switch is in Isolate or (B) The breaker has tripped on overcurrent or overload, (C) Control fuse blown or bkr open at MCC-2A6 2. (A) Run status indicating lights are out (B) Exhaust flow on indicator FIS-25-20A1 drops to zero if fan tripped	1. SBVS-6B will auto start if exhaust fan 6A trips on fault, and fan 6B control switch is in AUTO 2. Verify fan 7B running, if necessary place its control switch in "Start"	Thermal Overload or O.C. Trip at 804 amps	74, SS/ISOL Isolation Switch on MCC-2A6 - - - - - - - - - - - - Thermal overloads and O.C. trip coils are in Brkr: 2-41343/MCC-2A6	GAD 513 PD & MD Sh. 36
SBVS 2BVE-6A FLO LO/ CIS (MOD) V-8	1. Indicates the following: (A) Low flow as measured by FS-25-20A1 (B) With CIS signal present, fan is secured 2. (A) Low flow as indicated on FIC-25-20A1 SBVS exhaust flow or, (B) Fan running indicator light is on with CIS signal present.	1. NONE 2. (A) Take switch back to start (if applicable) or investigate cause for low flow condition (B) If necessary, start fan 6B	LO flow - (later)	FIS-25-20A1, 42X,3X Flow indicator switch - - - - - - - - - - - - (later)	GAD 513
SHLD BLDG CLG AIR A FCV-25-11 OVERLOAD V-14	1. FCV-25-11 2. (A) FCV-25-11 indication lights (B) SBVS "A" train temperature, D/P	1. NONE 2. (A) Investigate cause for motor overload (B) Place other SBVS train in service if applicable	(later)	74 (later) - - - - - - - - - - - - 2-41354/MCC-2A6	GAD 1176 PD & MD Sh. 37A
SHLD BLDG ISOL FCV-25-32 OVERLOAD / VALVE CLOSED V-20	1. SBVS cont. iso. valve is closed and/or motor operator is overloaded. 2. (A) FCV-25-32 indication lights (B) ZDIS-25-7A	1. NONE 2. (A) Place other SBVS train in service if applicable (B) Investigate cause for valve closure	Valve 95% shut	74,33 Valve limit sw. - - - - - - - - - - - - 2-41349/MCC-2A6	GAD 1156 PD & MD Sh 36

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ANNUNCIATOR PANEL V VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SBVS 2 HVE-6B OVERLOAD / SS ISOL V-3	1. Indicates that SBVS 2HVE-6A cannot be operated from Control Room due to: (A) N-S/ISOL switch is in Isolate or (B) The breaker has tripped on overcurrent or overload (C) Control fuse blown or brkr open at MCC-2A6 2. (A) Run status indicating lights are out (B) Exhaust flow on indicator FIS-25-2081 drops to zero if fan tripped	1. SBVS-6A will auto start if exhaust fan 6B trips on fault and fan 6A control switch is in auto 2. Verify fan 6A running, if necessary place its cont-l switch in "Start"	Thermal Overload or O.C. trip at 804 amps	74, SS/ISOL Isolation Switch MCC 2B6 --- Thermal Overloads and O.C. trip coils are in Brkr: 2-42169/MCC 2B6	OAD 516
SBVS 2 HVE-6B FLO LO/ CIS (MOD) V-9	1. Indicates the following: (A) Low flow as measured by FS-25-2081 (B) With CIS signal present, fan is secured 2. Indicating lights out, or fan is secured	1. NONE 2. Take switch back to start if applicable or investigate cause low low flow condition	(later)	FIS-25-2081, 42X, 3X Flow indicator switch --- (later)	OAD 516
SHLD BLDG CLG AIR B FCV-25-12 OVERLOAD V-15	1. FCV-25-12 motor operator is overloaded 2. (A) FCV-25-11 indication lights (B) SBVS "B" train temperatures H/P	1. NONE 2. (A) Investigate cause for motor overload	(later)	74 (later) --- Brkr: 2-4217/2B6 MCC	OAD 1177 PD & MD Sh 41
SHLD BLDG ISOL FCV-25-33 OVERLOAD / VALVE CLOSED V-21	1. SBVS cont. iso. valve is closed and/or motor operator is overloaded 2. (A) FCV-25-32 indication lights (B) PDIS-25-70	1. NONE 2. (A) Place other SBVS train in service if applicable (B) Investigate cause for valve closure	Valve $\geq$ 95% shut	74, 33 Valve Limit Switch ---	OAD 1157

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL V VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK V-4	BLANK			- - - - - - - - - -	
BLANK V-10	BLANK			- - - - - - - - - -	
CONT RM ISOL FCV-25-15/17 OVERLOAD / CIS (A/B) V-16	1. (A) Either or both Control Rm. south outside air iso. valve motor operator is overloaded (B) Either or both valves is open 2. (A) Control Room flow (B) Vlv. Ind. lights	1. NONE 2. (A) Determine cause for overload or insure other train is functional (B) Restore valve operability or shut if CIS present, if applicable	(later)	3X.74 - - - - - - - - - -	C4D 1171 1173
CONT RM ISOL FCV-25-14/16 OVERLOAD/ VALVE CLOSED V-22	1. (A) Either or both Control Rm. north outside air iso. valve motor operator is overloaded (B) Either or both valves are open 2. (A) Control Room flow (B) Vlv. Ind. lights	1. NONE 2. (A) Determine cause for overload or insure other train is functional (B) Restore valve operability or shut if CIS present, if applicable		3X.74 - - - - - - - - - -	C4D 1170 1172

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ANNUNCIATOR PANEL V VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTROL ROOM PRESS LO V-5	1. Diff press between Cont. Rm. & atmosphere is low 2. PDIS-25-23A, 23B	1. NONE 2. (A) Insure outside air intake valves open (B) Verify proper ventilation path in Control Room	(later)	PDIS-25-23A, 23B Pressure differential - - - - - - - - - - - -	OAD 1166
CONT RM EMERG FLTR 2AVE-13A OVERLOAD/ SS ISOL V-11	1. Indicates the Control Room emerg. filter fan 13A cannot be operated from Control Room due to: (A) NML/ISOL switch in Isolate or (B) The brkr has tripped on overcurrent or (C) Control fuse blown or brkr open at MCC-2A6 2. (A) Fan indicating lights are out (B) Flow indication on FI-25-19A1 drops to zero	1. NONE 2. Start non-operating fan, if applicable	(later)	74, SS/ISOL Isolation Switch - - - - - - - - - - - - Later / MCC 2A6	OAD 490
CONT RM EMERG FLTR FAN 13A OVERLOAD / SS ISOL V-17	1. Indicates the Control Room emerg. filter fan 13B cannot be operated from Control Room due to: (A) NML/ISOL switch in Isolate or (B) The breaker has tripped on overcurrent or overload (C) Control fuse blown or brk open at MCC-2A6 2. (A) Fan indicating lights are out (B) Flow indication on FI-25-19B1 drops to zero	1. NONE 2. Start non-operating fan, if applicable	(later)	74, SS/ISOL Isolation Switch - - - - - - - - - - - - (later)	OAD 491
CONTROL ROOM EMERG FLTR FANS 13A/13B FLO LO V-23	1. Indicates low flow condition in either/or A & B Emerg. filter fan trains 2. (A) Fan running indication (B) FI-25-19A1, FI25-19B1	1. NONE 2. Investigate cause for low flow cond.	< 130 CFM	2/490,2/491,FS-25-9A,9B Flow Switch - - - - - - - - - - - - (later)	OAD 490 491

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL V VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
CONT RM ISOL FCV-25-18/19 FCV-25-24/25 OVRLD/FAIL V-6	1. Indicates blown fuse or motor operator overload conditions on either kitchen exh. fan isol. valve or toilet exh. fan isol. valve. 2. Valve pos. ind. (A) Blown fuse - out (B) Overload - as is	1. NONE 2. (A) Investigate cause for overload (B) Notify Electrical Dept.	(later)	Thermal overloads and O.C. trip coils in bkr FCV-25-18/2-41341/ MCC-2A6 FCV-25-19/later/MCC-ltr FCV-25-24/later/MCC-ltr FCV-25-25/later/MCC-ltr	GAD 1190, 1174 1191, 1175 PID & MD Sht:
CONTROL ROOM A/C 3A FAN/OTHR SS ISOL V-12	1. Indicates A/C 3A cannot be operated from Cont. Rm. due to: (A) NML/ISOL switch in Isolate (B) Fan/Compr motor overload 2. Loss of running/indication lights	1. NONE 2. Return NML/ISOL switch to Normal	N/A	CR5, 22/ISOL CR6 CR5 fan overload CR6 compr. overload Isolation Switch --- Local at compressor	GAD 492
CONTROL ROOM A/C 3A/3B/3C FLOW LOW R V-18	1. Indicates low flow through either 3A, 3B or 3C Control Room air conditioning units. 2. FR-25-1A, 1B	1. NONE 2. Start standby A/C unit, if applicable	(later)	RA-RAB 36/V18/1574 Reflash Panel --- (later)	GAD 1574
CONTROL ROOM A/C OTHR 3A FAILURE V-24	1. Indicates 3A A/C compressor failure due to: (A) High compressor discharge pressure or, (B) Low compressor suction pressure or,	1. NONE 2. (A) Start standby A/C unit (B) Notify Electrical Dept.	a) 290 PSIG b) 55 PSIG c) 25 PSIG	CR5, CR3, CR4 ---	GAD 492

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL M VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTROL ROOM EMERG FLTR ABSORBER TEMP HI M-1	1. HI temp in charcoal absorbers on outlin of emerg. filtration fans 2. TR-26-2B Points 13,14,15,16, HVAC Panel	1. NONE 2. Start other emerg. filtration fan stop alarming filter fan	(Later)	TR-25-2A,2B Pts. 14, 15 Temperature Recorder --- HVAC Control Panel	C4D 478 479
CONTROL ROOM A/C 3B FAN/COMPR SS ISOL M-7	1. 3B A/C unit's control has been taken away from the Control Room 2. Loss of status lights	1. NONE 2. Return Normal/Isolate switch to Normal if aplicable	N/A	CR5, SS ISOL. CR6 CR5 Fan Ovrld CR6 Compressor ovrld Isolation Switch --- Local at Compressor	C4D 494
BLANK M-13	BLANK			---	
CONTROL ROOM A/C COMPR 3B FAILURE M-19	1. Indicates 3B A/C compressor failure (A) High compressor discharge pressure (B) Low compressor suction pressure (C) Low compressor oil pressure 2. No status lights	1. NONE 2. (A) Start standby A/C unit (B) Notify Electrical Department	a) 290 PSIG b) 55 PSIG c) 25 PSIG	CR2/Discharge press CR3/Suction Press CR4/Oil Press --- MCB/Breaker: 2-42111/MCC 2B6	C4D 494 Tech. Manual 2998-14183 Print No. B772-1200

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ANNUNCIATOR PANEL W VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONT RM EMERG HEPA FLTR /P HI W-2	1. High differential pressure on emergency filter train 1A/1B 2. (A) Damper position indication (B) HMCB panel indication	1. NONE 2. Investigate for clogged filter/closed damper	3" WG D/P	PDIS-25-9A, 9B Pressure differential indicator switch --- C.R., HVAC Room HMCB Panel	GAI 1167
CONTROL ROOM A/C 3C EMI/COMPR SS ISOL W-8	1. 3C A/C control switch isolated 2. Loss of status lights	1. NONE 2. Return Normal/Isolate switch to Normal if applicable	NML/ISOL Switch in Isol	CR5, SS ISOL CR6 Isolation Switch --- Local Control Panel	GAI 496
BATT RM 2A/2B ROOF VENTS 2-HV-1/2 OVERLOAD W-14	1. Ovr. overload on roof vents for 2A/2B battery rooms 2. NONE	1. Vents fail as is on overload 2. Have operator check breaker/dampers	Thermal Overloads or O.C. trip at 18 amps	74 --- Thermal overloads and O.C. trip coil located in: 2A-Bkr #2-41322 MCC2A6 2B-BKR #2-42128 MCC2B6	GAI 12.9 1220
CONTROL ROOM A/C COMPR 3C FAILURE W-20	1. Indicates 3C A/C compressor failure (A) High discharge pressure (B) Low suction pressure (C) Low oil pressure 2. No status lights	1. NONE 2. (A) Start standby A/C unit (B) Notify Electrical Department	a) 290 PSIG b) 55 PSIG c) 25 PSIG	CR2 Disch press CR3 Suction press CR4 Oil press --- Breaker No. – 2-42420/MCC 2A8/ compressor	GAI 496 Tech Manual 2998-14183 Print No. 8772-1200

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL W VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB CHARCOAL ABSORBER 2HVE-9A/9B TEMP HI W-3	1. High Temp on charcoal absorbers train 9A/9B 2. Temp. recorder on HVAC Panel	1. NONE 2. (A) Determine which train has HI Temp (B) Start opposite train as required & remove HI temp train from service (C) Notify Chemistry	(later)	TR-25-2A/2B Points 8, 9, 10, 11 Temp Recorder --- Inlet/Outlet of Charcoal Absorbers	OAD 478 479
RAB HEPA FLTR 2 HVE-9A/9B /P HI W-9	1. High diff. press on 9A/9B EDGS exhaust fan 2. P indication HVAC panel	1. NONE 2. (A) Verify flow path (B Remove filter train from service as soon as possible (C) Notify Chemistry	HI D/P alarm 5" WG	PDIS-25-5A, 5B Pressure Differential Indicator Switch --- HVAC	OAD 481
ENG SPGD PP RM 2A/2B PRESS HI W-15	1. High press 2A/2B safeguards pump room 2. Pump room press indication HVAC PDIS-25-16A/16B	1. NONE 2. (A) Verify HVS-4A/4B in operation (B) Verify flow path (C) Start standby fan as required	Sheet 443	PDIS-25-16A, 16B Pressure Differential Indicator Switch --- HVAC	OAD 487
ENG SPGD PP RM 2A/2B TEMP HI W-21	1. High temp. 2A/2B safeguards pump room 2. Pump room temp. indication HVAC	1. NONE 2. (A) Verify HVS-4A/4B in operation (B) Start standby fan as required	(later)	TR-25-1A, 1B Point 9 --- HVAC Control Panel	OAD 483 1137

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ANNUNCIATOR PANEL W VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB MN EXH 2 HVE-10A FLO LO/ OVRLD/TRIP W-4	1. Low flow/bkr. overload on RAB Main Exhaust Fan 2HVE-10A 2. (A) Fan Indicating Lights (B) PR-25-1A/1B	1. NONE 2. (A) Start 2HVE-10B (B) Have operator check fan locally (C) Stop fan & Investigate	LO Flow .08 in wg	FS-25-13A, r, 4y, t Flow switch at discharge of fan in HVAC Room --- MCB Panel Breaker #2-40211/ MCC 2A2	OMD 501
RAB EMERG EXH 2HVE-9A FLO LO/OVRLD/ STAS OVRRD W-10	1. (A) Low flow on ECCS exhaust 2HVE-9A (B) C. S. in Stop (C Fan tripd on overload 2. (A) C. S. position (B) Fan Indicating Lights	1. NONE 2. (A) Start 2 HVE-9B (B) Verify C. S. in Auto (C) Have operator check fan locally (D) Stop fan & Investigate	LO flow .08" wg	FS-25-12A, 74, 2, 3 Flow switch at discharge of fan in HVAC Room --- MCB Panel Breaker #2-41348/ MCC 2A6	OMD 503
RAB SUPPLY 2 HVS-4A FLO LO/OVRLD/ STAS OVRRD W-16	1. (A) Low flow on RAB supply 2 HVS-4A (B) C. S. in Stop (C) Fan tripped on overload 2. (A) C. S. position (B) Fan Indicating Lights	1. NONE 2. (A) Start 2 HVS-4B (B) Verify C. S. in Auto (C) Have operator check fan locally (D) Stop fan & Investigate	LO Flow .08" wg	FS-25-11A, 2, 3, r, t Flow switch at discharge of fan in HVAC Room --- MCB Panel Breaker #2-40358/ MCC 2A5	OMD 505
BLANK W-22	BLANK			---	

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ANNUNCIATOR PANEL 4 VERTICAL COLUMN 5

2

WINDOW TITLE	1. INDICATED CONDITION 2. ORIGINAL ROOM INDICATION WHICH VERIFY OR PRESENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB MN EXH 2HVE-10B FLO LO/ OVRLD/TRIP W-5	1. Low flow/Bkr overload on RAB main exhaust fan 2HVE-10B 2. (A) Fan Indicating Lights (B) PR-25-1A/1B	1. NONE 2. (A) Start 2HVE-10A (B) Have operator check fan locally (C) Stop fan & investigate	LO Flow .08" wg	FS-25-1B, r, t, 4y Flow Switch --- IMCB Panel Bkr #2-40510/MCC 2B2	OAD 502
RAB EMERG EXH 2HVE-9B FLO LO/OVRLD/ SIAS (MOM) W-11	1. (A) Low flow on EGTS exhaust 2HVE-9B (B) C. S. in stop (C) Fan tripped on overload 2. (A) C. S. Position (B) Fan Indicating Lights	1. NONE 2. (A) Start 2 HVE-9A (B) Verify C. S. in Auto (C) Have operator check fan locally (D) Stop fan & investigate	LO Flow .08" wg	FS-25-12B, 74, 2, 3 Flow Switch --- IMCB Panel Bkr #2-42172 MCC 2B6	OAD 504
RAB SUPPLY 2HVS-4B FLO LO/OVRLD/ SIAS (MOM) W-17	1. (A) Low flow on RAB supply 2HVS-4B (B) C. S. in stop (C) Fan tripped on overload 2. (A) C. S. Position (B) Fan Indicating Lights	1. NONE 2. (A) Start 2HVS-4A (B) Verify C. S. in Auto (C) Have operator check fan locally (D) Stop fan & investigate	LO Flow .08" wg	FS-25-11B, 2, 3, r,t Flow Switch --- IMCB Panel Bkr #2-40657/LC2B5	OAD 506
RAB MN EXH HEPA FILTER /PRESS HI W-23	1. High diff. press on 2HVE-4A/4B RAB exhaust fan(s) 2. P Indication(s) on IMCB panel	1. NONE 2. (A) Verify flow path (B) Remove fan from service as soon as possible (C) Notify Chemistry	HI-3" wg D/P	PDIS-25-6 Pressure Differential Indicator Switch --- IMCB Panel Local Indication	OAD 501

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ANNUNCIATOR PANEL W VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK W-6	BLANK				
BLANK W-12	BLANK				
BATTERY RM A VENT AIR SPLY FLOW LO W-18	1. Low flow to 2A Battery Room (10 second time delay) 2. HMCB Indication	1. NONE 2. (A) Verify 2HVS-5A/5B running (B) Verify Flow Path	LO Flow .08" wg	FS-25-25 Flow switch on discharger header in 2A Battery Room HMCB Panel	GAD 476
BATTERY RM B VENT AIR SPLY FLOW LO W-24	1. Low flow to 2B Battery Room (10 sec time delay) 2. HMCB Indication	1. NONE 2. (A) Verify 2HVS-5A/B running (B) Verify flow path	LO Flow .08" wg	FS-25-26 Flow switch on discharge header in 2B Battery Room HMCB Panel	GAD 477

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ANNUNCIATOR PANEL X VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTRS CNTMT / H2 PURGE AIR TEMP HI X-1	1. High temperature in charcoal absorber for containment cont. purge/H2 Purge Filter Train. 2. TR 25-3 Points 2, 3, 4, 5	1. NONE 2. (A) Compare temperatures of all detectors for failed detector. (B) Remove train from service ASAP (C) Notify Chemistry	HI - 300°F	TR-25-3 Points, 1, 2, 3, 4, 5 --- HVCB	CAD 480
CONTRS CNTMT / H2 PURGE HEPA FILTER /P HI X-7	1. Dirty filter or blocked flowpath on Filter Train 2. PR 25-2/PDIS 25-26 on HVCB.	1. NONE 2. (A) Verify System Alignment (B) Remove train from service ASAP (C) Notify Chemistry	(later)	PDIS 25-26 --- HVCB	CAD 1246
CONTRS CNTMT / PURGE EXH FCV-25-25 OVERLOAD X-11	1. Motor overload on exhaust damper to plant vent 2. Position indicating lights on HVCB	1. NONE 2. Have operator check breaker	(later)	74 --- Local At Breaker	CAD 1245
CONTRS CNTMT / H2 PURGE HUMIDITY HI X-17	1. High moisture content in filter train 2. Local indication only	1. NONE 2. (A) Have operator check local indicator (B) Notify Chemistry	70% R.H.	MIS 25-3 --- HVAC Room	CAD 1246 Inst. List

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ANNUNCIATOR PANEL X VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMIT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCW COOLING AIR TEMP HI X-2	1. High temperature air out of cooling coils 2. Temperature recorder TR-25-3 on IMCB	1. NONE 2. (A) Verify CCW to coils - increase flow if necessary (B) Verify CCW containment isolation valves open	HI-106° F	TR-25-3 Points 7, 8 IMCB	OAD 480
CCW COOLING 2AE-21A FLOW / OVRLD/TRIP X-8	1. Low flow or motor overload trip on 2AE-21A CCW fan cooler 2. Fan indicating lights on IMCB	1. NONE 2. (A) Start standby fan (B) Have operator check breaker (C) Notify Electrical Dept.	(later)	63X,74-1,74-2,74-3 4160V-2A3	OAD 507
CCW COOLING 2AE-21B FLOW / OVRLD/TRIP X-14	1. Low flow or motor overload trip on 2AE-21B CCW fan cooler 2. Fan indicating lights on IMCB	1. NONE 2. (A) Start standby fan (B) Have operator check breaker (C) Notify Electrical Dept.	(later)	63X,74-1,74-2,74-3 4160V-2B3	OAD 508
STATIC INVTR ROOM TEMP HI X-20	1. HI temperature in Inverter Room 2. NONE	1. NONE 2. Check operation of 2INS-5A/5B and 2AE-11/12	>105° F	TS-25-24 later	OAD 476

