

DOCUMENT TITLE PLANT ANNUNCIATOR Summary - Unit 2DOCUMENT FILE NUMBER 2-0030131DOCUMENT REVISION NUMBER 1DOCUMENT DISTRIBUTED ON 5-16-83

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT NUMBER 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131
REVISION 1

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 1 Reviewed by F R G April 14 1983

Approved by J. H. Bauer Plant Manager 13 April 5/12 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.

FOR INFORMATION ONLY

This document is not controlled. Before use,
verify information with a controlled document.

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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)

<u>PANEL LETTER</u>	<u>NAME</u>	<u>NO. OF SHEETS</u>
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 & Intake 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. X-	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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6.0 REFERENCES:

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

7.0 RECORDS REQUIRED:

Normal Log Entries

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ANNUNCIATOR PANEL A 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
START-UP XPMR 2B △ /CURRENT TRIP A-1	1. Start-up XPMR 2B Lock-out relay has been actuated by differential current, isolating the transformer. 2.(A) S/W/O OCBs 8464 indicate-green. (B) XPMR 4.16-6.9KV output BRK #2-20701, 2-30202 indicate-green. (C) If auxiliaries on S/U XPMR: No Voltage on "B" elect. buses and loss of running "B" Equip.	1. XPMR Lock-out; (A) Both S/U XPMR S/W/O OCBs Open - (4E-4H). (B) S/U XPMR output FOR BRK to 2B4-4.16, 2B1-6.9 KV buses open. (C) Possible loss of offsite pwr to "B" side 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	> 40% Current Unbalance	74 OCB Diff. Current Relay Trip Alarm Relay ----- 2B2 4160V	Q40's 902 903
START-UP XPMR 2B FAULT PRESS TRIP A-11	1. S/U XPMR 2B Lock-out relay has been actuated by hi-rate of pressure increase indicating fault. (Isolates XPMR) 2.(A) S/W/O OCBs 8461-8464 indicate-green (B) XPMR 4.16-6.9 KV Output BRK 2-20701, 2-30202 indicate-green. (C) If auxiliaries on S/U XPMR: No voltage on "B" elect. buses and loss of running "B" equipment.	1. S/U XPMR Lock-out; (A) Both S/U XPMR S/W/O OCBs Open (4E-4H). (B) S/U XPMR output FOR BRK to 2B4-4.16, 2B1-6.9 KV buses open. 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	90-150 mmHg sudden pressure	74SP Fault Press Relay ----- 4160 V Bus 2B2 (later Mkr) (#9 on 2B2)	Q40 903
START-UP XPMR 2B ALARM PANEL A-21	1. Local alarm at XPMR; indicates abnormal condition in 2B S/U XPMR. 2.(A) Temperature Recorder TR-22-30, (B) Transformer amperage	1. No Auto-Action (alarm only) 2.(A) Have Operator check XPMR Alarm Panel at XPMR. (B) Refer to S/U XPMR Off Normal Procedure No. 2-0910030.	LATER	74-X-1, 2, 3, 4 DCX, 63-V Alarm Relays ----- 2B S/U XPMR Cabinet	Q40 908
START-UP XPMR 2B 4 KV GROUND A-31	1. Indicates Presence of Ground on 2B S/U XPMR low side 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 Dept. immediately (C) Systematically remove bus loads to locate ground.	< 1.6 OHMS to Ground	64-STB-2 4160 - Ground Relay ----- BRK on 4160 V Bus 2B2 #9 on 2B2	Q40 903
4KV SWGR 2B2 FEEDERS OVERLO TRIP A-41	1.(A) Aux S/U XPMR Feeder BRK to 2B2 bus have tripped open from overload. (B) or, breaker has been racked out. (C) or, breaker fuse failure. 2.(A) Feeder BRK lights - green. (B) Loss of "B" condensate pump - Htr Drain Pump.	1.(A) 2B2 4160V bus feeder BRK open - possible loss of offsite pwr. to "B" elect. side. (B) Possible turbine runback and Rx trip from loss of pumps. 2.(A) Refer to S/U or Aux. XPMR Off-Normal Procedures. (B) If Rx trips, refer to Rx Trip Procedure No. 2-0030130.	LATER	74/902 74/903	Q40 907 915
4KV SWGR 2B2 SS ISOL A-51	1. Feeder BRK 2-20302 Norm/Isol switch in Turbine SWGR Room. 2. No BRK indicate lights for BRK 2-20302.	1. BRK control ability is lost from Control Rm. 2.(A) Have Operator investigate BRK 2-20302. (B) Return NORM/ISOL SW. to "NORMAL" if applicable	NORM/ISOL.	SS/ISOL. Isolate Switch ----- Turbine SWGR Room on BRK 2-20302	Q40 907