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL X VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FUEL POOL RM TEMP HI X-1	1. HI temperature in fuel pool area 2. NONE	1. NONE 2. Verify operation of FHVS	110° F	TS-25-7 (later)	GAI 469
FUEL POOL EQH 2HVE-16A/16B FLO LO/OVLD X-9	1. Flow low or motor overload on FHVS Fuel Pool Exhaust Fans	1. NONE 2. (A) Verify flowpath and filter D/P (B) Have operator check breaker (C) Notify Electrical Dept.	0.08" wg 1130 SCFM	FS-25-8A,B,74,2 Exhaust Ducts MCC 2A8/2B8	GAI 526 527 Inst. List
FUEL BLDG HVENG VENT FCV-25-30 OVRLD/WD X-15	1. Motor overload on FHVS to SHVS FCV-25-30 2 Position indicating lights on HCB	1. NONE 2. (A) Have operator check breaker (B) Notify Electrical Dept.	N/A	74 MCC-2A6 Motor Torque Switches	GAI 1154
FUEL BLDG VENT 2HVS-7 / 2HVE-15 FLO LO/OVLD X-21	1. Flow low or motor overload on FHVS supply or exhaust fans 2. Fan indicating lights	1. NONE 2. (A) Verify flowpath and filter D/P (B) Have operator check breaker (C) Notify Electrical Dept	0.08" wg 1130 SCFM	FS-25-24A,B,74,2 OAI Duct/Exhaust Ducts MCC-2A8	GAI 469 470 Inst. List

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 5 VERTICAL COLUMN 4

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WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PNL. ROOM, RM TO OUTSIDE /P HI-LO X-4	1. (A) HI inside to outside diff. press possibly door open (B) LO inside to outside diff. press excess fans operating or OAI closed 2. PDIS-25-17A/17B on HVCB	1. Opens/closes OAI PCV-25-11/12 to maintain negative pressure 2. (A) HI-verify PBVS in operation with operable flow path (B) LO-verify only one train of PBVS operating and flowpath	HI - 0" wg LO - neg. 2.25" wg	PDIS-25-17A, 17B --- HVCB	OAD 517 Inst. List
BLANK X-10	BLANK			---	
PNL. BLDG EMERG VENT PCV-25-31 OVERLOAD X-16	1. MOTOR OVERLOAD ON flows TO shut PCV-25-31 2. Position indicating lights on HVCB	1. NONE 2. (A) Have operator check blr. (B) Notify Electrical Dept.	N/A	74 --- MCC-2B6 Motor Torque Switches	OAD 1155
CHRMS CHMT H. PURGE HTG COIL CHGE/ POWER LOSS X-22	1. HI-HI temp in filter train/loss of power to heater control panel 2. (A) TR-25-1B HVCB	1. Deenergizes heater on HI-HI temp 2. (A) Have operator reset at local control panel (B) Notify Electrical	HI-HI 220°F	CR-2, TD --- Local Heater Control Panel	OAD 1222

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL X VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
H2 PURGE FCV-25-29 OVERLOAD / VLV OPEN X-5	1. (A) Motor overload on 2BVS to H2 Purge FCV-25-29 (B) FCV-25-29 in open position 2. Valve position indicating lights	1. NONE 2. (A) Have operator check breaker (B) Close valve unless H2 purging	N/A	74, 33 --- MCC 2A6 Valve limit switches	OAD 1158
H2 PURGE FCV-25-34 OVERLOAD/ VLV OPEN X-11	1. (A) Motor overload on 2BVS to H2 purge FCV-25-34 (B) FCV-25-34 in open position 2. Valve position indicating lights	1. NONE 2. (A) Have operator check breaker (B) Close valve unless H2 purging	N/A	74, 33 --- MCC 2B6 Valve limit switches	OAD 1159
H2 PURGE FANS FLO LO/OVRLD X-17	1. LO flow or motor overload on H2 purge fans HVE-71/7B 2. (A) FI-25-2 on HVCB (B) Fan indicating lights	1. NONE 2. (A) Verify proper flow and flowpath (B) Have operator check breaker	0.08" wg 1130 SCFM	FS-25-17A,B,74,42 --- HVCB,MCC 2A6, 2B6	OAD 485 486 Inst. List
CNTMT ISOL / H2 PURGE ISOL VLV CLS (MOD) X-23	1. Valve control switch in overrid/open position 2. Control switch position on HVCB	1. NONE 2. Place C.S. to close unless H2 purge in progress	N/A	20K --- HVCB	OAD 1160 1161

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ANNUNCIATOR PANEL X VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ELEC EQUIP RM 2HVS-5A/ 2HVE-11 FLO LO/OL X-6	1. Low flow or motor overload on Elec. Equip. Room supply/exhaust fan 2. NONE	1. NONE 2. Have operator check flowpath and breaker	0.08" wg 1130 SCFM	74,FS-25-23A,22A,2 - - - - - - - - - - - MCC 2A5 MCC 2A6	OAD 468 478 Inst. List
ELEC EQUIP ROOM A TEMP HI X-12	1. HI temperature in "A" Electrical Equipment Room 2. NONE	1. NONE 2. Check operation of 2HVS-5A/5B and 2HVE-11/12	110°F	TS-25-8 - - - - - - - - - - -	OAD 476 Inst. List
ELEC EQUIP RM 2HVS-5B / 2HVE-12 FLO LO / OVLD X-18	1. Low flow or motor overload on Elec. Equip. Room supply/exhaust fan 2. NONE	1. NONE 2. Have operator check flowpath and breaker	0.08" wg 1130 SCFM	74,FS-25-22B,23B,2 - - - - - - - - - - - MCC 2B5 MCC 2B6	OAD 468 477 Inst. List
ELEC EQUIP ROOM B TEMP HI X-24	1. HI temperature in "B" Electrical Equipment Room 2. NONE	1. NONE 2. Check Operation of 2HVS-5A/5B and 2HVE-11/12	110°F	TS-25-9 - - - - - - - - - - -	OAD 477 Inst. List

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1A VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
INTAKE STRUCTURE WATER LEVEL LOW 1A-1	later	1. NONE later	EL-2'1"	LS-21-5A Intake structure upstream of Traveling Screens	GAD 1007 P & ID 2998-G-088
CONDENSATE STORAGE TANK LOW-LOW LEVEL. 1A-7	1. Level inadquite to provide sufficient aux. feed-water pump suction pressure. 2. (A) Level Indicators on RTGB-202 (LIS12-11 and LIS-12-118) (B) Level recorder on plant aux. control board No. 2, (LR-12-118)	1. NONE 2. Stop auxiliary feedwater pumps (pump protection setpoint)	2' 6"	LIS-12-11(A) RTGB-202	GAD 744 P & ID
CONDENSATE STORAGE TANK LOW LEVEL. 1A-13	1. CST level below 33 ft. approaching tech. spec. limit 2. (A) Level Indicators on RTGB-202, (LIS-12-11 and LIS-12-118)	1. NONE 2. Have water treatment plant startal and fill CST, use manual bypass around auto. Make-up level control valve if required.	33 ft (309,652 gallons)	LIS-12-11(A) RTGB-202	GAD 744 P & ID 2998-G-088

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1A VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SAFEGUARD PUMP ROOM B SUMP HI-HI LEVEL 1A-7	1. Failure of sump pumps to start or leak into sump exceeding sump pump capacity. 2. Alarm only	1. NONE 2. Dispatch operator to insure sump pumps are running and to identify source of inleakage	HI-HI 10'3"	LS-06-41 Ultrasonic sensor 2B HPSI Pump Room	GAI 533 P & ID 2998-G-088
SAFEGUARD PUMP ROOM A SUMP HI/HI-HI LEVEL 1A-8	1. Safeguards sump Inleakage 2. Alarm only	1. (A) Sump pump 2A1 start on HI level (B) Sump pump 2A2 starts on HI HI level 2. Dispatch operator to insure sump pumps have started and to identify souce of Inleakage	HI-HI:10'3" HI: 11' 3"	LS-06-1A 2A LPSI Pump Room	GAI 532 P & ID 2998-G-088
FUEL POOL HIGH/LOW LEVEL HIGH TEMP 1A-14	1. (A) Fuel pool cooling system cooling capacity is lost or restricted. (B) Abnormal water level. 2. Alarm only	1. NONE 2. Refer to fuel pool cooling Off-Normal Procedure 2-[illegible]	Temp. 150°F Level — HI: +2 LO: -2	LS-4420 TA-4420 Fuel Pool	GAI 182 P & ID E-13172-310-140

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1A VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIESEL OIL STORAGE TANK 2A LOW LEVEL 1A-3	1. Approaching diesel oil storage tank 2A Tech. Spec. Level. 2. Alarm only	1. NONE 2. Notify Chemistry to have tank filled immediately.	27' 0" above tank Base (40,729 gal)	LS-17-10A 2A diesel oil storage tank	OAD 1119 P & ID 2998-G-086
DIESEL OIL DAY TANKS 2A1, 2A2 LOW-LOW LEVEL 1A-9	1. Diesel oil day tank 2A1 or 2A2 volume is at or below 90 gallons. 2. None - alarm only	1. NONE 2. Dispatch operator to lineup fuel transfer system and fill day tank manually.	11.5 inches from tank bottom 27% indicated on local level gage	LS-17-552A/553A at 2A1 and 2A2 D.O. Day tanks	OAD 112b P & ID 2998-G-086
VALVES I-SE-07-5A I-SE-07-5C I-SE-07-5E CLOSED 1A-15	1. Containment pressure transmitters (PT-07-2A, PT-07-2C or PT-07-4A1) containment isolation closed. 2. Solenoid valves I-SE-07-5A, C and E position indicating lights on PAC B No. 2	1. NONE 2. These valves are required to be locked open they are closed only to isolate their respective instrument line in the event of an instrument line break.	Valves Closed	CLS I-SE-07-5A I-SE-07-5C I-SE-07-5E 5A-Plenum Room 5C,5E-Pipe Penetration Room	OAD 321 P & ID 2998-G-088

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ANNUNCIATOR PANEL 1A VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOW WATER SUPPLY STRAINERS HIGH DIFFERENTIAL PRESSURE 1A-4	1. (A) Take water strainer A1 or A2 HI diff. pressure (B) Possible failure of strainers to auto. backwash at 2 PSID. 2. NONE alarm only	1. NONE 2. Dispatch operator to manually backwash strainers	3 PSIG	PDIS-21-25-1A1,1A2 Intake structure	CAD 899 P & ID 2998-G-082
CITIZENS COOLING WTR SURGE TANK COMPARTMENT A LOW LEVEL 1A-10	1. (A) Failure of auto. make up to CW surge tk. (B) Leak out of the CCW system. 2. (A) Abnormal flows in headers as indicated by FIS-14-1A and FIS-14-1B. (B) Low header pressures as indicated by PIS-14-8A and PIS-14-8B.	1. (A) HCV-14-8A and HCV-14-9 will auto. close on low level (2'5") in the CCW surge tank as sensed by LS-14-6A. This will isolate th "A" header from the "N" header. (B) HCV-14-8B and HCV-14-10 will auto. close on low level (2'5") in the CCW surge tk. as sensed by LS-14-6B. This will isolate the "B" header from the "N" header 2. Refer to CCW Off-Normal Proc #2-0310030	2'5" From Bottom	LS-14-1A CCW Surge Tk. Room	CAD 211 P & ID 2998-G-080
BLANK 1A-16	BLANK				

2

ANNUNCIATOR PANEL 1A VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PRESSURIZER HI-LEVEL CHANNEL X 1A-5	1. Indicates PZR level has risen above normal control range. 2. (A) Compare all channels of PZR level indications (B) Check charging/letdown flow.	1. NONE 2. Refer to PZR Press. and Level Off-Normal Procedure #2-0120035.	>60% actual pressurizer level	LA-1110X-1 Inside RM26-203	G40 90 13172-310-109
PRESSURIZER LO-LO LEVEL CHANNEL X 1A-11	1. Indicates PZR level has fallen to well below normal control range and heater damage could result if level continues to fall. 2. Compare all channels of PZR level ind.	1. (A) Trips PZR heater transformer 2A3 4160V feeder breaker. (B) LO-LO level of 27% as sensed by Channel X Bi-stable (LO-1110XL) will initiate heater cut off opening 480V feeds to heater distribution banks B-2,B-4,B-5 and B-6. 2. Refer to PZR Press and Level Off-Normal Procedure #2-0120035.	<27% actual pressurizer lever	LC-1110X Inside RM26-203	G40 90 13172-310-109
BLANK 1A-17	BLANK				

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1A VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ATMOS SIM DUMP ISOL VALVES MV-08-15 MV-08-17 MOMENT OVERLOAD VALVES CLOSED 1A-6	1. (A) Atm Stm Dump Isolation valve MV-08-15 or MV-08-17 closed. (B) MV-08-15 or 17 has tripped on overload (C) Feeder bkr. open to MV-08-15 or 16 2. Valve position indicating lights on RRB-202 for MV-08-17 and PNL B for MV-08-15.	1. NONE 2. (A) Use other atmospheric dump valve if required. (B) Check bkr. locally (C) Contact Electrical Department	Overload (later)	(74,33) 1621 (74,33) 1623 --- 125V DC PP-254 Bkr #2-06957 Bkr #2-06958	OMD 1621 OMD 1623 --- P & ID 2998-G-079 Sh 2 or 2
ATM STM DUMP MV-08-18A/18B OVERLOAD / CS MAN/SS DTL 1A-12	1. Indicates Atmospheric Stm. Dump MV-08-18A/18B cannot be operated from control room due to: (A) NML/ISOL switch is in the isolate position (B)		(later)	(74,83,SS-1626-3)1626 (74,83,SS-1628-3)1628 (later) --- NML/ISOL Switch	OMD 1626 OMD 1628 --- P & ID 2998-G-079 Sh 2 of 2
BLANK 1A-18	BLANK			---	

FT. PIERCE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1B VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
INTAKE STRUCTURE WATER LEVEL LOW 1B-1	later	1. NONE 2. later	El-2'1"	LS-21-5B Level Switch Intake structure upstream of traveling screens.	GAD 1007
CONDENSATE STORAGE TANK LOW-LOW LEVEL 1B-7	1. Level inadquate to provide sufficient aux. feedwater pump suction pressure. 2. (A) Level indication on RRSB-202 (LIS-12-11 and LIS-12-118) (B) Level recorder on plant aux. control board No. 2 (LR-12-118)	1. NONE 2. STOP auxiliary feedwater pumps. (pump protection setpoint)	2'6"	LS-12-8 Level Switch	GAD 743
CONDENSATE STORAGE TANK LOW-LOW LEVEL 1B-13	1. Level inadquate to provide sufficient aux. feedwater pump suction pressure. 2. (A) Level indication on RRSB-202, (LIS-12-11 and LIS-12-118) (B) Level recorder on plant aux. control board No. 2, (LR-12-118)	1. NONE 2. STOP auxiliary feedwater pumps. (Pump protection setpoint)	2'6"	LIS-12-118 Level Indicating Switch RRSB-202	GAD 744

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1B VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SAFEGUARD PUMP ROOM A SUMP HI-HI LEVEL 1B-2	1. Failure of sump pumps to start or leak into sump exceeding sump pump capacity 2. Alarm only	1. NONE 2. Dispatch operator to insure sump pumps are running & to identify source of inleakage	10'3"	LS-06-40 Level Switch 2A LPSI Room	CAD 532
SAFEGUARD PUMP ROOM B SUMP HI/HI-HI LEVEL 1B-8	1. Safeguards Sump Inleakage 2. Alarm only	1. (A) Sump pump 2B1 starts on HI Level (B) Sump pump 2B2 starts on HI-HI level 2. Dispatch operator to insure sump pumps have started and to identify source of inleakage	HI - 10'3" HI-HI 11'3"	LS-06-18 Level Switch 2B HPSI Room	CAD 533
FUEL POOL HIGH/LOW LEVEL HIGH TEMP 1B-14	1. (A) Fuel Pool Cooling system cooling capacity is lost or restricted. (B) Abnormal water level 2. Alarm only	1. NONE 2. Refer to Fuel Pool Cooling Off-Normal Procedure 2-0350130	TEMP HI 150 DEG F Lev HI +2" Lev LO -2"	LS-4421 Level Switch Temp Alarm	CAD 181

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1B VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
DIESEL OIL STORAGE TANK 2B LOW LEVEL 1B-3	1. Approaching diesel oil storage tank 2B Tech. Spec. level 2. Alarm only	1. NONE 2. Notify Chemistry to have tank filled immediately	27' above tank base (40,726 gal)	LS-17-108 Level Switch at 2B Diesel oil storage tank	OAD 1129
DIESEL OIL DAY TANKS 2B1, 2B2 LOW-LOW LEVEL 1B-9	1. Diesel oil Day Tank 2B1 or 2B2 volume is at or below 88 gallons 2. Alarm only	1. NONE 2. Dispatch operator to line up fuel transfer system and fill tank manually	11.5 inches from tank bottom 26% indicated on local level gage	LS-17-552B/553B Level Switches At 2B1/2B2 diesel oil Day Tanks	OAD 1136
VALVES 1-SE-07-5B 1-SE-07-5D 1-SE-07-5F CLOSED 1B-15	1. Containment Pressure transmitters (PT-07-2B, PT-07-2D or PT-07-4B1) containment isolation valves closed. 2. Solenoid valves 1-SE-07-5B, 5D and 5F position indicating lights on PWR No. 2.	1. NONE 2. These valves are required to be locked open, they are closed only to isolate their respective instrument line in the event of an instrument line break	Valve(s) Closed Position from Limit Sw.	CLS-1-SE-07-5B, 1-SE-07-5D 1-SE-07-5F Control Lev. Switch Pipe Penetration Room	OAD 322

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 18 VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LUBE WATER SUPPLY STRAINERS HIGH DIFFERENTIAL PRESSURE 18-4	1. (A) Lube water strainer B1 or B2 HI diff. pressure (B) Possible failure of strainers to auto. back- 2. None alarm only	1. NONE 2. Dispatch operator to manually backwash strainers	3 PSIG	PDIS-21-25-1B1, 1B2 Press. Diff. Indicating Switch at intake structure	CAD 839
COMPONENT COOLING WTR SURGE TANK HIGH LEVEL COMPARTMENT B LOW LEVEL 18-16	1. (A) HI Level - failure of auto. makeup to CCW surge tank or leakage into CCW system from loads it serves. (B) LO Level - failure of Auto [illegible] to CCW surge tank or leak out of CCW system. 2. (A) Abnormal header flow as indicated by FIS-14-1A and FIS-14-1B. (B) Low header pressures as indicated by PIS-14-8A and PIS-14-8B. (C) Increasing CCW temps.	1. (A) HI Level - NONE (B) LO Level - [illegible] 14-9 will auto. close on low level (2'5") in the CCW surge tk. as sensed by LS-14-6A. This will isolate the "A" header from the "N" header (2) HCV-14-8B and HCV-14-10 will auto. close on low level (2'5") in the CCW surge tk. as sensed by LS-14-6B. This will isolate the "B" header from the "N" header. 2. Refer to CCW Off-Nomal Proc. 2-0310030	HI 4'6" From Bottom LO 2'5" From Bottom	LS-14-1B, LS-14-5 Level Switches In CCW surge tank room	CAD 211 P & ID 2998-G-083

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 18 VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PRESSURIZER HI-LEVEL CHANNEL Y 18-5	1. Indicates pressurizer level has risen above normal control range. 2. (A) Compare all channels of PZR level indications (B) Check Charging/Letdown Flow	1. NONE 2. Refer to PZR Press. & Level Off-Normal Procedure #2-0120035	> 60% Actual PZR Level	LA-1110Y-1 Level Alarm Inside RCDB-203	GAI 90 P & ID 13172-310-109
PRESSURIZER LO-LO LEVEL CHANNEL Y 18-11	1. Indicates PZR level has fallen to well below normal control Range, and heater damage could result if level continues to fall. 2. Compare all channels of PZR Level Ind.	1. (A) Trips pressurizer heater transformer 2B3 480V feeder breaker (B) LO-LO level of 27% as sensed by channel Y Bi-stable (LC-1110YL) will initiate heater cut off opening 480V feeds to heater distribution buss P-1,B-1,B-2 and B-3. 2. Refer to PZR Press and Level Off-Normal Procedure #2-0120035.	27% actual PZR Level	LC-1110Y Level Controller Inside RCDB-203	GAI 90 P & ID 13172-310-109

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1B VERTICAL COLUMN 6

2

WINDOW TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ATMOS STM DUMP ISOL VALVES MV-08-14, MV-08-16 MOTOR OVERLOAD VALVES CLOSED 1B-6	1. (A) ASW STM DUMP Isolation valve MV-08-14 or MV-08-16 closed. (B) MV-08-14 or 16 has tripped on overload. (C) ERROR, open to MV-08-14 or 16 2. Valve position indicating lights on ICRB-202 for MV-08-14 and MCB for MV-08-16	1. NONE 2. (A) Use other atmospheric dump valve if (B) Check bkr. locally (C) Contact Electrical Department	Overload Later .	74, 3I/1622,1624 Overload contact/Limit switch --- 125VDC PP-255 MV-08-14 BKR #2-60979 MV-08-16 BKR #2-60981	OAD's 1622 1624
ATM STM DUMP MV-08-19A/19B OVERLOAD / CS MAN/SS ISOL 1B-12			Overload later ---	74,83,SS-1625-3 74,83,SS-1627-3 ---	OAD's 1625 1627

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ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL LC VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PRESSURIZER PORV & SRV VALVES OPEN LC-1	1. One or more PORV or Safety valve relieving or leaking by 2. Verify flow on FI-01-1,2,3,4 or 5 on PAB 2 check PORV positions on RTGB-203	1. Rx trip at 2375 psia in conjunction with PORV lifting 2. Refer to PZR Relief/Safety Valve Off-Normal #2-0120036.	Later	FE-01-1,2,3,4,65 - - - - - - - - - -	CWD 84
REACTOR COOLANT VENT SYSTEM HIGH PRESSURE LC-7	1. Vent valves from pressurizer (V-1460 & V-1461)/or vent valves from reactor head (V-1462 & V-1463) are leaking by or open with no downstream valve open 2. PIA-1140 on PAB 2 Rx Head Vent sys valve status	1. NONE 2. Later	Later	PIA-1140 Pressure Indicator Annunciator - - - - - - - - - - PAB 2	CWD 1672
ESF LEAKAGE COLL RETURN TO CONTAINMENT LC-13	1. ECCS sump pumps realigned to disch to Rx Cavity & Rx Cavity Pumps Realigned to still disch. back to cavity. (Valves 2-SE-07-4 & 2-SE-06-1 are open) 2. Valve status lights	1. NONE 2. Shut valves if not LOCA condition	NONE	33X - - - - - - - - - - PAB 2	CWD 308

ANNUNCIATOR PANEL 1C VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 1C-2	BLANK			- - - - - - - - - - -	
BLANK 1C-8	BLANK			- - - - - - - - - - -	
REGENERATIVE FILTER HIGH DIFF PRESS 1C-14	1. Filter is clogged 2. NONE	1. NONE 2. Call operator - have cleaned	later	PDIS-09-10 Pressure Differential Indicator Switch - - - - - - - - - - - Turbine Deck East Side	GAD 1696

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ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1C VERTICAL COLUMN 3

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSONNEL TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 1C-1	BLANK				
BLANK 1C-9	BLANK				
LETDOWN RELIEF VA DISCH. LINE HIGH TEMP 1C-15	1. Relief valve V-2345 (on letdown line downstream of LCV's) is open or leaking by 2. letdown pressure (PIC-2301) > 650 psig.	1. NONE 2. Lower letdown press and have maintenance check relief setpoint if relieving early	later	TIA-6660 Temperature Indicator Annunciator PAB "B"	CHD 325

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1C VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FIRE DAMPERS EL 43' & 62' CLOSED 1C-4	1. One or more ventilation internal barrier wall fire dampers have shut due to high temp or failure of fusible link. 2. NONE	1. NONE 2. (A) Check 43' and 62' levels for fire or smoke. (B) Notify Maintenance to locate and reset damper.	Damper Trip Shut Limit Switch	RA-FE-1 Reflash Panel - - - - - - - - - - - (later)	GD 1841 1842
FIRE DAMPERS EL 19.5' CLOSED 1C-10	1. One or more ventilation internal barrier wall fire dampers have shut due to high temp or failure of fusible link. 2. NONE	1. NONE 2. (A) Check 19.5' level for fire or smoke (B) Notify maintenance to locate and reset damper.	Damper Trip Shut Limit Switch	RA-FD-2 Reflash Panel - - - - - - - - - - - (later)	GD 1843 1844
FIRE DAMPERS EL -5' CLOSED 1C-16	1. One or more ventilation internal barrier wall fire dampers have shut due to high temp or failure of fusible link. 2. NONE	1. NONE 2. (A) Check 0.5' level for fire or smoke (B) Notify Maintenance to locate and reset damper.	Damper Trip Shut Limit Switch	FA-FD-3 Reflash Panel - - - - - - - - - - - (later)	GD 1845

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ANNUNCIATOR PANEL 1C VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHEN VISUAL OR PERMANENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 1C-5	BLANK				
BLANK 1C-11	BLANK				
BLANK SP	BLANK				

2

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1C VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 1C-6	BLANK			- - - - - - - - - -	
BLANK 1C-12	BLANK			- - - - - - - - - -	
BLANK SP	BLANK			- - - - - - - - - -	

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ANNUNCIATOR PANEL 1R VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
DIFFERENTIAL "1w"/"nw" TRIP 1R-1	1. Trouble on West 240 KV switchyard bus 2. CCB's 1W, 2W, 3W, 4W should indicate open	1. CCB's 1W, 2W, 3W, 4W trip open 2. Notify Division Dispatcher and/or system protection			OAD 1108
DIFFERENTIAL "1e"/"ne" TRIP 1R-7	1. Trouble on East 240 KV switchyard bus 2. CCB's 1E, 2E, 3E, 4E should indicate open	1. CCB's 1E, 2E, 3E, 4E trip open 2. Notify Division Dispatcher and/or system protection			OAD 1108
DIFFERENTIAL "1T"/"nT" TRIP 1R-13	1. Trouble on line feed "A" startup transformer 2. CCB 2E, 2CB 2N and associated 4160V and 6900V startup breakers should indicate open	1. CCB 2E, CCB 2N, 4160, 6900 breakers tripped open. 2. Notify Division Dispatcher and/or system protection			OAD 1108
DIFFERENTIAL "1Z"/"nZ" TRIP 1R-19	1. Trouble on line feeding "B" startup transformer 2. CCB 4N and associated 4160 and 6900 startup breaker should indicate open	1. CCB 4E, CCB 4N, 4160, 6900 breakers tripped open. 2. Notify Division Dispatcher and/or system protection			OAD 1108

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1R VERTICAL COLUMN 2

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION – VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIFFERENTIAL "I"/"P" TRIP 1R-2	1. Trouble on line feeding Hutchinson Island substation 2. OCB 4A and 4A should indicate open	1. OCB 4A and 4A trip open 2. Notify Division Dispatcher and/or System Protection			OAP 1108
LOCAL BACKUP TRIP 1R-8	1. A switchyard OCB has failed to operate to properly clear a fault 2. Line repeat panel breaker indication	1. Back OCB's trip to clear fault. 2. (A) Check entire line repeat panel for status of switchyard (B) Report to Division Dispatcher/System Protection			OAP 1108
240 KV OCB AIR PRESS LO 1R-14	1. Low operating air pressure on a 240 KV OCB 2. NONE	1. NONE 2. (A) Check air compressor breakers for tripped indication, reset if necessary (B) If alarm does not clear in ten (10) minutes notify Division Dispatcher and/or Walton Service Center.	<200 psi		OAP 1108
SWITCHYARD BATT CHGR TROUBLE 1R-20	1. Switchyard "A" or "B" train electrical malfunction (later) 2. NONE	1. NONE 2. (A) Check 480V AC breaker to switchyard closed (B) Check battery charges for proper operation (C) Notify Division Dispatcher and/or System Protection			OAP 1108

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1R VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
OCB 1W 8453 TRIP 1R-3	1. OCB 1W is open 2. If Midway #1 has a fault OCB 1W should also indicate open	1. OCB 1W trips open 2. Notify Division Dispatcher and/or System Protection			OMD 1108
OCB 2W 8463 TRIP 1R-9	1. OCB 2W is open 2. If Midway #2 has a fault OCB 2W should also indicate open	1. OCB 2W trips open 2. Notify Division Dispatcher and/or System Protection			OMD 1108
OCB 2H 8460 TRIP 1R-15	1. OCB 2H is open signifies trouble on Midway #2 or startup transformer 2. NONE	1. OCB 2H trips open 2. Notify Division Dispatcher and/or System Protection			OMD 1108
OCB 2E 8423 TRIP 1R-21	1. OCB 2E is open 2. If "A" startup transformers have a fault OCB 3H and associated 4160V and 6900V startup breakers should indicate open	1. OCB 2E trips open 2. Notify Division Dispatcher and/or System Protection			OMD 1108

2

PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1R VERTICAL COLUMN 4

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CCB 3H 865 TRIP 1R-4	1. CCB 3H is open 2. If Midway #e has a fault CCB 3H should also indicate open	1. CCB 3H trips open 2. Notify Division Dispatcher and/or System Protection			040 1108
CCB 4H 866 TRIP 1R-10	1. CCB 4H is open 2. If Hutchinson Island Substation has a fault CCB 4H should also indicate open	1. CCB 4H trips open 2. Notify Divison Dispatcher and/or System Protection			040 1108
CCB 4I 864 TRIP 1R-16	1. CCB 4H is open signifies trouble on "B" startup transformers or transformer trouble in Hutchinson Island Substation 2. NONE	1. CCB 4I trips open 2. Notify Divison Dispatcher and/or System Protection			040 1109
CCB 4E 861 TRIP 1R-22	1. CCB 4E is open 2. If "B" startup tranformers have a fault CCB 4I and associated 4160V and 6900V startup breakers should also indicate open	1. CCB 4E trips open 2. Notify Divison Dispatcher and/or System Protection			040 1109

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1R VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TRIP CIRCUIT FAILURE 1R-5	1. A trip circuit in switchyard has lost its DC power supply or has lost continuity 2. NONE	1. NONE 2. (A) Check switchyard DC power systems (B) Notify Division Dispatcher and System Protection			OAD 1109
SWITCHYARD STATION SERV FAIL. 1R-11	1. Loss of AC supply to one or more of the AC feeds into the switchyard 2. NONE	1. No auto action 2. Notify Division Dispatcher and substation Maint. Dept. at Walton Service Center			OAD 1109
XFMR TRIP / MID LINE NO. 2 TRIP 1R-17	1. Line has been transfer tripped from Hidway switching station 2. OCB 2M, OCB 2H should indicate open	1. OCB 2M, OCB 2H trip open 2. Notify Division Dispatcher and/or System Protection			OAD 1109
XFMR TRIP / MID LINE NO. 2 CHNL OUT 1R-23	1. Trouble on the transfer trip carrier channel 2. NONE	1. No auto action 2. Notify Division Dispatcher and/or System Protection			OAD 1109

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 2
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1R VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK 1R-6	BLANK			- - - - - - - - - - -	OM 1109
BLANK 1R-12	BLANK			- - - - - - - - - - -	1109
BLANK 1R-18	BLANK			- - - - - - - - - - -	1109
BLANK 1R-24	BLANK			- - - - - - - - - - -	1109

DOCUMENT REVISION DISTRIBUTION SHEET - UNIT II
OFF NORMAL & EMERGENCY OPER. PROCEDURE

DOCUMENT TITLE Pressurizer Relief/Safety Valve - Off Normal Operation

DOCUMENT FILE NUMBER 2-0120036

DOCUMENT REVISION NUMBER 2

DOCUMENT DISTRIBUTED ON 10-24-83
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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0120036
REVISION 2

2

1.0 TITLE:

PRESSURIZER RELIEF/SAFETY VALVE - OFF-NORMAL OPERATION

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group February 8 1983

Approved by C. M. Wethy Plant Manager February 11 1983

Revision 2 Reviewed by FRG 9-13, 1983

Approved by C M Wethy Plant Manager 10-20- 1983

3.0 PURPOSE AND DISCUSSION:

3.1 Purpose:

This procedure provides operator actions to be performed in the event of:

1. Pressurizer relief or safety valve leakage.
2. Malfunction of a Pressurizer relief valve causing it to open and remain open.
3. Malfunction of a Pressurizer safety valve causing it to open and remain open.

3.2 Discussion:

A stuck open Pressurizer relief or safety valve could result in depressurization of the Reactor Coolant System and the formation of voids in the system and possible formation of a steam bubble in the reactor vessel. Such occurrences would require immediate actions as described in EOP 2-0120042, "Loss of Reactor Coolant".

4.0 SYMPTOMS:

4.1 Any one or more of the following is indicative of a Pressurizer relief or safety malfunction:

1. An unexplained increase in temperature on:

   TIA-1106: Pressurizer relief line temperature (V-1475)

   TIA-1107: Pressurizer safety valve V-1200 line temperature

   TIA-1108: Pressurizer safety valve V-1201 line temperature

   TIA-1109: Pressurizer safety valve V-1202 line temperature

   TIA-1110: Pressurizer relief line temperature (V-1474)

2. Valid annunciation of:

   Pressurizer Relief Line High Temperature

   Pressurizer Safety Relief V-1200 High Discharge Temperature

   Pressurizer Safety Relief V-1201 High Discharge Temperature

   Pressurizer Safety Relief V-1202 High Discharge Temperature

   Safety/Relief Valve Open

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0120036, REVISION 2
PRESSURIZER RELIEF/SAFETY VALVE - OFF-NORMAL OPERATION

2

4.0 SYMPTOMS: (continued)

4.2 Any one or more of the following could be indicative of a Pressurizer relief or safety malfunction:

TIA-1116: Quench Tank temperature increase

PIA-1116: Quench Tank pressure increase

LIA-1116: Quench Tank level increase

Quench Tank High Pressure alarm

Quench Tank High Temperature alarm

Quench Tank High/Low Level alarm

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0120036, REVISION 2
PRESSURIZER RELIEF/SAFETY VALVE - OFF-NORMAL OPERATION

2

5.0 INSTRUCTIONS:

5.1 Immediate Automatic Action:

None

5.2 Immediate Operator Action:

1. Safety Valve Leakage:

   A. If a temperature increase is detected on TIA-1107, TIA-1108, or TIA-1109, leakage is from one of the respective safety valves. Refer to Off-Normal OP 2-0120031, "Excessive RCS Leakage".

   B. If flow is indicated on the acoustic flow monitor, determine which safety valve and refer to Off-Normal OP 2-0120031, "Excessive RCS Leakage".

2. Relief Valve Leakage:

   A. Determine which relief valve is leaking.

      1. If a temperature increase is detected on TIA-1106 or TIA-1110, identify leak as follows:

         TIA-1106: V-1475

         TIA-1110: V-1474

      2. One relief valve will normally be isolated during power operations. Place standby relief valve in service and isolate leaking valve if necessary. /R2

   B. Check acoustic flow monitor to determine which relief valve is leaking.

      1. If V-1474 is indicating flow, close MV-1476 and monitor TIA-1110. Ensure temperature starts to decrease.

      2. If V-1475 is indicating flow, close MV-1477 and monitor TIA-1106. Ensure temperature starts to decrease.

   C. If the acoustic monitor is not indicating flow, perform the following:

      1. If temperature increases on TIA-1106, close MV-1477. Verify temperature decrease.

      2. If temperature increases on TIA-1110, close MV-1476. Verify temperature decrease.

3. Safety Valve Opens:

   A. Refer to EOP 2-0120042, "Loss of Reactor Coolant".

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0120036, REVISION 2
PRESSURIZER RELIEF/SAFETY VALVE - OFF-NORMAL OPERATION

2

5.0 INSTRUCTIONS: (continued)

5.2 (continued)

4. Relief Valve Opens and Fails to Close:

1. Observe the red/green indicating lights and acoustic flow monitors to determine which relief valve has open d.
2. Select relief valve control switch to OVERRIDE position. Verify valve closure by observing position indicating lights, discharge line temperature, Quench Tank parameters, Pressurizer pressure, and the acoustic flow monitor.
3. If Pressurizer pressure continues to decrease below 2350 psia and/or Quench Tank parameters indicate that the valve has not closed as required, then immediately close respective motor operated valve.
4. If it is not known which PORV is stuck open, immediately shut both relief isolation valves.

   MV-1476 for V-1474

   MV-1477 for V-1475

5.3 Subsequent Operator Action:

1. Safety Valve Malfunction:

1. In Modes 1, 2, and 3 with one Pressurizer code safety inoperable, either restore to operable in 15 minutes or be in at least Hot Standby within 6 hours and in Hot Shutdown within the following 6 hours.
2. In Mode 4, and 5 with no Pressurizer code safety operable, immediately suspend all operations involving positive reactivity changes and place an operable Shutdown Cooling Loop into operation.

2. Relief Valve Malfunction:

1. Investigate and correct cause of malfunction.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0120036, REVISION 2
PRESSURIZER RELIEF/SAFETY VALVE - OFF-NORMAL OPERATION

2

6.0 REFERENCES:

6.1 CE P&ID E-13172-310-108 and 109

6.2 St. Lucie Unit 2 FSAR, Section 5.2.4.4.C and 5.5.3.2

6.3 St. Lucie Unit 2 Technical Specifications 3.4.2, 3.4.2.1 and 3.4.4

7.0 RECORDS REQUIRED:

7.1 Normal Log Entries

DOCUMENT REVISION DISTRIBUTION SHEET - UNIT II
OFF NORMAL & EMERGENCY OPER. PROCEDURE

DOCUMENT TITLE Natural Circulation Cooldown

DOCUMENT FILE NUMBER 2-01200 40

DOCUMENT REVISION NUMBER 3

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT NO. 2
EMERGENCY OPERATING PROCEDURE NUMBER 2-0120040
REVISION 3

NATURAL CIRCULATION/COOLDOWN
(NC/C)

TOTAL NO. OF PAGES 26

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0120040
REVISION 3

1.0 SCOPE:

This procedure provides instructions to the operator for two conditions:

A. Total loss of Reactor Coolant Pump (RCP) flow to the reactor core.

B. Plant Cooldown using natural circulation flow.

2.0 SYMPTOMS:

2.1 Loss of off-site power.	2.1 Indications Start-up Transformer breakers open
2.2 Loss of or low voltage on 6.9 KV buses.	2.2 Indications 6.9 KV switchgear 2A1, 2B1 differential current trip. 6.9 KV switchgear 2A1, 2B1 UNDERVOLTAGE alarm.
2.3 RCP Overload	2.3 Indications Alarm
2.4 REACTOR COOLANT LOW FLOW channel pre-trip.	2.4 Indications Alarm
2.5 REACTOR COOLANT LOW FLOW CHANNEL trip	2.5 Indications TCBs open. CEAs inserted.

ST. LUCIE UNIT NO. 2
EMERGENCY OPERATING PROCEDURE NUMBER 2-0120040, REVISION 3
NATURAL CIRCULATION/COOLDOWN

2

2.0 SYMPTOMS: (continued.)

2.6 Loss of Component Cooling Water (CCW) flow to RCPs for > 10 minutes, requiring manual trip of all four pumps.	2.6 Indications Reactor Trip from loss of CCW flow FIA-1158, FIA-1168 FIA-1178, FIA-1188
2.7 Valid SIAS-CIAS caused by low RCS pressure requiring all RCPs to be tripped after all control Element Assemblies have been inserted for 5 seconds.	2.7 Indications SIAS-CIAS actuation Low RCS pressure CEAs inserted

3.0 AUTOMATIC ACTION:	INITIATING EVENT
3.1 Reactor coolant low flow reactor trip.	3.1 95% of full RCS flow
4.0 IMMEDIATE OPERATOR ACTION:	LOCATION
4.1 Carry out immediate operator actions for reactor trip in accordance with Off-Normal OP 2-0030130, "Reactor Trip/ Turbine Trip".	4.1 RTGB-201, RTGB-202, RTGB-204

ST. LUCIE UNIT NO. 2
EMERGENCY OPERATING PROCEDURE NUMBER 2-0120040, REVISION 3
NATURAL CIRCULATION/COOLDOWN

5.0 SUBSEQUENT ACTIONS: CHECK

5.1 Implement the Emergency Plan as necessary in accordance with EPIP 3100021E, "Duties and Responsibilities of the Emergency Coordinator." _____ /R3

5.2 Establish and maintain hot leg temperature (T_h) at least 20°F below the saturation temperature corresponding to RCS pressure (refer to Figure 1) by doing the following: _____

1. Operate Pressurizer heaters or auxiliary spray to increase or maintain Pressurizer pressure and to provide subcooling margin. _____

NOTE
If natural circulation was caused by a loss of Off-Site Power, the Backup heaters must be reset and the Backup Interlock B/P key switch must be placed in the PRESSURE position. This will allow operation of B-1 and B-4 banks of the Backup heaters.

2. Increase turbine bypass or atmospheric steam dump flow to reduce or maintain RCS temperature and prevent lifting secondary safeties. _____

5.3 Verify that the Pressurizer level control system is functioning to maintain Pressurizer level. If necessary, manually operate charging and letdown to restore and maintain normal Pressurizer level. If operable Charging Pumps cannot restore RCS inventory and Pressurizer level, observe RCS and Containment parameters for indications of a LOCA. _____

5.4 Restore and maintain S/G levels at approximately 65%. When feeding the S/Gs, use caution to avoid excessively cooling the RCS. _____ /R3

CAUTION:
DO NOT EXCEED a cooldown rate of 75°F/hr.

ST. LUCIE UNIT NO. 2
EMERGENCY OPERATING PROCEDURE NUMBER 2-0120040, REVISION 3
NATURAL CIRCULATION/COOLDOWN

2

5.0 SUBSEQUENT ACTIONS: (continued)

		CHECK
5.5	Verify by the following indications that natural circulation flow has been established within approximately 15 minutes after RCPs were tripped:	
	1. Loop T ($T_h - T_c$) less than normal full power ΔT ($<46^{\circ}F$).	_____
	2. Cold leg temperatures (Tc) constant or decreasing.	_____
	3. Hot leg temperatures (Th) stable (i.e., not steadily increasing).	_____
	4. No abnormal differences between Th RTD's and core thermocouples.	_____
5.6	Confirm boron concentration in the RCS by sampling from as many different points as possible.	_____
5.7	Maintain the plant in a stabilized condition based upon auxiliary plant system availability (e.g., condensate inventory).	_____
5.8	If one or more RCPs are restored to an operable condition within 10 minutes, start an RCP in each loop if the following criteria are satisfied:	
	1. At least one Steam Generator is removing heat from the RCS.	_____
	2. Pressurizer level and pressure are responding normally to the Pressurizer Level and Pressure Control Systems.	_____
	3. The RCS is at least $20^{\circ}F$ subcooled (refer to Figure 1).	_____
	4. The yellow PERMISSIVE light on the associated pump control switch is lit.	_____
	5. No indication of voids in RCS are present.	_____

NOTE

RCP may be bumped to enhance natural circulation flow if required with void indications present.

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5.0 SUBSEQUENT ACTIONS: (continued)

CHECK

5.9 If all four RCPs can be returned to operable status within 10 minutes, power operation may be resumed under the direction of the Nuclear Plant Supervisor. If RCS cooldown is required under these conditions, the cooldown should be accomplished using forced circulation. _____

5.10 If required to conduct a plant cooldown to shutdown cooling (SDC) conditions using natural circulation, proceed as follows:

1. Establish as stable plant conditions as circumstances permit. _____

2. Commence boration to maintain required Shutdown Margin (SDM) during cooldown. _____

3. Commence an RCS cooldown by utilizing one of the following methods: _____

   A. If the Condenser is available, use the Steam Dump Bypass System and Main or Auxiliary Feedwater.

   B. If the Condenser is not available, use the atmospheric dump valves and Main or Auxiliary Feedwater.

4. Continuously verify natural circulation flow throughout the cooldown process. _____

5. Observe all available indications to determine conditions within the RCS. _____

   A. Use the OSPDS Saturation Margin Display (SMD) Th, Tc, and RCS pressure to verify that the RCS is subcooled.

   B. Figure 1 or the nomograph on RTGB-203 should be used for comparison with the OSPDS SMD. Subcooled margin can also be determined by subtracting Th from Pressurizer temperature (TI-1101). /R3

   C. Incore thermocouples, indicated on the OSPDS, can also be used for indication of Th. _____ /R3

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5.0 SUBSEQUENT ACTIONS: (continued)

5.10 (continued)

CHECK

6. Establish and maintain an RCS cooldown rate of 50°F/hr (See Figure 2). The highest RCS cold leg temperature shall be plotted every 30 minutes on a copy of Figure 4. The RCS temperature and pressure shall be determined to be within the limits of Technical Specification Fig. 3.4-3 at least once per 30 minutes during cooldown. _____

7. The Pressurizer water phase shall be recorded on Table 1 and plotted every 30 minutes on Figure 4. This temperature shall also be compared with the auxiliary spray water (TI-2229) temperature to ensure that differential temperature does not exceed 350°F. _____ /R3

8. When using auxiliary spray to decrease Pressurizer pressure, maximize the use of letdown flow through the Regenerative HX, when available, to pre-heat the auxiliary spray. Record each auxiliary spray cycle per AP 0010134, "Component Cycles and Transients". _____ /R3

9. Maintain RCS pressure above and to the right of curve values shown on Figure 3. _____

10. During the cooldown, maintain a minimum of 20°F subcooling by the following methods (listed in order of preference): _____

A. Manual control of Pressurizer heaters and auxiliary spray.

NOTE:
Use only one Charging Pump.