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ANNUNCIATOR PANEL A 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
START-UP XPMR 2B 240KV GROUND TRIP A-2	1. S/U XPMR 2B lock-out relay has been actuated by 24KV side ground isolating the transformer. 2.(A) S4YD OCBS 8461-8464 indicate - green (B) XPMR 4.16-6.9 KV output BRK 2-20701, 2-10202 - indicate - green. (C) If auxiliaries on S/U XPMR; No voltage on "B" elect. buses and loss of running "B" equip.	1. Transformer Lock-out: (A) Both S/U XPMR S4YD OCBS open - (4E-4D) (B) XPMR output FUR BRK to 2B4-4.16, 2B1-6.9 KV buses open. (C) Possible loss of off-site power. 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030		74-RSB	QAD 903
START-UP XPMR 2B LOCKOUT RELAY FAILURE A-12	1. Loss of lock-out protection for the 2B S/U XPMR due to loss of DC power to lock-out relay. 2. NONE - unless trip signal for XPMR is generated, then the BRK will not trip.	1. NONE 2.(A) Immediately investigate cause; contact Elect. Dept. and monitor for XPMR trip conditions. (B) Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	"0" DC Volts	74 - STB	QAD 903
4KV S4CR TIES 2B2-2B3 OVERLOD TRIP A-22	1.(A) Tie BRKs have opened; possible loss of power to the 2B3 4160V bus. (B) OR, overload condition has opened BRKs. 2.(A) Tie BRK - green indicator lights. (B) Loss of running 2B3 Electrical Equipment.	1. Loss of power to 2AB 4160V 2.(A) Ensure other back-up equipment running and investigate cause for overload. (B) Strip all loads from bus. (C) Notify Electrical Department.		74/935 74-1-937	QAD-935 QAD-937
START-UP XPMR 2B 6.9KV GROUND A-32	1. Ground Fault on 6.9 KV low side of the 2B S/U XPMR (alarm only). 2. NONE	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) Systematically remove bus loads to locate ground.		64/STB-1	QAD 903
6.9KV S4CR 2B1 FEEDERS OVERLOD TRIP A-42	1.(A) Feeder BRK to the 6.9KV 2B1 bus have opened from overload condition. (B) OR, breakers have been racked out. 2.(A) Feeder Breakers - green lights (B) Zero voltage - 2B1 6.9KV bus (C) Loss of "B" FWP, and 2B1, 2A2 R/CPS	1.(A) Loss of power to 2B1 6.9KV bus. (B) Possible Turbine Runback, R4 TRIP 2.(A) If R4 trips, see R4 Trip Procedure No. 2-0030130. (B) Open all breakers on bus. (C) Notify Electrical Department		74/905 74/913	QAD-905 QAD-913
4KV S4CR TIES 2B2/2B3 CLOSE FAIL/ SS ESOL A-52	1. Indicates S4CR ties will not close due to loss of DC control power or NORM/ISOL SW. in ESOL position 2. Possible loss of BRK indicate lights on RTGB.	1. NONE 2. Return NORM/ISOL SW. to NORMAL, if normal, then notify Electrical Department.		74-2/937 SS/Isol 935 SS/Isol 937	QAD-935

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ANNUNCIATOR PANEL A VERTICAL COLUMN 3

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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	SETPPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
6.9KV SWGR 2B1 Δ CURRENT TRIP A-3	1. Indicates 2B1 6.9KV SWGR Feeder BRK have opened, from a differential current trip. 2.(A) Feeder BRK lights green. (B) No voltage 6.9KV 2B1 bus. (C) Loss of 8 MPWP, 2B1, 2A2 RCP's.	1. De-energization of the 6.9 2B1 bus loss of all running equipment on the bus. 2.(A) If R _x trips, see R _x trip Procedure No. 2-0030130. (B) Open all BRK on bus. (C) Notify Electrical Department	LATER	86/2B1	QMD-905
4KV SWGR 2B2 Δ CURRENT TRIP A-13	1. Indicates feeder BRK to the bus have opened from a differential current trip. 2.(A) Feeder BRK lights green. (B) Zero voltage on 2B2 4160V bus, and any other buses being fed from 2B2. (C) Loss of "B" condensate pump, Htr drain Pump.	1. De-energization of the 4160V 2B2 (A) Bus - loss of all equipment fed (B) Possible turbine runback, R _x trip. 2.(A) Ensure diesel picking up essential bus. (B) If R _x trips, see R _x trip Procedure No. 2-0030130. (C) Notify Electrical Department	LATER	86/2B2	QMD-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. NONE 2.(A) Check plant electrical parameters to determine cause for low voltage. (B) Check system condition by calling Division Dispatcher. (C) Contact Electrical Department. (D) Check for possible XPR problem.	LATER	27X1/2B1 27X1/2B2	QMD-952
BLANK A-33					
120V AC INSTR BUS MB/MD-1/SB INVERTER TROUBLE R A-43	1. Indicates problem with 2B1 Inv./Bus: (A) DC Voltage High/Low (B) AC Voltage High (C) DC BRK Trip (D) Over/Under Frequency (E) Bus undervoltage (F) Ground Fault 2. Possible loss of 1 channel of ESFAS, RPS, N1's, and half of R _x Trip BRKs open.	1.(A) Possible loss of "B" channel ESFAS, RPS, N1s, & R _x trip BRK. (B) If 2 Inst. AC buses are lost; R _x trip will occur. 2.(A) If TX Trip occurs; refer to R _x trip Procedure No. 2-0030130. (B) Put INST Bus onto maint. bypass XPR. (C) Notify Electrical Department	LATER	RA-RAB-13 RA-RAB-29 Reflash Panels 13) South wall of B Cable Spreading Rm. 19) Wall behind B Battery Charger	QMD-1010 QMD-1803
120V AC INSTR BUS MB/MD-1 INVERTER TROUBLE A-53	1. Indicates problem with 2B1 Inv./Bus: (A) DC Voltage HI/LO (C) Over/Under Frequency (B) AC Voltage High (E) Bus Under Voltage (C) DC BRK Trip (F) Ground Fault 2. Loss of 1 channel of ESFAS, RPS, N1s, and half R _x Trip BRKs open.	1.(A) Possible loss of "B" channel ESFAS, RPS, N1s, R _x Trip BRK. (B) If 2 Inst. AC buses are lost; R _x trip will occur. 2.(A) If R _x Trip occurs refer to R _x trip Procedure No. 2-0030130. (B) Put Inst Bus onto maint. bypass XPR. (C) Notify Electrical Department	LATER	RA-RAB-15 Reflash Panel South Wall of B Cable Spreading Room	QMD-1010 QMD-1809