B. Operating Charging or HPSI Pumps.

11. During the cooldown, maintain Pressurizer level by the following methods (listed in order of preference): _____

a. Control charging and letdown.

b. Operating HPSI Pumps.

12. Monitor the available condensate inventory and replenish the CST as required. _____

CAUTION:
CONDENSATE STORAGE TANK VOLUME SHALL BE MAINTAINED PER TECHNICAL SPECIFICATION 3.7.1.3.

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5.0 SUBSEQUENT ACTIONS: (continued)

CHECK

5.10 (continued)

13. During RCS cooldown and depressurization, perform the evolutions specified in Appendix C. _____

14. During RCS depressurization monitor for void formation in the reactor vessel upper head region. Indications of possible void formation include: _____

    A. RCS or reactor head thermocouple (OSPDS) temperature = Tsat for the corresponding RCS pressure. /R3

    B. A Pressurizer level increase significantly greater than expected while operating auxiliary spray.

    C. A Pressurizer level decrease while operating charging.

    D. If the Pressurizer Level Control System is in automatic, an unanticipated letdown flow greater than charging flow.

    E. OSPDS Heated Junction Thermocouple reactor vessel level indication. /R3

15. If voiding in the RCS is indicated, perform the following:

    A. Isolate letdown by closing V-2515, V-2516 and V-2522 (Letdown Containment Isol). _____

    B. Stop the RCS depressurization. _____

    C. Stop the RCS cooldown. _____

    D. If possible, review and select one RCP in each loop for restarting. _____

    E. Repressurize the RCS to eliminate the void by operating Pressurizer heaters or HPSI and Charging Pumps. _____

NOTE
If the HPSI or Charging pumps are utilized to charge the RCS solid, the pumps should be stopped after solid RCS conditions are indicated.

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NATURAL CIRCULATION/COOLDOWN

5.0 SUBSEQUENT ACTIONS: (continued)

CHECK

5.10 (continued)

14. (continued)

F. If required to continue the cooldown with the known presence of a steam void in the reactor vessel head, proceed using the Fill and Drain Method (Appendix D). _____

G. When conditions permit, re-initiate letdown and resume depressurization to SDC initiation pressure. _____

15. If off-site power has been lost and it becomes necessary to augment the cooldown rate, refer to Appendix E. _____

16. When RCS temperature reaches 325°F, maintain the RCS at this temperature for an additional 20.4 hours (See Figure 2). _____

17. Upon completion of the required "soak" period, initiate SDC in accordance with Appendix F. _____

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Figure [illegible]:
SATURATION

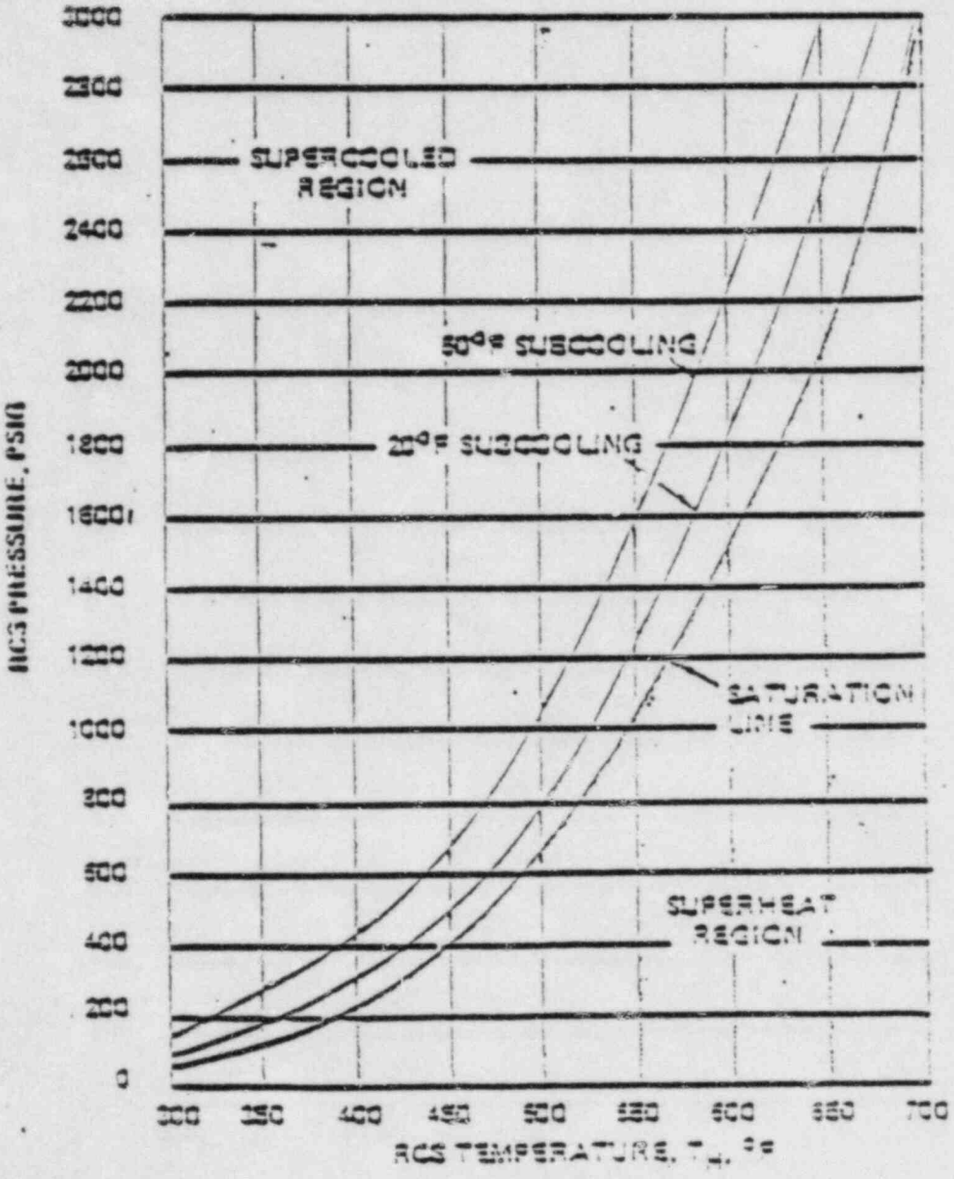

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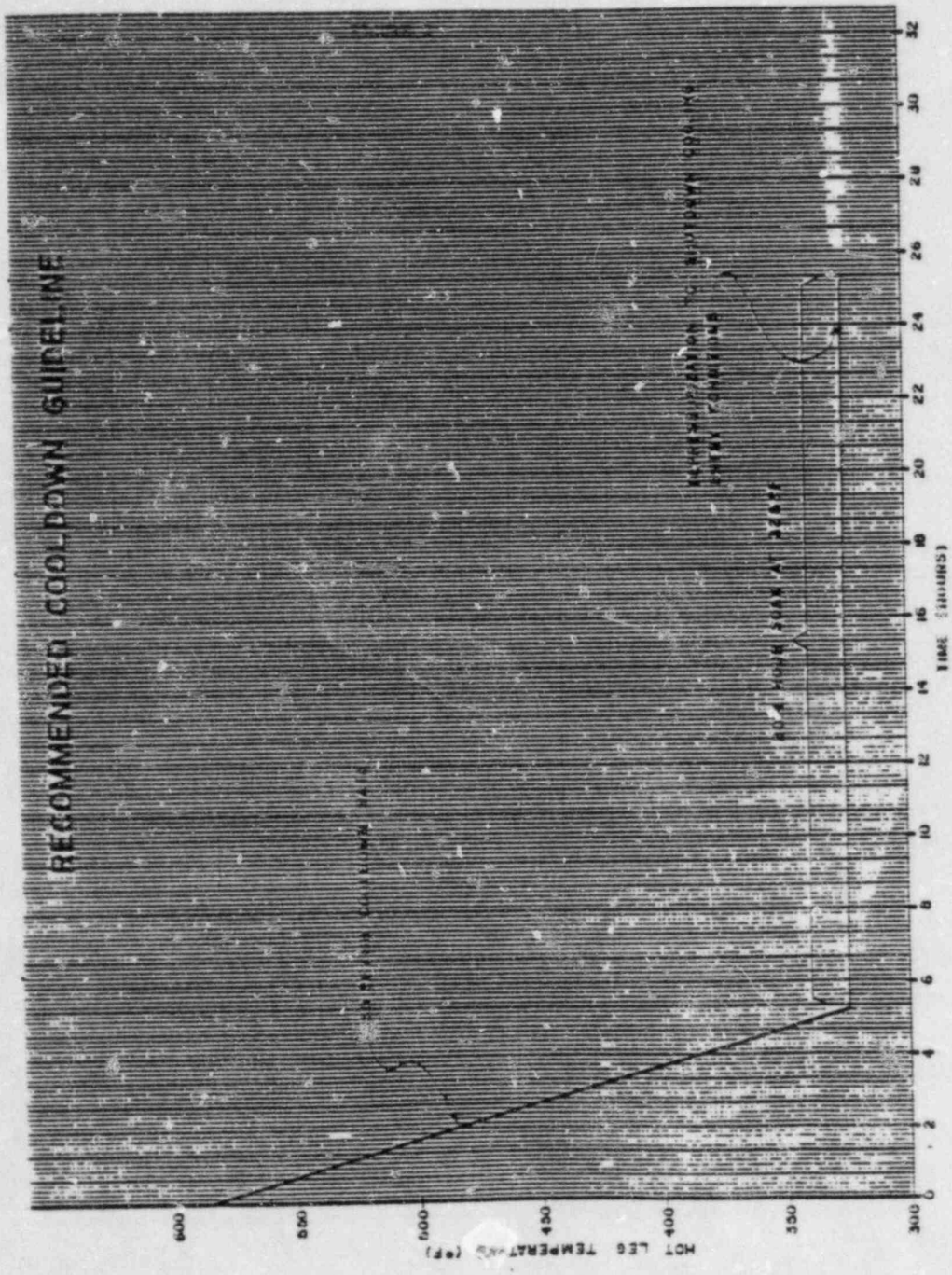
FIGURE 2



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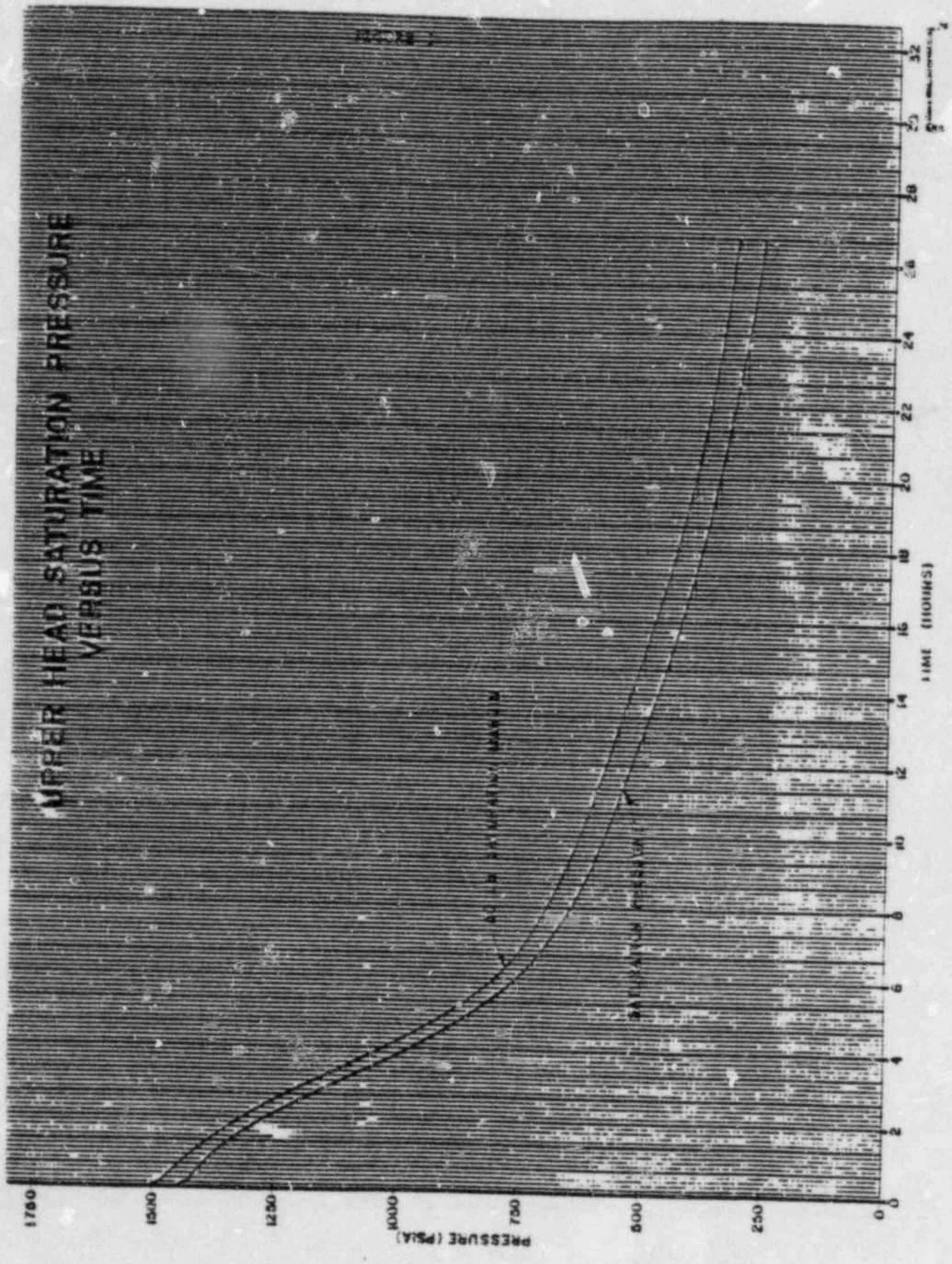
NATURAL CIRCULATION/COOLDOWN

FIGURE 3



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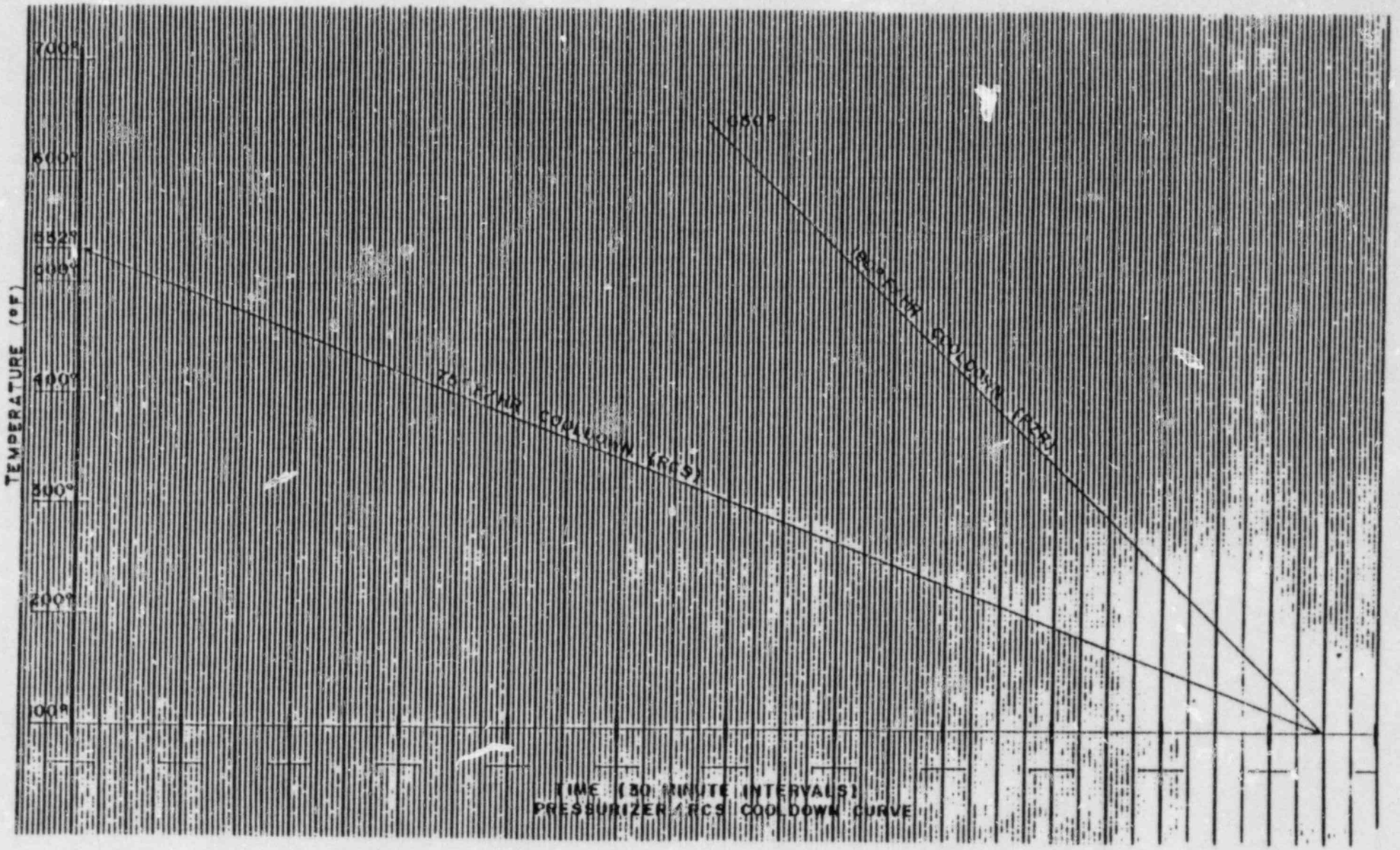
NATURAL CIRCULATION/COOLDOWN
FIGURE 4

2



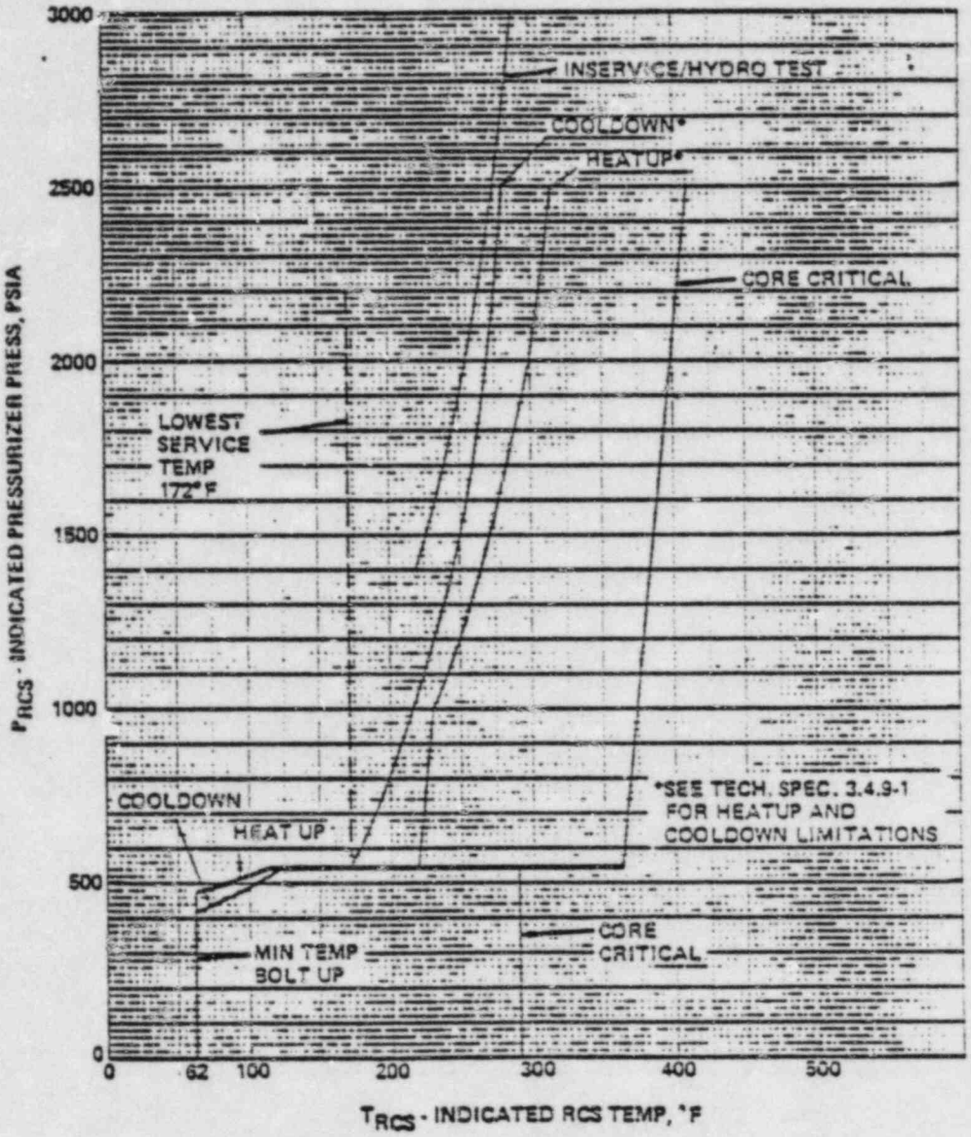


FIGURE 3.4-3

REACTOR COOLANT SYSTEM
PRESSURE TEMPERATURE LIMITATIONS
2 TO 10 YEARS OF OPERATION

ST. LUCIE UNIT NO. 2
EMERGENCY OPERATING PROCEDURE NUMBER 2-0120040, REVISION 3
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TABLE 1

DATE ____________________

TIME every 30 minutes	COLUMN 1 PRESSURIZER TEMP TI-1101	COLUMN 2 AUX SPRAY LINE TEMP TI-2229#	COLUMN 3 PRESSURIZER PRESS PI 1107-1/1108-1	* DIFFERENCE COLUMN 1 MINUS COLUMN 2

*LIMITED TO ≤ 350° AND ≥ 50°

IF > 200°F, RECORD PER AP 0010134
RCS TEMP AND PRESSURE
SHALL BE WITHIN LIMITS
OF FIGURE 3.4-3 FOR EACH
30 MINUTE PERIOD.

#CHARGING TEMP OUTLET REGEN HX.

______________________ Operator ________ Shift

______________________ Operator ________ Shift

______________________ Operator ________ Shift

/R3

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APPENDIX A

PRECAUTIONS

1. Natural circulation flow cannot be verified until the RCP's have stopped coasting down after being tripped.

2. Due to increased loop transit times, verification of plant responses to a plant change cannot be accomplished until approximately 10 to 15 minutes following the action.

3. After a cold shutdown boron concentration is attained in the RCS, makeup water added to the RCS during the cooldown should be at least the same boron concentration as in the RCS to prevent any dilution of RCS boron concentration.

4. Once Pressurizer cooldown has begun, Pressurizer level indication decalibration will occur (indication on the normal Pressurizer level indication will begin to deviate from the true Pressurizer level). The temperature compensation correction curve posted on the RTGB should be used to determine true Pressurizer water level. Cold calibrated Pressurizer level indication is also available for lower Pressurizer temperatures.

5. Minimize the use of Pressurizer auxiliary spray whenever the temperature differential between the spray water and the Pressurizer is >200°F. Any auxiliary spray cycle with a temperature differential > 200°F shall be recorded in accordance with AP 0010134.

6. If Pressurizer spray is not available, boron concentration in the Pressurizer may be lower than the RCS loop boron concentration. RCS boron concentration should be increased to avoid being diluted below minimum requirements by a possible Pressurizer outsurge.

7. If either the HPSI or LPSI Pumps are utilized to collapse any steam voids in the RCS by charging the system solid, the pump(s) should be stopped after solid conditions are indicated. This will minimize the potential for any inadvertant flowpath from the RCS back to the Refueling Water Tank.

8. If the RCS is solid, closely monitor any makeup or draining and any system heatup or cooldown to avoid any unfavorable rapid pressure excursions.

9. During all phases of the cooldown, monitor RCS temperature to avoid exceeding a cooldown rate > 100°F/hr.

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APPENDIX A (continued)

PRECAUTIONS

10. If cooling down by natural circulation with an isolated S/G, an inverted ΔT (i.e., $T_c > T_h$) may be observed in the idle loop. This is due to a small amount of reverse heat transfer in the isolated S/G and will have no effect on natural circulation flow in the intact S/G. /R3

11. All available indications should be used to aid in diagnosing the event since it may cause irregularities in a particular instrument reading. Critical parameters must be verified when one or more confirmatory indications are available.

12. When establishing AFW flow to the S/Gs, use S/G levels as well as header flowrates to ensure each S/G is receiving AFW. /R3

13. Condensate inventory should be monitored periodically to ensure that an adequate supply is available. Makeup to the Condensate Storage Tank should be started as soon as practical. If CST level decreases to minimum required by Technical Specifications, the plant should be immediately cooled down utilizing the Fill and Drain Method (Appendix D).

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NATURAL CIRCULATION/COOLDOWN

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APPENDIX B

DISCUSSION

Reactor Coolant Pump forced circulation and heat transfer to the S/Gs is the preferred mode of operation for decay heat removal whenever plant temperatures and pressures are above the Shutdown Cooling System (SDC) entry conditions. The natural circulation capability at the St. Lucie Plant provides an emergency means for core cooling using the S/Gs, if the RCPs are unavailable. /R3

Natural circulation is governed by decay heat, component elevations, primary to secondary heat transfer, loop flow resistance, and voiding. Component elevations at St. Lucie Plant are such that satisfactory natural circulation decay heat removal is obtained by density differences between the bottom of the core and the top of the S/G tube sheet. An additional contribution to natural circulation flowrate is the density difference obtained as the coolant passes through the S/G U-tubes, but this is not required for satisfactory natural circulation. Natural circulation is assured even if the U-tubes are partially uncovered on the S/G secondary side. Because of the temperature distribution in the S/G U-tubes, there is no degradation in primary to secondary heat transfer as long as the secondary level covers at least 1/3 of the tube height. By ensuring that the loop ΔT is less than the full power ΔT, the power-to-flow ratio is assured to be less than 1.0 during natural circulation. /R3

Satisfactory natural circulation heat removal can be obtained with either one or two S/Gs. Unequal AFW flow to the S/Gs will not lead to unsatisfactory natural circulation as long as all the decay heat is being removed through the S/Gs. /R3

Assurance that the RCS is being maintained in a subcooled condition can be obtained as follows. With the OSPDS Saturation Margin Display (SMD) operating normally, the graph on RTGB-203 is used in conjunction with the SMD to eliminate dependence on a single instrument. With the SMD inoperable, reference to the nomograph utilizing Control Room indication such as hot leg temperature, Pressurizer pressure, and incore thermocouples will determine the margin to saturation. Subcooling margin can also be determined by subtracting hot leg temperature from Pressurizer temperature (TI-1101).

During normal plant operation under conditions of forced circulation flow, there is only a small flow of coolant in the reactor vessel head area. During periods of natural circulation, there is little, if any, effective flow. If the RCS is cooled down using natural circulation, it is possible to generate a steam void in the reactor vessel head when saturation conditions develop. These conditions can be produced by the temperature sustained by the retained metal heat and decreased RCS pressure during cooldown.

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NATURAL CIRCULATION/COOLDOWN

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APPENDIX B (continued)

DISCUSSION

Analyses have demonstrated that the upper reactor head region fluid can be cooled to SDC entry conditions without void formation using a hot leg temperature cooldown rate of 50°F/hr in approximately 14.2 hours. In order to provide additional conservatism, this procedure directs that a cooldown rate of about 50°F/hr to 325°F be utilized, followed by a soak at 325°F for 20.4 hours for a total cooldown time of approximately 25.7 hours from cooldown initiation. (See Figure 2). The condensate supply required for this cooldown is 270,500 gallons. Makeup water can be supplied from the Water Treatment Plant and the two 500,000 gallon City Water Storage Tanks, or Treated Water Storage Tank. Pumping capability from all sources can be supplied from the Diesel Generators.

An alternative to the above cooldown procedure is the fill and drain method (See Appendix D). This method may be employed should an extremely low probability event occur which could cause a loss of condensate makeup capacity or require a rapid RCS de-pressurization rate. It provides for cooling of the upper reactor vessel head region by using auxiliary spray to the Pressurizer to lower RCS pressure and create a void in the upper head. Voiding in the upper head flushes hot upper head fluid into the cooler RCS where it mixes with RCS water. The water flushed out of the upper head will cause a surge of water from the RCS into the Pressurizer. The process is halted by stopping the spray. The insurge compresses the pressurizer steam space, raising the pressure, thus stopping the insurge and halting flashing in the upper head. Charging to the RCS will then force fluid into the upper head. Mixing of colder loop water with the hot upper head cools the upper head and causes an outsurge from the Pressurizer. The process is continued until the upper head is solid. The cycle is then repeated until RCS temperature and pressure have been reduced to SDC entry conditions.

The above procedure has been analyzed and performed successfully twice at St. Lucie and is considered a safe, alternative method of natural circulation cooldown.

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NATURAL CIRCULATION/COOLDOWN

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APPENDIX C

RCS COOLDOWN/DE-PRESSURIZATION CHECKOFF LIST

INITIAL

1. At RCS pressure of 1750 psig, isolate and bypass the following transmitters:

_____ A. FT-2212 (Charging Hdr Flow Transmitter)

> NOTE
> Close the valve on the transmitter marked HIGH SIDE, open the valve marked BYPASS, and close the valve marked LOW SIDE.

_____ B. PT-2212 (Charging Hdr Pressure Transmitter)

> NOTE
> Close its isolation valve.

_____ 2. At RCS pressure of 1836 psia, the "SIAS Channel Activation Block Permiss" annunciator will come on. Block Channels A and B of SIAS by turning the key-interlocked switches in the BLOCK direction.

> NOTE
> If the channels have been blocked, the two annunciators "SIAS Channel A Blocked" and "SIAS Channel B Blocked" will come on.

3. At RCS pressure <1750 psia and prior to initiating SDC operations, isolate the Hydrazine Injection System by:

_____ A. Racking out 2A Hydrazine pump (Bkr 2-41259).

_____ B. Racking out 2B Hydrazine Pump (Bkr 2-42053).

_____ C. Racking out 2A Containment Spray Pump (Bkr 2-20203).

_____ D. Racking out 2B Containment Spray Pump (Bkr 2-20407).

_____ 4. At Steam Generator pressure of 685 psig, the "MSIS Channel A Actuation Block Permissive" and "MSIS Channel B Actuation Block Permissive" annunciators will come on. Block the MSIS channels by turning the key-interlocked switches in the BLOCK direction.

> NOTE
> If the channels have been blocked, the two annunciators "MSIS Channel A Actuation Blocked" and "MSIS Channel B Actuation Blocked" will come on.

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NATURAL CIRCULATION/COOLDOWN

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APPENDIX C (continued)

RCS COOLDOWN/DE-PRESSURIZATION CHECKOFF LIST

INITIAL

_____ 5. Prior to reaching RCS pressure of 1100 psia, unisolate and place in operation the standby Pressurizer level control and letdown pressure control valves.

6. When RCS pressure is 650 psia, de-pressurize the Safety Injection Tanks to 260 psia by opening the SIT vent valves.

_____ 2A1 SIT at 260 psia

_____ 2A2 SIT at 260 psia

_____ 2B2 SIT at 260 psia

_____ 2B1 SIT at 260 psia

7. When RCS temperature is < 500°F and RCS pressure is < 1500 psia, perform the following:

A. Close the Containment Spray (CS) pump discharge valves:

_____ V-07145

_____ V-07130

B. Close and tag the manual valves in the CS header:

_____ V-07162 (A Hdr)

_____ V-07165 (B Hdr)

C. Close Containment Spray motor operated valves:

_____ MV-07-3 (A Hdr)

_____ MV-07-4 (B Hdr)

NOTE: Manual valves at present.

8. When RCS cold leg temperature reaches 280°F, annunciators "PORV 1474 LTOP CONDTN SELECT LTOP" and "PORV 1475 LTOP CONDTN SELECT LTOP" will come on.

_____ A. Close MOV-1476 and MOV-1477 (Relief Block Valve).

_____ B. Select LTOP on control switches for PORV-1474 and PORV-1475, and ensure that neither PORV opens.

_____ C. Open MOV-1476 and MOV-1477.

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NATURAL CIRCULATION/COOLDOWN

APPENDIX C (continued)

RCS COOLDOWN/DE-PRESSURIZATION CHECKOFF LIST

INITIAL

9. When RCS pressure is $\leq$ 275 psia rack in the breakers for and then close the SIT discharge valves by placing the switch in the CLOSE position.

_____ MV-3614 (Bkr 2-41219)

_____ MV-3624 (Bkr 2-41211)

_____ MV-3634 (Bkr 2-42117)

_____ MV-3644 (Bkr 2-42048)

_____ 10. Rack out the breakers for the SIT discharge valves.

11. When RCS temperature reaches 325°F and RCS pressure reaches 275 psia, perform the following:

_____ A. Remove the trip and close fuses on one HPSI pump, and tag with caution tags.

NOTE
Ensure the remaining HPSI pump is operable.

_____ B. Remove the trip and close fuses on the 2A and 2B CS Pumps, and tag with caution tags.

12. When RCS temperature reaches 200°F, perform the following:

_____ A. Remove the trip and close fuses on the remaining HPSI pump and tag with caution tags.

_____ B. Tag out one Charging Pump such that no more than two Charging Pumps are available for dilution below 200°F.

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APPENDIX D

RCS FILL AND DRAIN METHOD OF COOLING

REACTOR VESSEL HEAD REGION

NOTE
This method of RCS cooldown should only be employed in the event that rapid de-pressurization of the RCS is required, or Condensate Storage Tank level decreases below minimum required by Tech Specs.

CAUTION
DURING THIS EVOLUTION, PRESSURIZER LEVEL IS NOT A VALID INDICATOR OF RCS INVENTORY DURING TRANSIENT CONDITIONS. CARE SHOULD BE EXERCISED TO OBSERVE OTHER PARAMETERS WHICH WOULD INDICATE ANY LOSS OF RCS INVENTORY.

1. Take manual control of the charging and letdown system.

2. Lower RCS pressure by using auxiliary sprays into the Pressurizer.

3. As voiding occurs in the upper reactor vessel head, a surge of water from the RCS will cause Pressurizer level to increase rapidly. Terminate auxiliary spray prior to Pressurizer level increasing to 70% indicated level.

4. Cool the upper reactor vessel head region by charging with a Charging Pump to the RCS loop(s). Continue charging until either of the following conditions occur:

   4.1 Pressurizer level decreases to 30% indicated level

   OR

   4.2 The upper reactor head is charged solid.

   NOTE
   A solid upper head condition will be evident by an increasing Pressurizer level as charging to the loops is continued.

5. Repeat steps 1 through 4 above until SDC entry conditions are established.

NOTE
If the above were to prove unsuccessful, Pressurizer heaters may be used (if sufficient volume is available) to heat up the pressurizer and remove a vessel head void. This strategy should be used only as a last resort and will take an hour or more to be successful.

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APPENDIX E

AUGMENTED COOLDOWN WITH THE STEAM DUMP BYPASS SYSTEM (SBCS)

If the desired RCS cooldown rate cannot be attained, the SBCS can be used either by itself or in conjunction with the atmospheric dump valves. Since Condenser vacuum may not be available, the following actions should be taken to place the SBCS in service:

1. Call available maintenance personnel onsite to remove the target flange on a SBVS valve (preferably V-8803).

NOTE
If no maintenance personnel are on site, call the Duty Call Supervisor.

2. Isolate all other SBCS valves from the Condenser (except the selected valve).

3. Jumper low vacuum interlock in SBCS (performed by I & C).

4. Reset the Condenser vacuum interlock by depressing the reset button (on the outside of the RPS #2 cabinet) and observe that the Condenser vacuum interlock yellow light goes out.

NOTE
This will bypass the vacuum permissive and allow operation of V-8803 to atmosphere after removal of the target flange.

5. Place all SBCS controllers in MANUAL.

6. When the target flange for V-8803 has been removed and the vacuum interlock jumpered, manually adjust the controller for V-8803 to control RCS cooldown rate.

CAUTION
DO NOT EXCEED A COOLDOWN RATE $\geq$ 75°/HR.

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NATURAL CIRCULATION/COOLDOWN

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APPENDIX F

INITIATION OF SHUTDOWN COOLING

NOTE: Perform bracketed steps for train "B"

_____ 1. Open HCV-3657 [3512] (SDC disch to LPSI hdr).

_____ 2. Open MV-3517 [3658] (LPSI pump supply to SDC HX).

_____ 3. Check to be open FCV-3306 [3301] (SDC HX bypass).

_____ 4. Open MV-3536 [3539] (SDC recirc warmup).

_____ 5. Open MV-3456 [3457] (LPSI pump return from SDC HX).

_____ 6. Check to be open V-3767 [3205] (LPSI pump mini-flow).

_____ 7. Check to be open V-3495 and 3659 [3496 and 3660] (Mini-flow hdr stop).

_____ 8. Start 2A [2B] LPSI pump.

_____ 9. Check to be closed V-3661 (Check valve leakage drain).

_____ 10. Close HCV-3657 [3512] (SDC disch to LPSI hdr).

_____ 11. Close V-3767 [3205]. Ensure pump minimum flow requirements are met.

_____ 12. Continue to run LPSI pump to heat the SDC system as much as pratical. Do not allow SDC pressure to increase >300 PSIA on PI-3307 (3304). /R3

_____ 13. Verify flow on FI-3306 [3301].

_____ 14. Stop the LPSI pump(s). /R3

_____ 15. Close V-3644 [3432] (LPSI pump suction from RWT).

_____ 16. Close MV-3536 [3539] (SDC recirc warmup).

_____ 17. Check RCS pressure < 275 psia, then open V-3480, 3481 and 3664 [V-3651, 3652 and 3665] (SDC return valves).

_____ 18. Open HCV-14-3A [3B] (CCW to SDC HX).

_____ 19. Start 2A [2B] LPSI pump.

_____ 20. Slowly inch open HCV-3625 [3635] to bring SDC system up to temperature.

_____ 21. Adjust FIC-3306 [3301] to maximum flow in AUTO mode.

_____ 22. When temperature has stabilized, open fully HCV-3615 and 3625 [3635 and 3645] and adjust FIC-3306 [3301] to control at 3000 gpm in AUTO.

_____ 23. Adjust HCV-3657 [3512] to maintain desired cooldown rate.

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6.0 DISCUSSION:

See Appendix B.

7.0 REFERENCES:

7.1 CE Emergency Operating Procedure Guidelines, CEN-152

7.2 EP 1-0120040, "Natural Circulation/Cooldown".

8.0 RECORDS REQUIRED:

8.1 Normal log entries.

9.0 APPROVAL:

Reviewed by Facility Review Group October 26 1982

Approved by J. H. Barrow (for) Plant Manager October 26 1982

Revision 3 Reviewed by F R G Aug 9, Aug 24 1983

Approved by [signature] Plant Manager 10-20-1983

"LAST PAGE"

EP 2-0120040
Rev. 3
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DOCUMENT REVISION DISTRIBUTION SHEET - UNIT II
OFF NORMAL & EMERGENCY OPER. PROCEDURE

DOCUMENT TITLE EMERGENCY BORATION

DOCUMENT FILE NUMBER 2-0250030

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0250030
REVISION 2

2

1.0 TITLE:

EMERGENCY BORATION

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group February 9 1982

Approved by C. M. Wethy Plant Manager February 15 1982

Revision 2 Reviewed by FRG 8-24 1983

Approved by C M Wethy 10-20- 1983

3.0 PURPOSE AND DISCUSSION:

This procedure provides instructions for the injection of concentrated boric acid solution into the Reactor Coolant System (RCS) via the Charging Pumps.

In the event that normal charging flow is unavailable, flow can be directed to the Auxiliary HPSI header from the discharge of the Charging Pumps.

The Boron Concentration Control System is lined up to automatically emergency borate the RCS on a Safety Injection Actuation Signal (SIAS). When shutdown margin has been confirmed or the SIAS signal reset, it is desirable to restore the Boron Concentration Control System to the automatic make-up mode, or the Refueling Water Tank (RWT) to the suction of the Charging Pumps to prevent overborating.

4.0 SYMPTOMS:

Any one of the following conditions requires emergency boration:

4.1 Unanticipated or uncontrolled RCS cooldown following a reactor trip as indicated by:

1. Reactor Low Tave-Tref alarm
2. Decreasing reactor coolant wide range temperature indication
3. Uncontrolled decrease of Pressurizer level or pressure
4. Uncontrolled decrease in steam pressure

ST. LUCIE UNIT 2
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EMERGENCY BORATION

4.0 SYMPTOMS: (Cont.)

4.2 Unexplained or uncontrolled reactivity increase as indicated by:

1. Abnormal Control Element Assembly insertion

2. Abnormal increase in reactor coolant temperature, Tave or reactor power

3. Abnormal increase in reactor power or count rate when shut down

4.3 Loss of Shutdown Margin due to excessive Control Element Assembly insertion as indicated by:

1. Power dependent insertion (data processor) alarm

2. Power dependent insertion (ADS) alarm

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OFF-NORMAL OPERATING PROCEDURE NO. 2-0250030, REVISION 2
EMERGENCY BORATION

2

5.0 INSTRUCTIONS:

5.1 Immediate Automatic Actions

None

5.2 Immediate Operator Actions

5.2.1 Place Makeup Mode Select Switch in the MANUAL or BORATE position.

5.2.2 Verify V-2525 (Boron Load Control Valve) is closed.

5.2.3 Place either 2A or 2B Boric Acid Makeup Pump in the RUN position.

5.2.4 Place V-2514 (Emergency borate valve) in the OPEN position.

5.2.5 Close V-2650 (BAMT 2A Recir) and V-2651 (BAMT 2B Recir).

5.2.6 If V-2514 fails to open, open either V-2509 (BAMT 2A gravity feed) or V-2508 (BAMT 2B gravity feed) and close V-2501 (VCT outlet).

NOTE: If VCT level is above 5%, valve V-2501, VCT outlet, will not remain closed in the AUTO position unless switch is held to CLOSED. /R2

5.2.7 If emergency boration is warranted due to violation of Power Dependent Insertion Limit, observe Tave, Tref, and reactor power while borating the Reactor Coolant System sufficiently to insure restoration of shutdown margin and the clearing of PDIL alarms.

5.2.8 For other reactivity changes in Section 4.0 as boron is added, observe Tave, Tref, reactor power, and Control Element Assembly position until the reactivity excursion is under control.

5.3 Subsequent Actions

5.3.1 After the boration, place V-2514 in the CLOSED position. After verifying closure, position switch to the AUTO position.

5.3.2 Open V-2650/V-2651 B.A. Pump Recirc Valve(s).

5.3.3 If gravity feed was used, open V-2501 and close V-2508/V-2509.

5.3.4 Stop the BAM Pump and return the switch to the AUTO position.

5.3.5 Return Mode Selector Switch to the desired mode of operation.

5.3.6 Reopen V-2650 and V-2651.

5.3.7 Operation with V-2525 may be resumed if necessary.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0250030, REVISION 2
EMERGENCY BORATION

6.0 REFERENCES:

6.1 St. Lucie Unit 2 FSAR, Chapter 9

6.2 C.E. Emergency Procedure F-EP-11

DOCUMENT REVISION DISTRIBUTION SHEET - UNIT II
OFF NORMAL & EMERGENCY OPER. PROCEDURE

DOCUMENT TITLE DC Ground Isolation

DOCUMENT FILE NUMBER 2-0960030

DOCUMENT REVISION NUMBER 2

DOCUMENT DISTRIBUTED ON 10-24-83
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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030
REVISION 2

2

1.0 TITLE:

DC GROUND ISOLATION

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group March 9 1983

Approved by J. H. Barrow (for) Plant Manager April 1 1983

Revision 2 Reviewed by FRG 9-27, 1983

Approved by C Mwetha Plant Manager 10-20-1983

3.0 PURPOSE:

3.1 Provide instructions for isolating a DC system ground without affecting plant operation.

3.2 Discussion:

This procedure shall be used as a guideline for DC ground location and isolation. The Nuclear Plant Supervisor and the Nuclear Watch Engineer shall use any section, in any order, as they deem necessary to maintain the plant stability and to insure that no limiting condition for operation from the Standard Technical Specification is violated.

4.0 PRECAUTIONS AND LIMITS:

Maintain two way radio communication between control center and operating point. Verify control center operator is observing ground light on RTGB-201 when isolating circuits to minimize time each circuit is switched off.

5.0 RELATED SYSTEM STATUS:

None

6.0 REFERENCES:

6.1 Ebasco Power Distribution Motor Data 2998-B-335 series drawings

6.2 Ebasco Control Wiring Diagrams 2998-B-327 series drawings

7.0 RECORDS REQUIRED:

Plant Work Order for the grounded circuits

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DC GROUND ISOLATION

2

8.0 INSTRUCTIONS:

8.1 If the ground appears on a bus which is tied to the 2A, 2B, or 2C DC bus, then proceed to Step 8.1.1. If the ground is on a separate isolated bus, then proceed to Step 8.1.5.

___ 8.1.1 Energize the standby battery charger and verify that all the 125V DC buses are being supplied from their respective chargers.