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ANNUNCIATOR PANEL A 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
6.9KV/4KV SWGR 2B1/2B2/2B3 DIFF LOCKOUT RETRAYS FAILURE R A-5	1. Loss of lock-out Protection for one or more Elect. buses listed. Indicates loss of relay IC Control power. 2. NONE, unless trip signal is generated for one of the indicated relays; then the assoc. BRK will not trip	1. NONE 2.(A) Contact electrical department. (B) Investigate lock relay targets. (C) Monitor Switchgear parameters closely to Identify a trip condition	0" DC VOLTS	RA-RAB-1 Reflash Panel South Wall of B Cable Spreading Room	QAD-1553
4KV SWGR 2B3 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 2B3 4160V bus (C) Loss of 2B3 Bus loads; ICW, CCW, CVCS. (D) Start-Up of 2B diesel generator.	1. 2B3 loads trip, diesel starts up, and loads will re-sequence onto 2.(A) Determine cause for bus trip (B) Notify Electrical Department (C) Ensure essential equipment running.	LATER	86/2B3	QAD-205
START UP XPMR 2B 6.9KV/4KV BRK FAILURE A-24	1. Indicates BRK Trip signal was sent to BRK to open, but BRK failed to open. 2. Respective BRK lights 6.9KV/ 2-30202, 4160V; 2-20701 - Red or out.	1. Protective action to isolate XPMR is inoperative or failed. 2. Notify System Protection via immediate contact of Division Dispatcher.	N/A	74/8SE	QAD-903 903
STA SERV XPMR 2B5 TROUBLE R A-34	LATER	LATER	LATER	Reflash Panel Wall Behind 2B5 480V Load Center	QAD-1711
4KV SWGR TIES 2B3/2AB OVERID TRIP A-44	1.(A) Indicates 2AB bus overload condition (B) Or, tie breakers are racked out. 2.(A) Tie BRK lights green. (B) Loss of 2AB 4160V loads - changing, ICW, 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	QAD-939 QAD-941
4KV SWGR TIES 2B3/2AB CLOSE FAIL/ SS ISOL A-54	1.(A) Indicates 2B3 to 2AB 4160V BRK 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 Switch in NORMAL position. (B) If in NORMAL, notify Electrical Dept.	NORM/ISOL Switches in "ISOL"	74-2 SS/Isol/939 74-2 SS/Isol/941 Fail Circuit Rly/ Isolate Switches	QADs QAD-939 QAD-941

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ANNUNCIATOR PANEL A VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSISTENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
4KV SRR 2A8 LOAD SHED RLY FAILURE A-5	1. Load shed relay has failed for 4160V SRR 2A8. Indicates relay DC control power is lost. 2. NONE	1. NONE 2. Notify Electrical Department.	"0" DC VOLTS	74-4	QAD-951
4KV SRR 2B3 LOAD SHED RLY FAILURE A-15	1. Load shed relay has failed for 4160V SRR 2B3. Indicates relay DC control power is lost. 2. NONE	1. NONE 2. Notify Electrical Department.	"0" DC VOLTS	74-4	QAD-950
S/U RMR 2B TIE SRR 2B4 RMR RCR OVERLOAD TRIP A-25	LATER	LATER	LATER	74	QAD-1286
480V SRR 2B5 VOLT \leq 96% CHOPED A-35	LATER	LATER	LATER	2/X1 64, 2-3 27 TX/2B5	QAD-1711 QAD-1857
480V SRR 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	QAD-1711
4KV TIE SRR 2B4 U NO.2 FEED BUS Δ LOCKOUT RELAY FAIL A-55	1. 2B4 4160V bus lock-out 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 Dispatcher.	"0" DC VOLTS	74B-2B4	QAD-1289

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ANNUNCIATOR PANEL A 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
EMERG 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 out.	1. NONE 2.(A) Attempt reclose breaker (B) Check BRK locally, notify Electrical Department if necessary.		74-1	QAD-963
EMERG DG 2B ONE ENGINE START FAILURE A-16	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.	EXH ENGINE EXHAUST TEMP DETECTORS A/B DIESEL EXHAUSTS	QAD-972
EMERG DG 2B LOCKOUT / SS ISOL A-26	1. Diesel lock-out mechanism has tripped & locked-out or NORM/ISOL switches have been put to the "ISOLATE" position. 2. Possible diesel trip if lock-out actuates.	1. Possible diesel trip or loss of remote control capability. 2.(A) Determine cause for the alarm locally. (B) Return NORM/ISOL SW to NORMAL if applicable.	Any of Multiple (3) NORM/ISOL Switch in ISOL	86 SHRd, SS-1 SS-3, IR SS/1616	QAD-1129
EMERG DG 2B LOCAL ALARM A-36	1. 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.		70x6	QAD-1128
EMERG 4KV SWGR 2B3 VOLT \leq 90% A-46	1. 2B3 4160V Bus voltage has decayed to \leq 3/44 volts 2. Voltmeter on RTCB-201	1. If voltage continues to decay, undervoltage 2.(A) Increase excitation if on diesel.	Volts	2-1 270K 2B3	QAD-1887
EMERG DG 2B BREAKER START INHIBIT / SS ISOL A-56	1.(A) No DC power on 2B8 DC bus available to start diesel. 2. D/G start and/or BRK control switch 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 NORM/ISOL SW to "NORMAL" if applicable.	Batt BRK Open NORM/ISOL ISOL 4160V BRK Racked Out	74/3 SS/ISOL 74/3 LATER	QAD-963 QAD-1892

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ST. LOUIS UNIT NO. 2
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PLANT ANNUNCIATOR SUBBARY