8.1.2 Open or verify open the following breakers in 125V DC bus 2AB power panels:

___ 8.1.2.1 Brk. 2-60310, 125V DC bus 2C

___ 8.1.2.2 Brk. 2-60335, 125V DC bus 2A

___ 8.1.2.3 Brk. 2-60333, 125V DC bus 2B

___ 8.1.3 The 2AB 125V DC bus is now isolated from the 2A and 2B 125V DC buses, and the 2C 125V DC bus is isolated from the 2AB 125V DC bus. Determine which DC bus is grounded.

___ 8.1.4 Return the 125V DC system to its original lineup.

___ 8.1.5 Proceed to the appropriate section as follows:

125V DC bus 2A ground:	Section 8.2
125V DC bus 2B ground:	Section 8.3
125V DC bus 2AB ground:	Section 8.4
125V DC bus 2C ground:	Section 8.5

8.2 Isolate a ground on 125V DC bus 2A as follows:

8.2.1 Breaker 2-60101 (PSL 1/PSL 2 Inst. Air Tie Valves PCV-18.5 and PCV-18.6)

8.2.2 Breaker 2-60102 RTGB-201 and RTGB-203

1.	RTGB-201	CWD 800
	F1 and F2	CWD 720
	F3 and F4	CWD 883
	F33 and F34	CWD 711
2.	RTGB-203	CWD 396
	F31 and F32	CWD 130
	F35 and F36	CWD 121
	F39 and F40	CWD 98
	F43 and F44	CWD 138
	F33 and F34	CWD 103
	F45 and F46	CWD 97

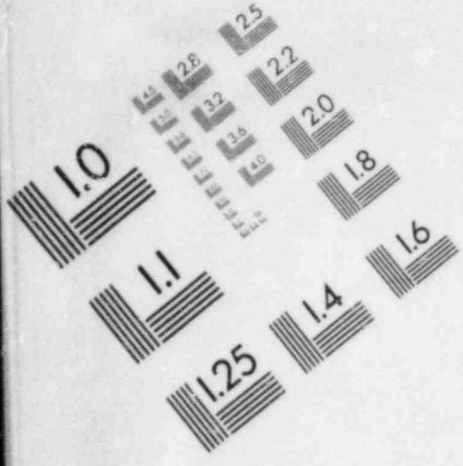
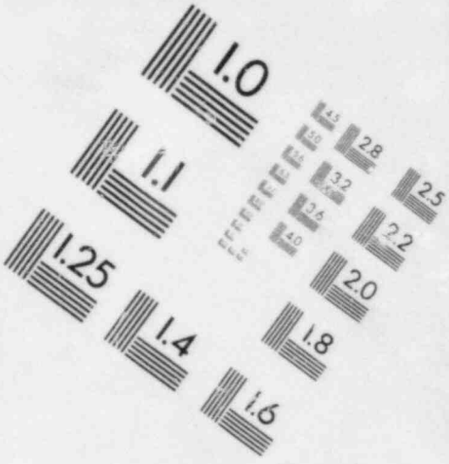
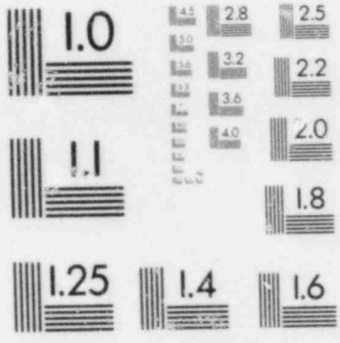
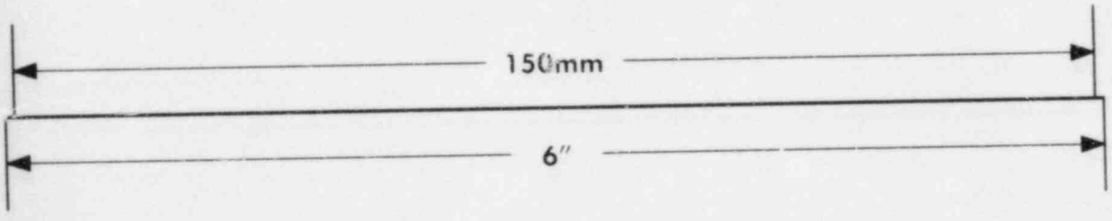
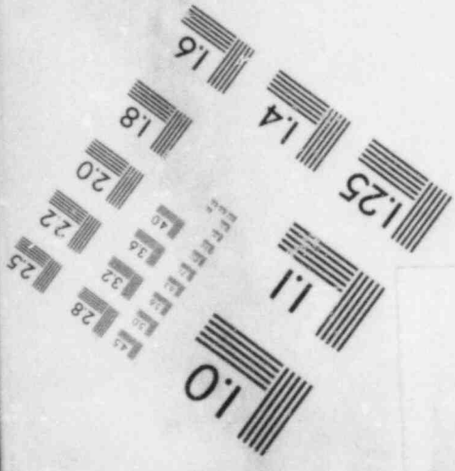


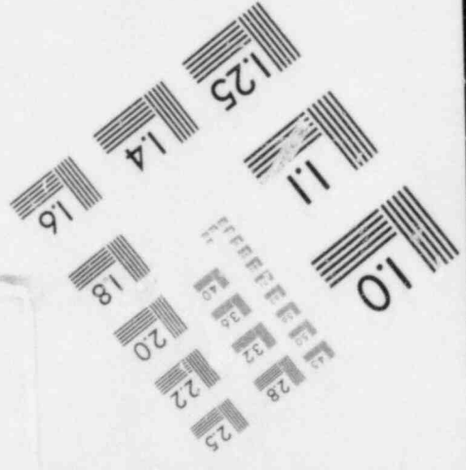
IMAGE EVALUATION TEST TARGET (MT-3)











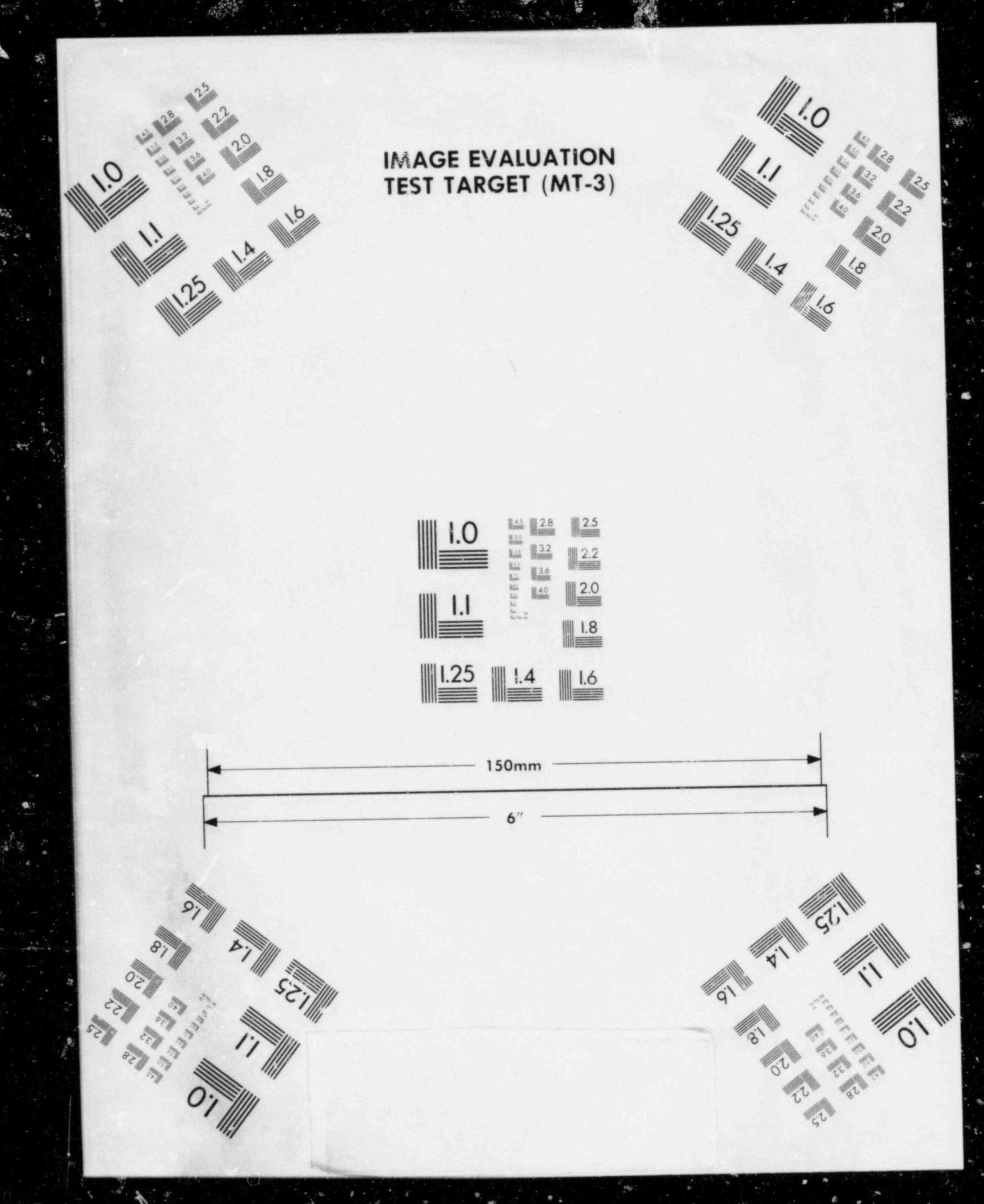


IMAGE EVALUATION
TEST TARGET (MT-3)
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1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
150mm
6"

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DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

8.2.3 Breaker 2-60103 (480V Swgr. 2A-1): Momentarily open and reclose breaker. If ground does not clear, proceed to Section 8.2.4. If the ground did clear, proceed to 480V LC Swgr. 2A1 and perform the following:

8.2.3.1 At the rear of each compartment listed below, momentarily remove and replace the close and trip circuit fuses for the listed breakers:

	COMPT.	BREAKER	EQUIPMENT
_____	2B	2-40103	Main Feed - Station Service Transformer
_____	3C	2-40107	Station Air Compressor
_____	5B	2-40111	Hypochlorite MCC 2A10
_____	5C	2-40112	Main Transformer 2A Cooling Source #1
_____	6A	2-40114	Main Transformer 2B Cooling Source #2
_____	6B	2-40115	Turbine Area MCC 2A1
_____	6C	2-40116	Intake Area MCC 2A3
_____	7B	2-40119	Turbine Area MCC 2C
_____	7C	2-40120	Turbine Bldg. Crane #2
_____	7D	2-40121	Rad Waste MCC 2A2

8.2.4 Breaker 2-60104 (6900V Swgr. 2A1): (Do not open 2-60104 until breaker 2-40842 is open (MV-09-1); 10 seconds after closure of 2-60104, breaker 2-40842 may be closed.) Momentarily open and reclose breaker. If ground does not clear, proceed to Section 8.2.5. If the ground did clear, proceed to 480V LC Swgr. 2A1 and perform the following:

8.2.4.1 At the rear of each compartment listed below, momentarily remove and replace the close and trip circuit fuses for the listed breakers: /R2

COMPT	BREAKER	EQUIPMENT
01	2-30101 (2W87)	Incoming fdr aux trans 2A
02	2-30102 (2W89)	Incoming fdr S/U trans standby 2A
03	2-30103	Feedwater pump 2A
04	2-30140	RCP 2A1
05	2-30105	RCP 2B2

ST. LUCIE UNIT 2
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DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

___ 8.2.5 Breaker 2-60105 (480V Swgr. 2A-2): Momentarily open and reclose breaker. If the ground did not clear, proceed to Section 8.2.6. If the ground did clear, proceed to 480V Swgr. 2A-2 and perform the following:

___ 8.2.5.1 At the rear of each compartment listed below, momentarily remove and replace the close and trip circuit fuses for the listed breakers:

	COMPT.	BREAKER	EQUIPMENT
_____	4B	2-40211	2HVE-10A
_____	4C	2-40212	CEA MG Set 2A
_____	5A	2-40214	Spare

8.2.6 Breaker 2-60106 (4160V Swgr. 2A-2): Momentarily open and reclose breaker. NOTE: Annunciator window B4 and B12 will alarm. If the ground did not clear, proceed to Section 8.2.7. If the ground did clear, proceed to 4160V Swgr. 2A-2 and perform the following:

8.2.6.1 Open cubicle 1 and momentarily remove and replace the close and trip circuit fuses for breaker (1W86) 2-20101. If the ground did not clear, momentarily remove and replace the 4160V 2A-2 undervoltage fuses. Close cubicle 1.

8.2.6.2 Open cubicle 2 and momentarily remove and replace the close and trip circuit fuses for breaker 2-20102. If the ground did not clear, momentarily remove and replace the startup standby transformer 2A lockout relay fuses. NOTE: Annunciator window B12 will annunciate. Close cubicle 2.

8.2.6.3 Open cubicle 10 and momentarily remove and replace the close and trip circuit fuses for breaker 2-20110. If the ground did not clear, momentarily remove and replace the 4160V Swgr. 2A-2 differential relay fuses. NOTE: Annunciator window B4 will alarm.

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DC GROUND ISOLATION

8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

8.2.6 (Cont.)

8.2.6.4 Open the cubicles listed below and momentarily remove and replace the close and trip circuit fuses for the listed breakers:

	CUBICLE	BREAKER	EQUIPMENT
_____	03	2-20103	CWP 2A1
_____	04	2-20104	CWP 2B1
_____	05	2-20105	SGBD MCC 1B-9 Transformer
_____	06	2-20106	TCWP 2A
_____	07	2-20107	Condensate Pump 2A
_____	08	2-20108	Htr. Drain Pump 2A
_____	09	2-20109	Feed to 4160V Swgr. 2A3

____ 8.2.7 Breaker 2-60107 (125V DC PP218): Momentarily open and reclose breaker. See Appendix E for load list.

____ 8.2.8 Breaker 2-60108 (Test Station for 6.9KV Swgr. 2A1 and 2B1): Momentarily open and reclose breaker.

____ 8.2.9 Breaker 2-60109 (Comp. Cooling Water Surge Tank): Momentarily open and reclose breaker. NOTE: LCV-14-1 (CCW surge tank inlet) fails closed.

____ 8.2.10 Breaker 2-60110 (Unit Aux XFMER 2A Control Cabinet): Momentarily open and reclose breaker. NOTE: Annunciator window C-48 will alarm.

____ 8.2.11 Breaker 2-60111 (DC LP 227): Momentarily open and reclose breaker. See Appendix E for load list.

____ 8.2.12 Breaker 2-60112 (S/U Standby XFMER 2A Control Cabinet): Momentarily open and reclose breaker. NOTE: Annunciator B-21 will alarm.

____ 8.2.13 Breaker 2-60113 (480V Pzr. Htr. Bus 2A3 Sudden Pressure Relay Ckt.): Momentarily open and reclose breaker.

ST. LUCIE UNIT 2
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DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

___ 8.2.14 Breaker 2-60114 (Main XFMER 2A Control Cabinet): Momentarily open and reclose breaker. NOTE: Annunciator window C-36 will alarm.

___ 8.2.15 Breaker 2-60115 (RTGB-205 and 203): Momentarily open and reclose breaker. See Appendix E for load list, FF1 to FF20 (RTGB-205), FF1 to FF12 (RTGB-203).

___ 8.2.16 Breaker 2-60116 (4160 Swgr. 2A-3): Momentarily open and reclose breaker. NOTE: Annunciator windows B4, 15, 18, 19, 54, 56, 57 and 59; E-46; G-44, R-28 and 30, S-47, 57 and X-8 will alarm. If the ground did not clear, proceed to Section 8.2.17. If the ground did clear, proceed to 4160V Swgr. 2A-3 and perform the following:

8.2.16.1 Open cubicle 6 and momentarily remove and replace the close and trip circuit fuses for breaker 2-20206, CCWP 2A. NOTE: Annunciator window S-51 will alarm. If the ground did not clear, momentarily remove and replace the 4160V Swgr. 2A-3 differential relay fuses. NOTE: Annunciator window B-4 will alarm.

8.2.16.2 Open cubicle 11 and momentarily remove and replace the close and trip circuit fuses for breaker 2-20211, Diesel Generator 2A. NOTE: Annunciator window B-56 will alarm. If the ground does not clear, momentarily remove and replace the 4160V Swgr. 2A-3 load shedding relay fuses. NOTE: Annunciator window B-15 will alarm.

8.2.16.3 Open the cubicles listed below and momentarily remove and replace the close and trip circuit fuses for the listed breakers. NOTE: Listed annunciator windows will alarm.

ANN. WINDOW	COMPT.	BREAKER	EQUIPMENT
R-30	1	2-20201	HPSI Pump 2A
R-28	2	2-20202	LPSI Pump 2A
S-47	3	2-20203	Cont. Spray 2A
B-59	4	2-20204	Feed to Prz. Htr. 2A3
X-8	5	2-20205	CEDM Cooling Fan 2HVE-21A
E-46	7	2-20207	ICWP 2A
B-54	8	2-20208	Feed to 4160V 2AB
B-19	9	2-20209	Supply from 4160V 2A2
B-47	10	2-20210	Feed to 480V LC 2A2/2A5
G-44	12	2-20212	AFWP 2A

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

___ 8.2.17 Breaker 2-60117 (DG 2A Cont. Pnl.): Momentarily open and reclose breaker. NOTE: This breaker is the feed to the annunciator circuit on 2A DG.

___ 8.2.18 Breaker 2-60118 (Cont. Transfer Panel 2A): Momentarily open and reclose breaker.

___ 8.2.19 Breaker 2-60119 (RTGB-206): Momentarily open and reclose breaker. NOTE: See Appendix E for load list.

___ 8.2.20 Breaker 2-60120 (Static Inv. Cab. 2A): Remove Static Inverter 2A from service by performing Section 8.3 of Operating Procedure 2-0970020.

___ 8.2.21 Breaker 2-60121 (IRS 2A Valve SE-07-3A): Momentarily open and reclose breaker. NOTE: Valve SE-07-3A will open.

___ 8.2.22 Breaker 2-60122 (DG 2A Control Panel): Momentarily open and reclose breaker.
NOTE: Annunciator window B-36 and B-26 on RTGB-201 and B-3 on DG 2A local annunciator will alarm. If the ground did not clear, proceed to step 8.2.23.

___ 8.2.23 Breaker 2-60123 (480V Swgr. 2A-2): Momentarily open and reclose breaker. NOTE: B-29 will alarm. If the ground does not clear, proceed to 8.2.4. If the ground did clear, proceed to 480V Swgr. 2A-2 and perform the following:

___ 8.2.23.1 Open compartment 6A (instrumentation) and momentarily remove and replace the 2A-2 Swgr. UV relay fuses. NOTE: Annunciator window B-29 will alarm. Close compartment 6A.

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DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

8.2.23 (Cont.)

8.2.23.2 At the rear of each compartment listed below, momentarily remove and replace the close and trip circuit fuses for the listed breakers:

COMPT.	BREAKER	EQUIPMENT
1A	2-40201	Spare
1B	2-40202	MCC 2A-7
1C	2-40203	MCC 2A-5
1D	2-40204	Spare
5B	2-40215	MCC 2A9-1A
5C	2-40216	Spare
5D	2-40217	Charging Pump 2A
6B	2-40219	Main Feed
6C	2-40220	480V LC 2AB

____ 8.2.24 Breaker 2-60124 (Relief Valve V-1475): Momentarily open and close breaker.

____ 8.2.25 Breaker 2-60125 (Battery Charger 2A): Momentarily open and close breaker.

8.2.26

____ 8.2.27 Breaker 2-60127 (HVCB): Momentarily open and reclose breaker. See Appendix E for load list, FF25 to FF36.

8.2.28 Breaker 2-60128 (Spare)

____ 8.2.29 Breaker 2-60129 (Static Inverter Cabinet 2C): Remove static inverter 2C from service by performing Section 8.3 of Operating Procedure 2-0970020.

____ 8.2.30 Breaker 2-60130 (Control Transfer Panel 2A): Momentarily open and reclose breaker.

____ 8.2.31 Breaker 2-60131 (Plt. Aux. Cont. Ann. - LA): Momentarily open and reclose breaker.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

___ 8.2.32 Breaker 2-60132 (DC PP-238): Momentarily open and reclose breaker. See Appendix E for load list.

___ 8.2.33 Breaker 2-60133 (Bus MA): This breaker trips reactor trip breakers TCB-1 and TCB-5. Verify that reactor trip breakers TCB-1 through 8 are closed.

___ 8.2.33.1 Inform the Control Room that TCB-1 and TCB-5 will be tripped. Momentarily open and reclose breaker 2-60133. NOTE: Annunciator windows K-9 and K-10 will alarm. If the ground did not clear, proceed to Section 8.2.34. If the ground did momentarily clear, proceed to reactor trip switchgear and perform the following:

___ 8.2.33.1.1 Momentarily remove and replace the close and trip fuses for TCB-1.

___ 8.2.33.1.2 Momentarily remove and replace the close and trip fuses for TCB-5.

___ 8.2.33.2 Verify that reactor trip breakers TCB-1 through 8 are closed before proceeding with remainder of procedure.

___ 8.2.34 Breaker 2-60134 (Bus MC): This breaker trips reactor trip breakers TCB-3 and TCB-7. Verify that reactor trip breakers TCB-1 through TCB-8 are closed.

___ 8.2.34.1 Inform the Control Room that TCB-3 and TCB-7 will be tripped. Momentarily open and reclose breaker 2-60134. NOTE: Annunciator windows K-4 and K-5 will alarm. If the ground did not clear, proceed to Section 8.2.35. If the ground did momentarily clear, proceed to reactor trip switchgear and perform the following:

8.2.34.1.1 Momentarily remove and replace the close and trip fuses for TCB-3.

8.2.34.1.2 Momentarily remove and replace the close and trip fuses for TCB-7.

8.2.34.2 Verify that reactor trip breakers TCB-1 through 8 are closed before proceeding with remainder of procedure.

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DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.2 (Cont.)

8.2.35 Breaker 2-60135 (ISO CAB "SA"): Verify SS in isolation panel SA are in "normal" position. Momentarily open and close breaker.

8.2.36 Breaker 2-60136 (Charging Line 2A2 Valve I-SE-02-02)

8.2.37 Breaker 2-60137 (DG 2A Cont. Pnl. Exc.)

8.2.38 Breaker 2-60138 (Iso. Pnl. 2A-Charging Line Iso. Valve V-2523)

8.2.39 Breaker 2-60139 480V LC 2A5.

8.2.40 Breaker 2-60140 125V DC PP-254.

8.2.41 Breaker 2-60141 Spare.

8.2.42 Breaker 2-60142 Spare.

8.2.43 Momentarily remove and replace the DC bus 2A under-voltage relay fuses in DC bus 2A.

8.2.44 Momentarily remove and replace the DC bus 2A ground relay fuses in DC bus 2A.

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OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.3 Isolate a ground on 125V DC bus 2B as follows:

___ 8.3.1 Breaker 2-60201 (Hydrogen Panel): Momentarily open and reclose breaker. NOTE: The annunciator horn at the H_2 control panel must be reset locally.

___ 8.3.2 Breaker 2-60202 (LP-228): Momentarily open and reclose breaker. See Appendix F for load list.

___ 8.3.3 Breaker 2-60203 (Turbine Oil H_2 Seal Oil and Htr. Drain Fire Protection): Momentarily open and reclose breaker.

___ 8.3.4 Breaker 2-60204 (S/U Standby XFMER 2B Cont. Cab.): Momentarily open and reclose breaker.

___ 8.3.5 Breaker 2-60205 (480V Pzr. Htr. Bus 2B3 Sudden Press. Relay Ckt.): Momentarily open and reclose breaker.

___ 8.3.6 Breaker 2-60206 (Main XFMER 2B Cont. Cab.): Momentarily open and reclose breaker.

___ 8.3.7 Breaker 2-60207 (480V Swgr. 2B2 Cont. Cab.): Momentarily open and reclose breaker. If the ground did not clear, proceed to Section 8.3.8. If the ground did clear, proceed to 480V Swgr. 2A-2 and perform the following:

8.3.7.1 At the rear of each compartment listed below, momentarily remove and replace the close and trip fuses for the listed breakers:

	COMPT.	BREAKER	EQUIPMENT
_____	3A	40505	Spare
_____	4B	40510	2HVE-10B
_____	4C	40511	CEA MG Set 2B

___ 8.3.8 Breaker 2-60208 (Aux. XFMER 2B Control Cab.): Momentarily open and reclose breaker.

___ 8.3.9 Breaker 2-60209 (Excitation Swgr.): Do Not Operate this breaker. Proceed to 8.3.10. If ground cannot be cleared after completion of 8.3, notify Electrical Department that the ground is apparently in the excitation switchgear. NOTE: Operation of breaker will trip generator on loss of DC.

ST. LUCIE UNIT 2
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DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

8.3.10 Breaker 2-60210 RTGB-201 CWD 800

____ 8.3.11 Breaker 2-60211 (480V Swgr. 2B-1): Momentarily open and reclose breaker. If ground does not clear, proceed to Section 8.3.12. If ground did clear, proceed to 480V LC Swgr. 2B-1 and perform the following:

8.3.11.1 At the rear of each compartment listed below, momentarily remove and replace the close and trip fuses for the listed breakers:

	COMPT.	BREAKER	EQUIPMENT
_____	1B	2-40402	Main XFMER 2A Cooling Source #2
_____	1D	2-40404	MCC #2B-2
_____	2B	2-40406	MCC #2B-10
_____	2C	2-40407	Main XFMER 2B Cooling Source #1
_____	3A	2-40409	MCC #2C
_____	3B	2-40410	MCC #2B-1
_____	3C	2-40411	MCC #2B-3
_____	6B	2-40419	Main Feed
_____	6C	2-40420	2B1-2A1 Tie

8.3.12 Breaker 2-60212 (6900V Swgr. 2B-1): (Do not open 2-60212 until breaker 2-41644 is open (MV-09-2); 10 seconds after closure of 2-60212, breaker 2-41644 may be closed.) Momentarily open and reclose breaker. If ground did not clear, proceed to Section 8.3.13. If ground did clear, proceed to 6900V Swgr. 2B1 and perform the following: /R2

8.3.12.1 Open the cubicles listed below and momentarily remove and replace the close and trip circuit fuses for the listed breakers:

CUBICLE	BREAKER	EQUIPMENT
01	2-30205	Reactor Coolant Pump 2B1
02	2-30204	Reactor Coolant Pump 2A2
03	2-30203	Feedwater Pump 2B

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OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
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8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

___ 8.3.13 Breaker 2-60213 (PP-219): Momentarily open and reclose breaker. See Appendix G for load list.

___ 8.3.14 Breaker 2-60214 (4160V Swgr. 2B-2): Momentarily open and reclose breaker. NOTE: Annunciator windows A4 and A15 will alarm. If the ground does not clear, proceed to Section 8.3.15. If the ground did clear, proceed to 4.16KV Swgr. 2B-2 and perform the following:

___ 8.3.14.1 Open cubicle 10 and momentarily remove and replace the close and trip fuses for breaker 2-20301. If the ground did not clear, momentarily remove and replace 4.16KV Swgr. 2B2 undervoltage fuses. Close cubicle 10.

___ 8.3.14.2 Open cubicle 9 and momentarily remove and replace the close and trip fuse for breaker 2-20302. If the ground did not clear, momentarily remove and replace the start up standby transformer 2B lockout relay fuses. NOTE: Annunciator window A15 will alarm. Close cubicle 9.

___ 8.3.14.3 Open cubicle 1 and momentarily remove and replace the close and trip fuses for breaker 2-20310. If the ground did not clear, momentarily remove and replace the 4.16KV Swgr. 2B2 differential relay fuses. NOTE: Annunciator window A4 will alarm.

___ 8.3.14.4 Open the cubicles listed below and momentarily remove and replace the close and trip circuit fuses for the listed breakers:

	CUBICLE	BREAKER	EQUIPMENT
_____	02	2-20309	Feed to 4160V Bus 2B3
_____	03	2-20308	Htr. Dr. Pump 2B
_____	04	2-20307	Condensate Pump 2B
_____	05	2-20306	TCWP 2B
_____	07	2-20304	CWP 2B2
_____	08	2-20303	CWP 2A2

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

___ 8.3.15 Breaker 2-60215 (480V Swgr. 2B-2): Momentarily open and reclose breaker. If the ground did not clear, proceed to Section 8.3.16. If the ground did momentarily clear, proceed to 480V Swgr. 2B2 and perform the following:

___ 8.3.15.1 Open compartment 2A (instrumentation) and momentarily remove and replace the 2B2 swgr. undervoltage relay fuses. Close compartment 2A.

___ 8.3.15.2 At the rear of each compartment listed below, momentarily remove and replace the close and trip fuses for the listed breakers:

	COMPT.	BREAKER	EQUIPMENT
_____	2C	2-40504	2B2-2AB Tie
_____	3B	2-40506	MCC 2B-9 2HVS-1C
_____	3C	2-40507	Spare
_____	3D	2-40508	Charging Pump 2B
_____	6A	2-40514	Reactor Crane #2
_____	7A	2-40518	Spare
_____	7B	2-40519	MCC 2B-7
_____	7C	2-40520	MCC 2B-5
_____	7D	2-40521	Spare

___ 8.3.16 Breaker 2-60216 (Aux. Spray Valve ISE-02-4): Momentarily open and reclose breaker. NOTE: Valve fails closed, loses indication.

___ 8.3.17 Breaker 2-60217 (IRS Valve 2B SE-07-3B - 100W): Momentarily open and reclose breaker.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

____ 8.3.18 Breaker 2-60218 (4.16KV Swgr. 2B-3): Momentarily open and reclose breaker. NOTE: Annunciator windows A4, A15, A52, A54, A56, A57, A59, E47, G45, R52, R56, R59 and S52 will alarm. If the ground did not clear, proceed to Section 8.3.19. If the ground did clear, proceed to 4.16KV Swgr. 2B-3 and perform the following:

8.3.18.1 Open cubicle 4 and momentarily remove and replace the close and trip fuses for breaker 2-20404. NOTE: Annunciator window S52 will alarm. If the ground did not clear, momentarily remove and replace the 4.16KV Swgr. 2B-3 differential relay fuses. NOTE: Annunciator window A4 will alarm.

____ 8.3.18.2 Open cubicle 1 and momentarily remove and replace the close and trip fuses for breaker 2-20401. NOTE: Annunciator window A56 will alarm. If the ground did not clear, momentarily remove and repalce the 4.16KV Swgr. 2B-3 load shedding relay fuses. NOTE: Annunciator window A15 will alarm.

____ 8.3.18.3 Open the cubicles listed below and momentarily remove and replace the close and trip fuses for the listed breakers. NOTE: Listed annunciator windows will alarm.

	CUBICLE	BREAKER	ANN. WINDOW	EQUIPMENT
_____	2	2-20402	A-57	Feed to 2B2 480V LC
_____	3	2-20403	A-59	Feed to 2B3 480V Press. Htrs.
_____	5	2-20405	R-56	HPSI Pump 2B
_____	6	2-20406	R-59	LPSI Pump 2B
_____	7	2-20407	R-52	Cont. Spray Pump 2B
_____	8	2-20408		CEDM Cooling Fan 2HVE-21B
_____	9	2-20409	A-54	Feed to 2AB 4160V
_____	10	2-20410	E-47	ICWP 2B
_____	11	2-20411	A-52	Supply from 2B2 4160V
_____	12	2-20412	G-45	Aux. Feed Water Pump 2B

8.3.19 Breaker 2-60219 (DG 2B Control Panel)

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DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

___ 8.3.20 Breaker 2-60220 (Static Inverter Cab. 2B): Remove inverter 2B from service by performing Section 8.3.1 through 8.3.8 of Operating Procedure 2-0970020.

___ 8.3.21 Breaker 2-60221 (DG 2B Cont. Panel). Momentarily open and reclose breaker.
NOTE: Annunciator window A-36 and A-26 on RTGB-201 and 8-3 on DG 2B local annunciator will alarm. If the ground did not clear, proceed to step 8.3.22.

___ 8.3.22 Breaker 2-60222 (Static Inverter Cab. 2D): Remove inverter 2D from service by performing Section 8.3.1 through 8.3.8 of Operating Procedure 2-0970020.

___ 8.3.23 Breaker 2-60223 (Plant Aux. Cont. BD Ann.-LB): Momentarily open and reclose breaker.

___ 8.3.24 Breaker 2-60224 (Cont. Transfer Panel 2B): Momentarily open and reclose breaker.

___ 8.3.25 Breaker 2-60225 (2B Battery Charger): Momentarily open and reclose breaker.

___ 8.3.26 Breaker 2-60226 (Space)

___ 8.3.27 Breaker 2-60227 (RTGB-203, 205): Momentarily open and reclose breaker. See Appendix H for load list.

___ 8.3.28 Breaker 2-60228 (DC PP-239): Momentarily open and close breaker. See Appendix I for load list.

___ 8.3.29 Breaker 2-60229 480V LC 2B5.

___ 8.3.30 Breaker 2-60230 (DG Control Panel): Momentarily open and reclose breaker.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

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8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

___ 8.3.31 Breaker 2-60231 (RTGB-206): Momentarily open and reclose breaker. See Appendix J for load list.

___ 8.3.32 Breaker 2-60232 (Letdown Control Isol. Valve V-2522): Momentarily open and reclose breaker. Valve will fail closed, lose indication.

___ 8.3.33 Breaker 2-60233 (Bus MB): This breaker trips reactor trip breakers TCB-2, TCB-6 and TCB-9. Verify that reactor trip breakers TCB-1 through 8 are closed.

___ 8.3.33.1 Inform the Control Room that TCB-2, TCB-6 and TCB-9 will be tripped. Momentarily open and reclose breaker 2-60233. NOTE: Annunciator windows K-1 and K-2 will alarm. If the ground did not clear, proceed to Section 8.3.34. If the ground did momentarily clear, proceed to reactor trip switchgear and perform the following:

___ 8.3.33.1.1 Momentarily remove and replace the close and trip fuses for TCB-2.

___ 8.3.33.1.2 Momentarily remove and replace the close and trip fuses for TCB-6.

___ 8.3.33.1.3 Momentarily remove and replace the close and trip fuses for TCB-9.

___ 8.3.33.2 Verify that reactor trip breakers TCB-1 through 8 are closed before proceeding with remainder of procedure.

___ 8.3.34 Breaker 2-60234 (Bus MD): This breaker trips reactor trip breakers TCB-4 and TCB-8. Verify that reactor trip breakers TCB-1 through TCB-8 are closed.

___ 8.3.34.1 Inform the Control Room that TCB-4 and TCB-8 will be tripped. Momentarily open and reclose breaker 2-60234. NOTE: Annunciator windows K-12 and K-13 will alarm. If the ground did not clear, proceed to Section 8.3.35. If the ground did momentarily clear, proceed to reactor trip switchgear and perform the following:

___ 8.3.34.1.1 Momentarily remove and replace the close and trip fuses for TCB-4.

___ 8.3.34.1.2 Momentarily remove and replace the close and trip fuses for TCB-8.

ST. LUCIE UNIT 2
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2

8.0 INSTRUCTIONS: (Cont.)

8.3 (Cont.)

8.3.34 (Cont.)

___ 8.3.34.2 Verify that reactor trip breakers TCB-1 through 8 are closed before proceeding with remainder of procedure.

___ 8.3.35 Breaker 2-60235 (Charging Line 2B1 Valve I-SE-02-01): Momentarily open and reclose breaker. (*missing CWD)

___ 8.3.36 Breaker 2-60236 (Relief Valve V-1474): Momentarily open and reclose breaker. Valve fail closed, lose indication, window H-12 will alarm.

___ 8.3.37 Breaker 2-60237 (Iso. Cab. "SB"): Momentarily open and reclose breaker.

___ 8.3.38 Breaker 2-60238 (HVCB): Momentarily open and reclose breaker. See Appendix K for load list.

___ 8.3.39 Breaker 2-60239 Spare.

___ 8.3.40 Breaker 2-60240 125V DC PP-255.

___ 8.3.41 Breaker 2-60241 Spare.

___ 8.3.42 Breaker 2-60242 Spare.

___ 8.3.43 Momentarily remove and replace the DC bus 2B undervoltage relay fuses in DC bus 2B.

___ 8.3.44 Momentarily remove and replace the DC bus 2B ground relay fuses in DC bus 2B.

___ 8.3.45 If the ground has not cleared at this point, notify Electrical Maintenance Department that the ground is apparently in the generator excitation swgr. Do Not Operate breaker 2-60209. Main Generator will trip on loss of DC.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

2

8.0 INSTRUCTIONS: (Cont.)

8.4 Isolate a ground on the 2AB 125V DC Bus as follows:

____ 8.4.1 Breaker 2-60301 Spare.

____ 8.4.2 Breaker 2-60302 (HVCB): Momentarily open and reclose breaker. See Appendix M for load list.

____ 8.4.3 Breaker 2-60303 (RTGB-205): Momentarily open and reclose breaker. See Appendix N for load list.

____ 8.4.4 Breaker 2-60304 (RTGB-205): Momentarily open and reclose breaker. See Appendix O for load list.

____ 8.4.5 Breaker 2-60305 (Spare)

____ 8.4.6 Breaker 2-60306 (Spare)

____ 8.4.7 Breaker 2-60307 (Spare)

____ 8.4.8 Breaker 2-60308 (Spare)

____ 8.4.9 Breaker 2-60309 (SUPS Cabinet): Remove the vital AC inverter from service by performing steps 8.4.1 through 8.4.12 of Operating Procedure 2-0970021.

____ 8.4.10 Breaker 2-60310 (125V DC tie to 2C bus) should be open.

____ 8.4.11 Breaker 2-60311 Spare.

____ 8.4.12 Breaker 2-60312 (Iso. Term Cab. 3): Momentarily open and reclose breaker.

____ 8.4.13 Breaker 2-60313 (Spare)

____ 8.4.14 Breaker 2-60314 (Spare)

____ 8.4.15 Breaker 2-60315 (Spare)

____ 8.4.16 Breaker 2-60316 (Spare)

____ 8.4.17 Breaker 2-60317 (Spare)

____ 8.4.18 Breaker 2-60318 (Spare)

____ 8.4.19 Breaker 2-60319 Spare.

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

8.0 INSTRUCTIONS: (Cont.)

8.4 (Cont.)

___ 8.4.20 Breaker 2-60320 (Aux. FWP Steam Valve MV-08-3): Verify 2C AFWP is not running. Momentarily open and reclose breaker.

___ 8.4.21 Breaker 2-60321 (4160V Swgr. 2AB): Momentarily open and close breaker. NOTE: Annunciator windows A5, A54, B54, E91, S53 and R57 will alarm. If ground did not clear, proceed to Section 8.4.22. If ground did clear, proceed to 4160V Swgr. 2AB and perform the following:

8.4.21.1 Open cubicle 1 and momentarily remove and replace the close and trip fuses for breaker 2-20501 (spare cubicle).

Open the cubicles listed below and momentarily remove and replace the close and trip circuit fuses for the listed breakers.

CUBICLE	BREAKER	EQUIPMENT
02	2-20502	CCWP 2C
03	2-20503	ICWP 2C
04	2-20504	Feed from 4.16KV Bus 2B3
05	2-20505	Feed from 4.16KV Bus 2A3

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8.0 INSTRUCTIONS: (Cont.)

8.4 (Cont.)

___ 8.4.22 Breaker 2-60322 (480V Swgr. 2AB): Momentarily open and reclose breaker. If the ground did not clear, proceed to Section 8.4.23. If the ground did clear, proceed to 480V Swgr. 2AB and perform the following:

8.4.22.1 Open compartment 2A (instrumentation) and momentarily remove and replace the 480V swgr. 2AB undervoltage relay fuses. Close compartment 2A.

8.4.22.2 At the rear of each compartment listed below, momentarily remove and replace the close and trip fuses for the listed breakers:

COMPT.	BREAKER	EQUIPMENT
1B	2-40702	Bus Tie to 480V Swgr. 2A-2
1C	2-40703	MCC 2AB
2B	2-40706	Bus Tie to 480V Swgr. 2B-2
2C	2-40707	Charging Pump 2C

___ 8.4.23 Breaker 2-60323 (Isol. Cab. "SAB"): Momentarily open and reclose breaker.

___ 8.4.24 Breaker 2-60324 (PP-240): Momentarily open and reclose breaker. See Appendix R for load list.

___ 8.4.25 Breaker 2-60325 (Spare)

___ 8.4.26 Breaker 2-60326 (Battery Charger 2AB): Momentarily open and reclose breaker.

___ 8.4.27 Breaker 2-60327 Spare.

___ 8.4.28 Breaker 2-60328 Spare.

___ 8.4.29 Breaker 2-60329 Spare.

___ 8.4.30 Breaker 2-60330 Spare.

ST. LUCIE UNIT 2
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8.0 INSTRUCTIONS: (Cont.)

8.4 (Cont.)

____ 8.4.31 Momentarily remove and replace the DC Bus 2AB undervoltage relay fuses in DC Bus 2AB.

____ 8.4.32 Momentarily remove and replace the DC Bus 2AB ground relay fuses in DC Bus 2AB.

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8.0 INSTRUCTIONS: (Cont.)

8.5 Isolate a ground on 125V DC Bus 2C as follows:

___ 8.5.1 Breaker 2-60601 (Spare)

___ 8.5.2 Breaker 2-60602 (125V DC PP-133 SGBTF): Momentarily open and reclose breaker. (Ensure Unit 1 feed is closed.)

___ 8.5.3 Breaker 2-60603 (4160V Tie Swgr. 2A4): Momentarily open and close breaker.

___ 8.5.4 Breaker 2-60604 (4160V Tie Swgr. 2B4): Momentarily open and reclose breaker.

___ 8.5.5 Breaker 2-60605 (Battery Charger 2C): Momentarily open and reclose breaker.

___ 8.5.6 Breaker 2-60606 (Security Fire Detection Rad. Vital AC Cabinet): Place the SUPS on its alternate source prior to opening 2-60606. Return SUPS to normal operation if ground did not clear.

___ 8.5.7 Breaker 2-60607 (Air Side Seal Oil Backup Pump): Verify pump is not running. Momentarily open and reclose breaker.

___ 8.5.8 Breaker 2-60609 (Emergency Oil Pump): Verify pump is not running. Momentarily open and reclose breaker.
NOTE: Annunciator window C-56 will alarm.