ANNUNCIATOR PANEL A VERTICAL COLUMN 7

MINIATURE TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION - VALID ALARM 3. POSSIBLE ACTION - VALID ALARM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM 3. POSSIBLE ACTION - VALID ALARM	SETTING (A) LATER (B) 11-11 ² 11-11 17 ² Others LATER	SETTING ELEMENT NUMBER & LOCATION RA-7 Ref. Panel N. Hall In Front 2A1 48V Load Center	REFERENCE
R A-7 48V SRR 2B1 FUSES OVERLOAD TRIP	1. (A) Sudden casing pressure increase, (B) OR, Windup temp. high, or high-high, (C) OR, Pressure relief device actuation, 2. Loss of XPR - green BKK lights.	1. (A) 2B1 SS XPR 416V feeder BKK overload trip, racked out, or fuses blown, (B) OR; 2B1 SS XPR 48V output BKK overload trip or racked out. 2. XPR BKK lights out or green, loss of voltage and loads on 2B 48V Load Center.	(A) LATER (B) 11-11 ² 11-11 17 ² Others LATER	RA-7 Ref. Panel N. Hall In Front 2A1 48V Load Center	QAD-988
R A-17 48V SRR 2B1 INTERFERENCE / GROUND	1. (A) Ground in loads fed from 2B1 48V bus, (B) OR, Under-voltage condition in SRR (later) (C) Possible alarm A7, A17 (later - possible loss of XPR?) 2. Overload trip of any 48V feeder BKK on 2B1, 2B2, or 2B5 48V buses. 3. Possible indication by loss of MCC equipment which tripped.	1. (A) Ground on 2B1 SS XPR low side. (B) Ground in loads fed from 2B1 48V bus, (C) Under-voltage condition in SRR (later) (D) Possible alarm A7, A17 (later - possible loss of XPR?) 2. Overload trip of any 48V feeder BKK on 2B1, 2B2, or 2B5 48V buses. 3. Possible indication by loss of MCC equipment which tripped.	LATER	74/947 R/976 LATER	QAD-967 QAD-976
R A-27 48V SRR 2B1/2B2/2B5 MCC FUSES OVERLOAD TRIP	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	LATER	27, 64 LATER	QAD-988
R A-37 48V SRR 2B1/2B2/2B5 MCC FUSES OVERLOAD TRIP	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	LATER	R LATER	QAD-988 QAD-993 QAD-1713 QAD-985
R A-47 48V SRR 2B1/2B2/2B5 MCC FUSES OVERLOAD TRIP	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	LATER	74-1/947 R/948 R/1712 LATER	QAD-968 QAD-1712 QAD-981
R A-57 48V SRR 2B1/2B2/2B5 MCC FUSES OVERLOAD TRIP	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	1. (A) 2B2 SS XPR 416V feeder BKK bus tripped on overload, or BKK is racked out or fuses blown, (B) 2B2 SS XPR 48V output BKK to 2B2 or 2B5 load centers tripped on overload or racked out. 2. BKK indication lights or loss of bus voltage.	LATER	74-2 SS/988 SS/1712 LATER	QAD-988 QAD-1712

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL COLUMN B

WIRING TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STA 220V XPR 282 TROUBLE	1. Trouble or trip of 282 station service XPR from: (A) Salton pressure alarm/trip (B) Windling temperature HI/HE-HI alarm (C) Oil level low/high temp. (D) Pressure relief actuation. 2. If XPR trips: loss of running eqdp. on 2B & 2B5 48W load centers. on 2B and 2B5 48W load centers.	(A) 90 - 150 and 150 (B) HI - 112°C (C) Lo Level HI Temp. 90°C (D) Actuation	RA-608-20 Ref. Lash Panel Behind 2A5 48W MDC	QAD-992
R				
BLANK				
A-18				
48W 542R 282 WALT < 912/ GROUND	1. 282 48W Load Center, has decayed in voltage to < 412 volts. 2. 282 4160 V Bus voltage indication.	432 Volts	27 X 1, 64 Located in 48W 542R 282 Instr. Compartment	QAD-992 QAD-178
48W 542R BES TRIPS 282 - 2AB OVERLOAD TRIP	1. 282-2AB 48W bus tie BRK have tripped open due to overcurrent condition on 2AB bus. 2. (A) Bus tie BRK Lights - green. (B) Loss of running equipment on 2AB 48W Load center and 2AB MDC.	Time Dependent O.C. Trip	BRKS 2-40506/282 L.C. 2-40706/2AB L.C. O.C. Trip Cables Located In above Breakers	QAD-981 QAD-982 PD & HD Sh. 15
A-38				
120V DC BATT 2B DISCH HI / BRK OPEN				
A-48				
48W 542R BES TIE 282-2AB SS ISOL	1. Bus tie BRK 282-2AB control has been isolated from Control Room. 2. Loss of one or both tie BRK indicate lights.	LATER	52B 74 LATER SS/ISOL - 981/982 Switches on L.C. 2AB and 2B2	QAD-1812 QAD-981 QAD-982

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0050131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A 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
PZR HTR XPMR 2B TROUBLE	1. Transformer 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 XPMR will show PZR BRK - green and loss of pressurizer heaters.	1. LATER 2.(A) Turn-off PZR heaters P-2, BU-4, 5 & 6 until problem is resolved. (B) Have operator check XPMR locally. (C) Notify Elect. Department if necessary.	A) HI 112°C B) HI-HI 177°C Others Later	RA-RAB-1 Reflash Panel South Wall of B Cable Spreading Room	OWD-132
PZR HTR XPMR 2B3 4KV FEEDER OVERLOAD TRIP	1. Overload condition on 2B3 SS XPMR feeder BRK to PZR htr bus. 2.(A) Feeder BRK indication - green. (B) Loss of 1/2 of pressurizer heaters.	1. 2B3 SS XPMR feeder BRK open. 2.(A) Turn-off PZR heaters P-2, BU-4, 5 & 6 until problem is resolved. (B) Notify Elect Dept. and investigate cause for overload.	PM & Later	74-1 LATER	OWD-944 PM & MD
480V SWR 2B2 LOAD SHED RLY FAILURE	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.	"O" DC VOLTS	74 LATER	OWD-992
480V MCC 2B5/2B6/2B8 NON-ESS SECT LOCKOUT	1. Indicates non-essential section of one or all the MCCs listed has been isolated triggered by LATER. 2. Loss of any running equip. on the non-essential sections of the bus(es).	1. Opening of one or more MCC non-essential loads isolation breaker(s). 2.(A) When black-out conditions have cleared, or if D/G can easily handle the added load, close the isolated non-ess. ISOL. BRK.	LATER	M/1013 M/1016 M/1014 LATER	OWD-1016 OWD-1013
480V SWR 2B1 TIE TO 2A1 OVERLOAD TRIP	1. Tie BRK 2A1-2B1 480V turbine MCCs has opened on overload, possibly causing a loss of power to one of the buses 2.(A) Bus tie BRK 2-40420 indicate lights - green. (B) Loss of running equip. on tripped bus.	1. 2A1-2B1 MCC tie BRK 2-40420 opens 2.(A) Identify cause for trip before reloading through the tie brk. (B) Contact Electrical Dept if necessary.	LATER	R LATER	OWD-975
PZR HTR XPMR 2B3 FUR CLOSE FAIL/ SS ISOL	1. Indicates inability to close PZR htr SS XPMR 4160V feeder BRK due to loss of DC Control Power, or NORM/ISOL SW in "ISOLATE" position. 2. Loss of XPMR FUR BRK indicate lights.	1. Inability to close 2B3 SS XPMR 4160V FUR BRK and/or loss of remote BRK Control capability 2.(A) Investigate alarm locally. 2.(B) Check fuses, DC power supply. (C) If NORM/ISOL SW in "ISOLATE" return to "NORMAL" if applicable.	"O" VOLTS ----- NORM/ISOL Switch to "ISOLATE"	74-2 SS/ISOL LATER	OWD-944

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030331, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL A VERTICAL ORIGIN 10

MESSAGE TITLE	1. INDICATED CONDITION 2. OTHER FROM INDICATION WHICH VERIFY OR PLANT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING ELEMENT NUMBER & LOCATION	REFERENCE
125V DC BUS 2B/2BB (GROUND)	1. Positive or negative ground on 2B-2BB 125V DC bus, or equipment fed from bus. 2. (A) Observe if alarm case in concurrent 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 IE 88K. 2. (A) If possible, STOP/IE-ENR125 strongly energized concurrent with annunciator receipt. (B) Follow DC Ground Isolation Off-normal Procedure No. 2-0960030.	79.5 K To Ground	64B, 64P Ground Actuating Relay In 2AB Batt. Charger	QAD-1002 QAD-1002 P0 & P0 Sheet 68A
125 V DC BUS 2B/2BB BATT CHRG 2B/2BB TROUBLE	1. Battery charger 2B or 2BB trouble or trip from: (A) HI or low voltage (B) HI voltage shutdown (C) Loss of AC power (D) Control power off (E) No charge alarm 2. Check 2B-2BB DC bus voltage and charge/discharge amperage.	1. HI-Voltage will shut down the battery CH. 2. (A) Investigate cause for alarm locally. (B) If HI Voltage shutdown, try to reset HVSD relay, trouble charger. (C) If charger trips, ensure other 2B or 2BB charger is running 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-2B bus tie. (E) Notify the Electrical Department.	HF %Volts: >144.1 VDC LO Volts: <125 VDC HI Volts S/b >151.9 VDC	RA-64B-10	QAD-1002 QAD-1002
125V DC BUS 2B UNDERVOLTAGE	1. 125V 2B-2BB buses voltage has delayed to <u>LATER V.</u> 2. Check the 2B-2BB DC bus voltmeter and charge/discharge ammeter.	1. NRE 2. (A) Check for charger trip. (B) Re-start charger if possible.	LATER	27	QAD-1002
125V DC BUS 2AB (GROUND)	1. Positive or negative ground on 2B-2BB 125V DC bus, or equipment fed from bus. 2. (A) Observe if alarm case in concurrent 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 running equip., it's DC BKK could trip from overload. 2. (A) If possible STOP/IE-ENR125 strongly suspected equipment which was started/energized concurrent with annunciator receipt. (B) Follow DC Ground Isolation Off-Normal Procedure No. 2-0960030.	LATER	64P, 64B 2AB	QAD-1003
125V DC BUS 2AB BATT CHRG TROUBLE	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) No 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 tie BKKs. (D) Notify Electrical Department.	LATER	RA-64B-12	QAD-1003
125V DC BUS 2AB UNDERVOLTAGE	1. 125V 2AB DC bus voltage has delayed to <u>LATER V.</u> 2. Check the voltage and charge/discharge amperage on the DC bus feeding the AB bus.	1. NRE 2. (A) Start batt. charger if not running, and close output BKK to 2AB bus. (B) Snap Tie BKK to the other DC bus if available.	LATER	27	QAD-1003

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 8 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
START - UP XPMR 2A Δ CURRENT TRIP B-1	1. S/U XPMR 2A lock-out relay has been actuated by differential current, isolating the XPMR. 2.(A) S/WD OCBs 8W23-8W40 indicate - green. (B) XPMR 4.16-6.9KV output BRK 2-20601,2-30102 indicate - green. (C) If auxiliaries are S/U XPMR: No voltage on elect. buses and loss of running equipment	1. XPMR Lockout: (A) Both S/U XPMR S/WD OCBs open - (2E-24) (B) XPMR output FTR BRK to 2A4-4.16, 2A1-6.9 KV buses open. (C) Possible loss off-site power to "A" side 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	LATER	74 DEA	QMD-901
START - UP XPMR 2A FAULT PRESS TRIP B-11	1. S/U XPMR 2A lockout relay has been actuated by HI rate of pressure increase indicating fault. (Isolates XPMR) 2.(A) S/WD OCBs 8W23-8W40 indicate-green. (B) XPMR 4.16-6.9KV output BRK 2-20601,2-30102 indicate - green. (C) If auxiliaries on S/U XPMR: No voltage on elect. buses and loss of running equip.	1. XPMR Lockout: (A) Both S/U XPMR S/WD OCBs open - (2E-24) (B) XPMR output FTR BRK to 2A4-4.16, 2A1-6.9 KV buses open. (C) Possible loss off-site power to "A" side. 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	LATER	74 SP Fault Press Relay on 2A2 4160V bus (BRK panel #152-212-2)	QMD-901
START - UP XPMR 2A ALARM PANEL B-21	1. Local alarm at XPMR; indicates abnormal condition in 2A S/U XPMR. 2. Temp. recorder TR-22-30, XPMR former amperage.	1. No direct auto-action (alarm only). 2.(A) Have Operator check XPMR alarm panel at XPMR. (B) Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	LATER	74-X	QMD-908
START - UP XPMR 2A 4KV GROUND B-31	1. Indicates presence of ground on 2A S/U XPMR 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	QMD-
4KV S/WR 2A2 FEEDERS OVERID TRIP B-41	1.(A) Aux/S/U XPMR FTR 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 off-site power to "A" elect (B) Possible turbine runback and Rx trip 2.(A) Refer to S/U or Aux XPMR Off-Normal Procedures (B) If Rx trips; refer to Rx trip Procedure No. 2-0030130.	LATER	74/906 74/914	QMD-906 QMD-914
4KV S/WR 2A2 SS ISOL B-51	1. Feeder BRK 2-20102 NORM/ISOL switch in "ISOLATE" position in Turbine S/WR 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 NORM/ISOL SW to "NORMAL" if applicable.	CS in "ISOL"	SS/ISOL Turbine S/WR Room	QMD-906