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APPENDIX E

PP 218 CKT. 7 RTGB- TB CWD REV. 0

8.2.7
Bkr. 60107

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 1		1004		Isol. Term. Cab. 1	Loss of many Class Ann.
Ckt. 3		1701		480V LC 2A5	
Ckt. 4		929		Bkr. Test Sta. 2A2-2B2 4160V Swgr.	Out of service
Ckt. 5		740		L.P. Htr. 2-3A and 2-4A Reverse Current Valves	Reverse current valves will attempt to close against flow, flow holds open
Ckt. 6		1696		PACB-2	
Ckt. 7		740		H.P. Htr. 2-5A Reverse Current Valves	Reverse current valves will attempt to close against flow, flow holds open
Ckt. 8		1696		PACB-2	
Ckt. 9		638	Aux. FW P2C	I-SE-08-1 Local Control Station	
Ckt. 13		1213		Sequence of Events Recorder-Annunciator	Window F-37 will alarm
Ckt. 14		1638		RA-ST-1	
Ckt. 15				Feeder to Rm. 26-5	
Ckt. 17				Feeder to Rm. 26-6	

ST. LUCIE UNIT 2
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APPENDIX E

DC LP 227 CKT. 11 RTGB- TB CWD REV. 0

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 11				Control Room Emerg. Lighting	No effect

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC 2A CKT. 15 RTGB- 205 TB T8 CWD 645 REV. 0

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	157		Letdown Containment Isolation Valve	Fail closed, lose indication
F3 F4	F3P F4N	159	V-2505	RCP Controlled Bleedoff Isolation	Fail closed, lose indication
F5 F6	F5P F6N	159	V-2650	Boric Acid Tank 2A Recirc.	Fail closed, lose indication
F7 F8	F7P F8N	159	V-2651	Boric Acid Tank 2B Recirc.	Fail closed, lose indication
F9 F10	F9P F10N	163	FCV-2210Y	Boric Acid Flow	Fail closed, lose indication
F11 F12	F11P F12N	194	V-2523	Charging Line Isol Valve	Fail open, lose indication
F13 F14	F13P F14N	176	I-SE-02-02	Charging Line 2A Valve I-SE-02-02	Fail open, lose indication, manually reset HS-I-SE-02-02 RTGB-205
F15 F16	F15P F16N	563	V-6341	RDT Cont. Isol. Valve	Fail closed, lose indication, manually reset HS-6341 RTGB-205
F17 F18	F17P F18N	564	V-6750	Waste Gas Cont. Isol. Valve	Fail closed, lose indication, manually reset HS-6750 RTGB-205
F19 F20	F19P F20N	576	LCV-07-11A	Reactor Sump Isol. Valve	Fail closed, lose indication, must open/reset CS-1/576 when fuse restored to re-open
F21	F21P	1528	I-SE-05-1E	SI Tanks Sample Valve	Fail closed, lose indication

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC 2A CKT. 19 RTGB- 206 TB T2 CWD 646 REV. 0

8.2.19
Bkr. 2-6019

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	202	HCV-14-8A	Comp. Cool. Wtr. Normal Supply Hdr. Isol. Valve	Fail closed, lose indication
F3 F4	F3P F4N	202	HCV-14-8B	Comp. Cool. Wtr. Normal Supply Hdr. Isol. Valve	Fail closed, lose indication
F5 F6	F5P F6N	211	HSE-14-3A	Comp. Cool. Wtr. from HCV-14-3A	Fail open, lose indication, reset to close
F7 F8	F7P F8N	212	HCV-14-1	Comp. Cool. Wtr. to Reactor Cool. Pumps	Fail closed, lose indication, reset to open
F9 F10	F9P F10N	212	HCV-14-2	Comp. Cool. Wtr. from Reactor Cool. Pumps	Fail closed, lose indication, reset to open
F11 F12	F11P	242	I-SE-03-1B	SI Tank 2A2 Fill and Drain	Fail closed, lose indication
F13 F14	F13P F14N	242	I-SE-03-1A	SI Tank 2A2 Fill and Drain	Fail closed, lose indication
F15 F16	F15P F16N	256	V-3612	SI Tank 2A2, N_2 to SI Tank	Fail closed, lose indication
F17 F18	F17P F18N	256	V-3622	SI Tank 2A1, N_2 to SI Tank	Fail closed, lose indication
F19 F20	F19P F20N	280	HCV-3618	Check Valve Leakage Drain to RWT	Fail closed, lose indication
F21 F22	F21P F22N	281	HCV-3628	Check Valve Leakage Drain to RWT	Fail closed, lose indication

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC 2A CKT. 19 RTGB- 206 TB T2 CWD 646 REV. 0

8.2.19
Bkr. 60119

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F23 F24	F23P F24N	289	FCV-07-1A	Containment Spray Valve	Fail open, lose indication
F25 F26	F25P F26N	312	HCV-08-1A	Main Steam Isol. Valve	Lose indication, valve will stay open if air supply is uninterrupted
F27 F28	F27P F28N	317	HCV-18-1	Instrument Air Isolation Valve	Fail closed, lose indication
F29 F30	F29P FF30N	319	FCV-23-3	Steam Gen. 2A Blowdown Isol. Valves	Fail closed, lose indication
F31 F32	F31P F32N	319	FCV-23-5	Steam Gen. 2A Blowdown Isol. Valves	Fail closed, lose indication
F33 F34	F33P F34N	320 320	FCV-26-2	Containment Radiation Sample Isol. Valves	Fail closed, lose indication
F35 F36	F35P F36N	461	FCV-23-7 FCV-23-9	Steam Gen. 2A and 2B Blowdown Sample Isol. Valves (A)	Fail closed, lose indication
F37 F38	F37P F38N	536	HCV-25-1 thru 25-7	Drain Valves to Reactor Auxiliary Bldg. Sumps	Fail closed, lose indication
F39 F40	F39P F40N	578	V-5200	Primary Coolant Sample Valve	Fail closed, lose indication
F41 F42	F41P F42N	579	V-5201	Press Surge Line Sample Valve	Fail closed, lose indication

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC 2A CKT. 19 RTGB- 206 TB T2 CWD 646 REV. 0

8.2.19
Bkr. 60119

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F43 F44	F43P F44N	580	V-5202	Press. Stm. Space Sample Valve	Fail closed, lose indication, reset to open
F45 F46	F45P F46N	1520	V-3495	Minimum Flow Isol. Valve	Fail closed, lose indication, valve re-opens when fuse restored
F47 F48	F47P F48N	1519	To RWT Val. I-SE-03-2A	SI Tank Test Line	Fail closed, lose indication, reset HS-1519-1 to re-open
F49 F50	F49P F50N	1519	V-3572	Hot Leg HPSI Line Check Valve Leakage Drain Loop 2A	Fail closed, lose indication, reset HS-3572 to re-open
F51 F52	F51P F52N	243	V-3613	SI Tank 2A2 Vent	Fail closed, lose indication
F53 F54	F53P F54N	243	V-3623	SI Tank 2A1 Vent	Fail closed, lose indication
F55 F56	F55P F56N	1528	I-SE-05-1E	SI Tanks Sample Valves	Fail closed, lose indication, reset HS-03-1 to re-open
F57 F58	F57P F58N	247	V-3737	SI Tank 2B1	
F59 F60	F59P F60N	247	V-3739	SI Tank 2B2	
F61 F62	F61P F62N	655	HCV-09-1A	Main Feedwater Isolation Valve	Window P-6 will alarm
F63 F64	F63P F64N	671	HCV-09-2A	Main Feedwater Isolation	Window P-26 will alarm

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC 2A CKT. 27 RTGB- HVCB TB W1-LTA CWD 1239 REV. 0

8.2.27
Bkr. 60127

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F25 F26	F25P F26N	511	FCV-25-1 FCV-25-3 FCV-25-5	Reactor Containment Purge Isol. Valves	Fail closed, lose indication
F27 F28	F27P F28N	317	HCV-18-1	Instrument Air Isolation Valve	
F29 F30	F29P F30N	1160	FCV-25-20	Continuous Containment/ Hydrogen Purge Isol. Valve	Fail closed, lose indication
F31P4 F32N4		1239	FCV-25-7	Containment Vacuum Relief Valve	Fail closed, lose indication
F33 F34	F33P F34N	1164	FCV-25-26	Continuous Containment/ Hydrogen Purge Isol. Valve	Fail closed, lose indication
F35 F36	F35P F36N	455		Fuel Pool Rad. Monitoring	Fuel Handling Building Ventilation is shifted to Shield Building Ventilation Fans/Shield Building Ventilation is isolated

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

2

APPENDIX E

PP DC PP-238 CKT. 32 RTGB- TB CWD REV. 0

8.2.32
Bkr. 60132

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 1	2-60651			Spare	
Ckt. 2	2-60652	640		Reflash Module RA-T-4	Window F-42 will alarm
Ckt. 3	2-60653	640		Reflash Module RA-T-5	Window G-4 will alarm
Ckt. 4	2-60654	640		Reflash Module RA-T-6	Window G-24 will alarm
Ckt. 5	2-60655			Spare	
Ckt. 6	2-60656	1564		Reflash Module RA-RAB-17	Windows R26, P23, P15, F37, E30 will alarm
Ckt. 7	2-60657	Spare		Spare	
Ckt. 8	2-60658	986		Reflash Module RA-T-7	Window B-7 will alarm
Ckt. 9	2-60659	1551		Reflash Module RA-RAB-2	Window B-29 will alarm
Ckt. 10	2-60660	Spare		Spare	
Ckt. 11	2-60661	Spare		Spare	
Ckt. 12	2-60662	131		Reflash Module RA-RAB-3	Window B-9 will alarm
Ckt. 13	2-60663	Spare		Spare	
Ckt. 14	2-60664	584		Reflash Module RA-RAB-6	Window N-6 will alarm
Ckt. 15	2-60665	1007		Reflash Module RA-T-9	Window E-32 will alarm
Ckt. 16	2-60666	Spare		Spare	
Ckt. 17	2-60667	990		RA-RAB-19	
Ckt. 18	2-60668	188		Reflash Module RA-RAB-8	Window N-23 will alarm
Ckt. 19	2-60669	1634		I-SE-09-[illegible] Relay (B2C 73)	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX E

PP DC PP-238 CKT. 32 RTGB- TB CWD REV. 0

8.2.32
Bkr. 60132

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 20	2-60670	1001		Reflash Module RA-RAB-11	Window B-20 will alarm
Ckt. 21	2-60671	1701		RA-RAB-25	
22	2-60672	Spare		Spare	
23	2-60673				
Ckt. 24	2-60674	596		Reflash Module RA-RAB-28	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX F

PP DC LP-228 CKT. 02 RTGB- TB CWD REV. 0

8.3.2
Bkr. 2-6020

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 1		N/A		Control Room Emergency DC Lighting	No effect without loss of A/C lighting

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX G

PP DC PP-219 CKT. 13 RTGB- TB CWD REV. 0

8.3.13
Bkr. 60213

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
PP-238	Ckt. 23	444		Rad. Monitoring Panel No. 1	Closes sample isolation valve I-SE-26-1 to component cooling water radiation monitoring skid #1 (RS-26-1)
Ckt. 1	2-60551	1694		PACB-2	
Ckt. 2	2-60552	931		Breaker Test Station for 2A3 and 2B3 4160V Switchgear	Test Station out of service
Ckt. 3	2-60553	1579		RTGB-201, 203, 205 and HCVB Annunciators	Backup Power Supply
Ckt. 4	2-60554	933		Breaker Test Station for 2AB 4160V Switchgear	Test Station out of service
Ckt. 5	2-60555	740	LP Htr 2-3B and 2-4B	Reverse Current Valves	Will close reverse current valve SC-10-3B and 4B
Ckt. 6	2-60556	1004		Isolation Term Cabinet 2	Loss of many annunciators
Ckt. 7	2-60557	587		Waste Management Local Annunciator (Y")	Backup Power Supply
Ckt. 8	2-60558	1704		480V LC 2B5	
Ckt. 9	2-60559	638		Aux FW P2C I-SE-08-2 Local Control Station	
Ckt. 10	2-60560	740	HP Htr 2-5B	Reverse Current Valve	Will close reverse current valve SC-10-5B.
Ckt. 11	2-60561	638		Aux FW P2C RA-ST-3	
Ckt. 14	2-60564	1639		RA-ST-2	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX H

PP DC 2B CKT. 27 RTGB- 205 TB T6 CWD 657 REV. 0

8.3.27
Bkr. 60227

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	157	V-2515	Letdown Stop Valve	Fails closed, lose indication
F3 F4	F3P F4N	159	V-2524	RCP Controlled Bleedoff Isol. Valve	
F5 F6	F5P F6N	176	I-SE-02-01	Charging Line 2B1 Valve	Fails open, lose indication, reset to close
F7 F8	F7P F8N	194	V-2522	Letdown Containment Isol.	Fails closed, lose indication
F9 F10	F9P F10N	163	V-2512	Makeup Stop Valve	Fails closed, lose indication
F11 F12	F11P F12N	194	V-2523	Charging Line Isol Valve	
F13 F14	F13P F14N	564	V-6718	Waste Gas Containment Isol. Valve	Fails closed, lose indication, manually reset HS-6718 to open
F15 F16	F15P F16N	563	V-6341	RDT Cont Isol. Valve	
F17 F18	F17P F18N	576	V-5750	Waste Gas Cont. Isol Valve	
F19 F20	F19P F20N	190	LCV-07-11A	Reactor Sump Isolation Valves	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX H

PP DC 2B CKT. 27 RTGB- 205 TB T6 CWD 657 REV. 0

8.3.27
Bkr. 60227

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX I

PP DC 2B9 CKT. 28 RTGB- TB CWD REV. 0

8.3.28
Bkr. 2-60228

FUSE NO.	BREAKER	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 1	2-60701	882		Reflash Module RA-RAB-18	Window C-31 will alarm
Ckt. 2	2-60702			Spare	
Ckt. 3	2-60703			Spare	
Ckt. 4	2-60704			Spare	
Ckt. 5	2-60705	1553		Reflash Module RA-RAB-1	Windows A-4, A-9 will alarm
Ckt. 6	2-60706	259		Reflash Module RA-T-2	Window C-57 will alarm
Ckt. 7	2-60707	1007		Reflash Module RA-CC-1	Window E-32 will alarm
Ckt. 8	2-60708			Spare	
Ckt. 9	2-60709			Spare	
Ckt. 10	2-60710	1008		Reflash Module RA-RAB-4	Window B-33 will alarm
Ckt. 11	2-60711	1558		Reflash Module RA-RAB-7	
Ckt. 12	2-60712	875		Reflash Module RA-T-1	
Ckt. 13	2-60713			Spare	
Ckt. 14	2-60714			Spare	
Ckt. 15	2-60715			Spare	
Ckt. 16	2-60716			Spare	
Ckt. 17	2-60717	992		RA-RAB-20	
Ckt. 18	2-60718	188		Reflash Module RA-RAB-9	
Ckt. 19	2-60719	1803		Reflash Module RA-RAB-29	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX J

PP DC 2B CKT. 31 RTGB- 206 TB T28 CWD 646 REV. 0

2

8.3.3.1
Bkr. 2-6023

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	202	HCV-14-8B	Component Cool Wtr. Normal Supply Hdr. Isol. Valve	Fail closed, lose indication
F3 F4	F3P F4N	202	HCV-14-10	Component Cool. Wtr. Normal Return Hdr. Isol. Valve	Fail closed, lose indication
F5 F6	F5P F6N	211	HSE-14-3B HCV-14-3B	Component Cool. Wtr. from Shutdown Ht Exch 2B	Fail open, lose indication
F7 F8	F7P F8N	212	HCV-14-7	Component Cool. Wtr. to Reactor Cool. Pumps	Fail closed, lose indication
F9 F10	F9P F10N	212	HCV-14-6	Component Cool. Wtr. from Reactor Cool. Pumps	Fail closed, lose indication
F11 F12	F11P F12N	176	V-3661	Recirc. Draw Line Drain to Reactor Drain Tank	Fail closed, lose indication
F13 F14	F13P F14N	242	I-SE-03-1C	Safety Injection Tank Fill and Drain Valve	Fail closed, lose indication
F15 F16	F15P F16N	242	I-SE-03-1D	Safety Injection Tank Fill and Drain Valve	Fail closed, lose indication
F17 F18	F17P F18N	256	V-3632	SI Tank 2B1	Fail closed, lose indication
F19 F20	F19P F20N	256	V-3642	SI Tank 2B2	Fail closed, lose indication

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX J

PP DC 2B CKT. 31 RTGB- 206 TB T2B CWD 646 REV. 0

8.3.3.1
Bkr. 2-6023

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F21 F22	F21P F22N	282	HCV-3638	Check Valve Leakage Drain to RWT	Fail closed, lose indication
F23 F24	F23P F24N	283	HCV-3648	Check Valve Leakage Drain to RWT	Fail closed, lose indication
F25 F26	F25P F26N	289	FCV-07-1B	Containment Spray Valve	Fail open, lose indication
F27 F28	F27P F28N	316	HCV-08-1B	Main Steam Isol. Valve, Opening, Closing and Solenoid Test	Solenoid test valves fail open, stroke test valve fail open, lose indication, P49 will alarm
F29 F30	F29P F30N	319	FCV-23-4	Steam Gen. 2A Blowdown Isol. Valve	Fail closed, lose indication
F31 F32	F31P F32N	319	FCV-23-6	Steam Gen. 2B Blowdown Isol. Valve	Fail closed, lose indication
F33 F34	F33P F34N	320	FCV-26-1 FCV-26-3 FCV-26-5	Containment, Suction Return Rad. Sample Isol. Valve	Fail closed, lose indication
F35 F36	F35P F36N	578	V-5203	Primary Coolant Sample Valve	Fail closed, lose indication, local and remote
F37 F38	F37P F38N	579	V-5204	Press. Surge Line Sample Valve	Fail closed, lose indication, local and remote
F39 F40	F39P F40N	580	V-5205	Press. Steam Space Sample Valve	Fail closed, lose indication, local and remote

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX J

PP DC 2B CKT. 31 RTGB- 206 TB T28 CWD 646 REV. 0

2

8.3.3.1
Bkr. 2-60231

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F41 F42	F41P F42	586	HCV-25-1A thru 25-7A	Drain valves to Reactor to Auxiliary Bldg. Sumps	All valves this circuit fail closed, lose indication
F43 F44	F43P F44N	1520	V-3496	Minimum Flow Isol. Valve	Fail closed, lose indication, Annunciator P-2 will alarm
F45 F46	F45P F46N	1519	V-3571	Hot Leg HPSI Line Check Valve Leakage Drain Loop 2B	Fail closed, lose indication
F47 F48	F47P F48N	275	V-3738	SI Tank 2B1 Vent Valve	Fail closed, lose indication
F49 F50	F49P F50N	275	V-3740	SI Tank 2B2 Vent Valve	Fail closed, lose indication
F51 F52	F51P F52N	849	HCV-15-1	Primary Water Isol. Valve	Fail closed, lose indication
F53 F54	F53P F54N	1527	I-SE-05-1A	SI Tank 2A1 Sample Valve	Fail closed, lose indication
F55 F56	F55P F56N	1527	I-SE-05-1B I-SE-05-1A	SI Tank 2A2 and 2A1 Sample Valve	Fail closed, lose indication at local station
F57 F58	F57P F58N	1527	I-SE-05-1B	SI Tank 2A2 Sample Valve	Fail closed, lose indication at local station
F59 F60	F59P F60N	1527	I-SE-05-1C	SI Tank 2B1 Sample Valve	Fail closed, lose indication at local station

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX J

2

PP DC 2B CKT. 31 RTGB- 206 TB T28 CWD 646 REV. 0

8.3.3.1
Bkr. 2-60231

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F61 F62	F61P F62N	1527	I-SE-05-1D	SI Tank 2B2 Sample Valve	Fail closed, lose indication at local station
F63 F64	F63P F64N	1519	I-SE-03-2B	SI Tank Test Line to RWT/VCT	Fail closed, lose indication
F65 F66	F65P F66N	656	HCV-09-1B	Main Feedwater Isolation Valve	Window P-16 will alarm
F67 F68	F67P F68N	672	HCV-09-2B	Main Feedwater Isolation Valve	Window P-36 will alarm

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX K

PP DC 2B CKT. 38 RTGB- HVCB TB W8-RTE CWD 1239 REV. 0

8.3.38
Bkr. 2-60238

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F25	F25P	153	V-2581	Letdown to RAD Monitor	
F26	F26N				
F27	F27P			Spare	
F28	F28N				
F29	F29P			Spare	
F30	F30N				
F31	F31P			Spare	
F32	F32N				

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX L

2

PP DC 2AB CKT. 1 RTGB- 201 TB ____ CWD 800 REV. 5

8.4.1
2-60301

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F51		887		KWH Meter Output	Contact MPS, lose indication
F52		887		KWH Meter Output	Contact MPS, lose indication
F53		871		Gross MW Recorder	Contact MPS, lose indication
F54		871		Digital MW Recorder	Contact MPS, lose indication
F55		744		PT-12-30	None
F56		744		PT-16-2	None
All other ckts are spares					

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

2

APPENDIX M

PP DC 2AB CKT. 02 RTGB- 201 TB W13 RTF CWD 1241 REV. 0

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F11	F11P	543	V-6342	RDT Cont. Isol Valve	
F12	F12N				
F13	F13P	512	V-6565	Waste Gas Stop Valve	
F14	F14N				
F15	F15P			Spare	
F16	F16N				
F17	F17P	566	V-6728	Resin Disch Stop Valve	
F18	F18N				

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX N

2

PP DC 2AB CKT. 03 RTGB- 205 TB T2 CWD 645 REV. 0

8.4.3
Bkr. 2-60303

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	151		Letdown Press. and Intermediate Letdown Temp. Channels	Loss of indication PCV-2201P, Q On RTGB-205
F3 F4	F3P F4N	158	LCV-2110P LCV-2110Q	Letdown Throttle Valves	Lose indication only, valves still function
F5 F6	F5P F6N	160	V-2513	Volume Control Tank Vent	Fail closed, lose indication
F7 F8	F7P F8N	163		Not on indicated CWD*	
F9 F10	F9P F10N			Spare	
F11 F12	F11P F12N	563	V-6300	RDT Vent Stop Valve	Fail open, lose indication
F13 F14	F13P F14N	564	V-6565	Waste Gas Stop Valve	Fail closed, lose indication
F15 F16	F15P F16N	565	V-6739	Spent Resin Tank to Drumming Station	Fail closed, lose indication
F17 F18	F17P F18N	566	V-6728	Resin Disch Stop Valve	Fail closed lose indication
F19 F20	F19P F20N	543		Reactor Drain Pump 2B	Loss of pump alternator
F21-F32	Spares			Spares	

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX O

PP DC 2AB CKT. 04 RTGB- 205 TB T10 CWD 645 REV. 0

8.4.4
Bkr. 2-60304

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 F2	F1P F2N	151	PCV-2201P PCV-2201Q	Letdown Pressure Control	Loss of indication only
F3 F4	F3P F4N	160	V-2500	Volume Control Tank Inlet	If de-energized opens to VCT
F5 F6	F5P F6N	160	V-2513	Volume Control Tank Vent	Fail closed, lose indication
F7 F8	F7P F8N	160	V-2507	RCP Controlled Bleedoff	
F9 F10	F9P F10N	163	V-2512	Makeup Stop	Fail closed, lose indication
F11 F12	F11P F12N	563	V-6300	RDT Vent Stop Valve	Fail open, lose indication
F13 F14	F13P F14N	564	V-6565	Waste Gas Stop Valve	Fail closed, lose indication
F15 F16	F15P F16N	562	LCV-6604	Flash Tank Level Valve	
F17 F18	F17P F18N	562	V-6307	Flash Tank Diverter Valve	
F19 F20	F19P F20N	562	V-6308	Flash Tank N_2 Stop Valve	
All other fuses this T.B. shown as spares F21 thru F32					

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX P

PP DC 2AB CKT. 11 RTGB- 201 TB ____ CWD 800 REV. 5

8.4.11
2-60311

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
F1 and F2		720		DEH Governor Fluid Pump 2A MP1	None
F3 and F4		883		Generator Protective Relaying	
All other circuits are spares					

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX Q

PP DC 2AB CKT. 19 RTGB- 202 TB ____ CWD 638 REV. 6

8.4.19
2-60319

2

FUSE NO.	LINE NO.	LOAD			CONDITIONS REQUIRED TO DE-ENERGIZE
		CWD	TAG	TITLE	
Ckt. 1		638		Solenoid Valves I-SE-08-1 and I-SE-08-2	Energ. to close

ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0960030, REVISION 2
DC GROUND ISOLATION

APPENDIX R

PP 240 CKT. 24 RTGB- TB PD & MD 64J REV. 0

8.4.24
Bkr. 2-60324

FUSE NO. LINE NO. [illegible] CONDITIONS REQUIRED TO DE-ENERGIZE

		CWD	TAG	TITLE	
Ckt. 4		999		Reflash Module RA-T-8	Window D28 will alarm
Ckt. 12		742		Reflash Module RA-T-3	Window E26 will alarm
Ckt. 20		1003		Reflash Module RA-RA8-12	Window A50 will alarm
NOTE: All other circuits this panel shown as spares					