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B 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
START - UP XPMR 2A 240KV GROUND TRIP B-2	1. S/U XPMR A lockout relay has been actuated by 240KV side ground, isolating the XPMR. 2. (A) S/U OCBs 8W40-8W23 indicate - green. (B) XPMR 4.16-6.9KV output BRK 2-20601, 2-30102 indicate green. (C) If oscillates on S/U XPMR: No voltage on "A" elect. buses and loss of running "A" equip.	1. XPMR lockout: (A) Both S/U XPMR S/U OCBs open - (2#-2#) (B) XPMR output PTR BRK to 2A2-4.16, 2A1-6.9 KV buses open. (C) Possible loss offsite power to "A" side. 2. Refer to S/U XPMR Off-Normal Procedure No. 2-0910030 Off-Normal		74 - NSA	QMD-901
START - UP XPMR 2A LOCKOUT RELY FAILURE B-12	1. Loss of lock-out protection for the 2A S/U XPMR, due to loss of DC power to lockout relay. 2. NONE - unless trip signal for XPMR is generated, then the BRK will not trip.	1. None 2. (A) Immediately investigate cause; contact Elect. Dept and monitor for XPMR trip conditions. (B) Refer to S/U XPMR Off-Normal Procedure No. 2-0910030.	"0" DC Volts	74B STA	QMD-901
4KV SWGR TIES 2A2-2A3 OVERLOAD TRIP B-22	1. (A) Tie BRK have opened; possible loss of power to the 2A3 4160V bus. (B) Or, overload condition has opened BRK. 2. (A) Tie BRK - green indicator lights (B) Loss of running 2A3 electrical equip.	1. Possible loss of power to 2AB 4160V equip. 2. If power is lost: (A) Ensure other back-up equipment running, and investigate cause for overload. (B) Strip all loads from bus. (C) Notify Electrical Department.		74/934 74-1-936	QMD-934 QMD-936
START - UP XPMR 2A 6.9KV GROUND B-32	1. Ground fault on 6.9KV low side of the 2A S/U XPMR - (alarm only). 2. NONE	1. None (alarm only). 2. (A) Inspect 6.9KV bus ground fault relay target. *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/SEA-1	QMD-901
6.9KV SWGR 2A1 FEEDERS OVERLOAD TRIP B-42	1. (A) Feeder BRK to the 6.9KV 2A1 bus have opened from overload condition. (B) Or, breakers have been racked out 2. (A) Feeder BRK - green lights (B) Zero voltage - 2A1 6.9KV bus (C) Loss of "A" PMP and 2A1, 2B2 RCPs	1. (A) Loss of power to 2A1 6.9KV bus and all running equip. on the bus (B) Possible turbine runback, Rx trip. 2. (A) If Rx trips, see Rx Trip Procedure No. 2-0030130. (B) Open all breakers on bus. (C) Notify Electrical Department.		74/904 74/912	QMD-904 QMD-912
4KV BUS TIES 2A2-2A3 CLOSE FAIL/ /SS ISOL. B-52	1. Indicates SWGR ties will not close due to loss of DC control power or NORM/ISOL SW in ISOLATE Pos. 2. Possible loss of BRK indicate lights on RUCB.	1. None 2. Return NORM/ISOL SW to NORMAL, if NORMAL, then notify Electrical Department.		74-2 SS/ISOL 934 SS/ISOL 936	QMD-934 QMD-936

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B 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
6.9KV SWGR 2A1 Δ CURRENT TRIP B-3	1. Indicates 2A1 6.9KV SWGR FUR BRK have opened, from a differential current trip. 2. (A) FUR BRK lights green, (B) No voltage on 6.9KV 2A1 bus. (C) Loss of MFMP, 2A1, 2B2 RCP.	1. De-energization of the 6.9 2A1 bus loss of all running equipment on the bus. 2. (A) If Rx trips, see Rx trip procedure No. 2-0030130 (B) Open all BRK on bus. (C) Notify Electrical Department.	LATER	86/2A1	QAD-904
4KV SWGR 2A2 Δ CURRENT TRIP B-13	1. Indicates FUR BRK to the bus have opened from a differential current trip. 2. (A) FUR BRK lights - green (B) Zero voltage on 2A2 4160V bus, and any other buses being fed from. (C) Loss of "A" Condensate pump, Heater drain pump.	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 Rx Trip Procedure No. 2-0030130 (C) Notify Electrical Department.	LATER	86/2A2	QAD-945
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 system condition by calling Division Dispatcher. (C) Contact Electrical Department (D) Check for possible XPMR problem.	LATER	27x1/2A1 27x1/2A2	QAD-952
VTL NON-SAFETY 120 VAC INVERTS TROUBLE R B-33	LATER	LATER		RA-RAB-4 RA-RAB-33 RA-RAB-34	QAD-1008 QAD-1029 QAD-1805 QAD-1806
120V AC INSTR BUS MA/MA-1/SA INVERTER TROUBLE R B-43	1. Indicates problem with 2MA Inv./Bus: (A) DC voltage high/low (D) Over/under freq (B) AC voltage high (E) Bus undervoltage (C) DC bkr trip (F) Ground fault 2. Possible loss of 1 channel of ESFAS, RPs, NIs, and half RX Trip BRK open.	1. (A) Possible loss of "A" channel ESFAS, RPs, NIs, Rx Trip BRK. (B) If 2 Inst. AC buses are lost; Rx trip will occur. 2. (A) If Rx Trip occurs; refer to Rx Trip Procedure No. 2-0030130. (B) Put Inst bus onto maint bypass XPMR. (C) Notify Electrical Department.	LATER	RA-RAB-16 RA-RAB-28	QAD-1009 QAD-1805
120V AC INSTR BUS MC/MC-1 INVERTER TROUBLE B-53	1. Indicates problem with 2MC Inv./Bus: (A) DC voltage high/low (D) Over/under freq (B) AC voltage high (E) Bus undervoltage (C) DC bkr trip (F) Ground fault 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 Inst AC buses are lost; Rx trip will occur. 2. (A) If Rx Trip occurs; refer to Rx Trip Procedure No. 2-0030130. (B) Put Inst. bus onto Maint bypass XPMR. (C) Notify Electrical Department.	LATER	RA-RAB-1	QAD-1009

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL B VERTICAL COLUMN 4

SYMBOLOGY TITLE	1. INDICATED CONDITION 2. GENERAL ROOM INDICATION WHICH VERIFY OR PENDING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
6.9/4KV 3AR 2A1/2A2/2A3/AB DIFF LOCKOUT RELAYS FAILURE B-4	1. Loss of lockout protection for one or more Elect. buses listed indicates loss of relay IC Out. Per. 2. NRE, unless trip signal is generated for one of the indicated relays, then assoc. BRK will not trip	1. None 2.(A) Contact Electrical Department. (B) Investigate local relay targets (C) Monitor SAR parameters closely to identify a trip condition.	"0" DC VOLTS	BA-BAB-3	OAD-1551
6KV 3AR 2A3 Δ CURRENT TRIP B-14	1. Indicates FIR 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; 10M, 03M, (D) Start-up of 2A D/C	1. 2A3 loads trip, diesel starts up, and loads will re-assert onto diesel. 2.(A) Determine cause for bus trip (B) Notify Electrical Department (C) Ensure essential equipment running	N/A	86/2A3/92A	OAD-201
START - UP XPR 2A 6.9KV/4KV BRK FAILURE B-24	1. Indicates BRK trip signal was sent to bar to open but BRK failed to open 2. Respective BRK lights 6.9KV, 2-30102, 4KV, 2-20601 red or out	1. Protective action to isolate XPR is inoperative or failed 2. Notify System Protection via immediate contact of Division Dispatcher	LATER	74/BKA	OAD-901
STA 322V XPR 2A5 TROUBLE B-34	LATER	LATER	LATER	BA-RAD-25	OAD-1701
4KV 3AR TIES 2A3/2AB OVERLOAD TRIP B-44	1.(A) Indicates 2AB bus overload condition (b) Or, tie breakers are racked out 2.(A) Tie bar lights green (b) Possible loss of 2AB 4160V loads - charging, ECM, 03M (c) Zero voltage on 2AB 4160V bus, possibly 1.(A) Indicates 2A3 to 2AB 4160V BRK fail to close or local NRR4/13M, SM in ISLATE position, (b) Loss of BRK indicator lights.	1.(A) 2B3 - 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		74-1/9B 74-1/940	OAD-938 OAD-940
4KV 3AR TIES 2A3/2AB CLOSE FAIL/ CS ISYL B-54	1.(A) Indicates 2A3 to 2AB 4160V BRK fail to close or local NRR4/13M, SM in ISLATE position, (b) Loss of BRK indicator lights.	1. None 2.(A) Have operator verify NRR4/13M, SM in NORMAL position (B) If in NORMAL, notify Electrical Dept.	NRR4/13M, Switches in "ISL."	74-2 SS/13M/938 74-2 SS/13M/940 2A3-2AB 4160 TIE BRK Cable Spooling Room	OAD-938 OAD-940

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ANNUNCIATOR PANEL 8 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
4KV SWGR 2AB △ CURRENT TRIP B-5	1. 2AB 4160V SWGR bus has isolated on differential current trip 2. (A) Zero volts on 2AB 4160V bus (B) Loss of running "C" equipment (C) Bus tie BRK - green	1. Opening of both sets of the BRK to 2AB 4160V bus 2. (A) Open all BRK on the bus (B) Ensure proper back-up equipment (C) Notify Electrical Department	"0" DC VOLTS	86/2AB	QAD-926
4KV SWGR 2A3 LOAD SHED RLY FAILURE B-15	1. Load shed relay has failed for 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	QAD-969
S/U XPR 2A TIE SWGR 2A4 FOR BRK OVERLOAD TRIP B-25	LATER	LATER	LATER	74	QAD-1280
480V SWGR 2A5 VOLT < 90% (GROUND) B-35	LATER	LATER	LATER	27X1, 64.701 2-3, 271X, 2 5/1836	QAD-1701 QAD-1836
480V SWGR 2A5 LOAD SHED RLY FAILURE B-45	1. Load shed relay has failed for 480V bus 2A5. Indicates loss of relay DC control power. 2. None	1. None 2. Notify Electrical Department	"0" DC Volts	74	QAD-1701
4KV TIE SWGR 2A4 U NO. 2 FEED BUS △ LOCKOUT RELAY FAIL. B-55	1. 2A4 4160V bus lock-out 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	QAD-1283

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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	SPRING ELEMENT NUMBER & LOCATION	REFERENCE
B002G DC 2A BREAKER FAILURE B-6	1. Later 2. D/G output BRK - green light	1. Later 2. Later	LATER	74-1	QAD-953
B002G DC 2A ONE ENGINE START FAILURE B-16	1. Later 2. D/G voltage, frequency and start SW yellow light not lit.	1. Later 2. Check local alarms for fault later	LATER	BRX	QAD-962
B002G DC 2A LOCKOUT/ SS ISOL B-26	1. Diesel lockout mechanism has tripped and locked out or NORM/ISOL SW have been put to the ISOL 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, SURXI SS-ISOL-1,3,IR SS/1606	QAD-1119
B002G DC 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	QAD-1118
B002G 4KV SWR 2A3 VOLT < 90% B-46	LATER	LATER	LATER	2-1 270K 2A3	QAD-1836
B002G DC 2A BREAKER START INHIBIT/ SS ISOL B-56	1.(A) No DC Power on 2AA DC bus available to start diesel. (B) D/G Output 4160V BRK NORM/ISOL SW in ISOLATE (C) D/G Output 4160V BRK is racked out. 2. D/G start and/or BRK control SW 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 NORM/ISOL SW to NORMAL if applicable	Batt BRK Op-1 NORM/ISOL ISOL 4160V BRK Racked out	74-2 SS/ISOL 52/8	QAD-963 QAD-1802

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ANNUNCIATOR PANEL B 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
STA SERV XPMR 2A1 TROUBLE R B-7	1. (A) Sudden casing pressure increase or trip. (B) Winding temperature hlg or HI-High. (C) Pressure relief device actuate. (D) Oil temp high. 2. Loss of XPMR - green bkr lights.	1. Possible station service XPMR trip 2. Check XPMR locally.	(A) Later (B) HI-112°C HI HI-117°C Others LATER	RA-T-7	QMD-986
480V SGR 2A1 FEEDERS OVERLOD TRIP B-17	1. (A) 2A1 SS XPMR 4160V FDR BRK overload trip, racked-out, or fuses blown. (B) OR 2A1 SS XPMR 480V output BRK overload trip, or racked out. 2. XPMR BRK 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 from rackout; investigate cause locally.	LATER	74/945 R/973	QMD-945 QMD-973
480V SGR 2A1 480V MCC 2C UNDERVOLTAGE/ GROUND B-27	1. (A) Ground on 2A1 SS XPMR low side. (B) Ground in loads fed from 2A1 480V bus. (C) Undervoltage condition in SGR (Later). 2. Possible alarms B7, B17. (Later-Possible loss of XPMR?)	1. Later 2. (A) Isolate loads to identify ground. (B) Check 2A1 SS XPMR for ground.	LATER	27 64/986 27/726	QMD-986 QMD-726 726
480V SGR 2A-1/2/5 MCC FEEDS OVERLOD TRIP B-37	1. Overload trip of any MCC FDR BRK on 2A1, A2, or A5 480V buses. 2. Possible indication by loss of MCC equipment which tripped.	1. BRK trip open on overloaded feeder. 2. Investigate cause for feeder bkr overload	LATER	R	QMD-987 QMD-991 QMD-1703 QMD-994
480V SGR 2A2/2A5 FEEDS OVERLOD TRIP B-47	1. (A) 2A2 SS XPMR 4160V FDR BRK has tripped on overload, or BRK racked out, or fuses blown. (B) 2A2 SS XPMR 480V output BRK to 2A2 or 2A5 load centers tripped on overload or racked out. 2. BRK 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	QMD-946 QMD-1702 QMD-977
480V SGR 2A2/2A5 FEEDS CLOSE FAIL/ SS ISOL. B-57	1. (A) Indicates feeders did not close when SW to close position. (B) Loss of DC control power. (C) NORM/ISOL switches in "ISOLATE" position. 2. Loss of bkr indicate lights.	1. Loss of remote breaker control. 2. (A) Investigate cause for alarm locally. (B) Place NORM/ISOL SW into "NORMAL" position	N/A	74-2 SS/ISOL - 946 SS/977 SS/1702	QMD-946 QMD-977 QMD-1702

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ANNUNCIATOR PANEL 8 VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PLAUSIBLE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STA 590V XPMR 2A2 TROUBLE R B-6	1. Trouble or Trip of the 2A2 SS XPMR from: (A) Winding temperature high (B) Sudden pressure high or trip (C) Oil level low (D) Pressure relief device actuate 2. If XPMR trips; loss of running equip. on 2A and 2A5 480V load centers.	1. If XPMR trips - feeder and output bkr will open. 2.(A) Investigate alarm locally (B) If XPMR trips; ensure back-up equip. running (C) Notify Electrical Department	LATER	RA-RAB-19	OMD-990
BLANK B-18					
480V 590V 2A2 VOLTAGE < 90% GROUND B-28	1. Later 2. Later	LATER	LATER	27X1 64	OMD-990
480V 590V BUS TIES 2A2-2AB OVERID TRIP B-38	1. 2A2-2AB 480V bus tie BRK have 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 MCC fed from it.	1. The BRK open on overload. 2.(A) Investigate cause for bkr trip. (B) Notify Electrical Department.	LATER	R/978 R/979	OMD-978 OMD-979
2AB 590V/ 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. None- directly from 2AB, only indications for A or B bus feeding the AB.	1. None 2.(A) Determine cause for undervoltage. (B) Notify elect. dept. if necessary. (C) Check bus ties locally.	LATER	27A/942 27X2/994 27/1008	OMD-994
480V 590V BUS TIE 2A2-2AB SS ISOL 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 bkr control from Control Room. 2.(A) Investigate cause for alarm locally. (B) Return NORM/ISOL switch to "NORMAL" position.	NORM/ISOL Switch to ISOLATE Position	SS/ISOL - 978, 979	OMD-978 OMD-979

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ANNUNCIATOR PANEL E 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	RESPONSE
PZR HTR XPMR 2A TROUBLE R B-9	1. XPMR 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 XPMR will show FUR BRK - green and loss of pressurizer heaters.	1. Later 2.(A) Turn-off PZR heaters P-2, BU-4, 6, & 6 until problem is resolved. (B) Have Operator check XPMR locally. (C) Notify Elect. Dept. if necessary.	A) HI 112°C B) HI HI 117°C Others LATER	RA-RAB-3	OWD-131
PZR HTR XPMR 2A3 4KV FEEDER OVERLOAD TRIP R B-19	1. Overload condition on 2A3 SS XPMR FUR BRK to PZR heater bus. 2. (A) Feeder BRK indication - green (B) Loss of 1/2 pressurizer heaters	1. 2A3 SSXPMR feeder bkr open. 2.(A) Turn-off PZR heaters P-2, BU-4, 5 & 6. until problem is resolved. (B) Notify Elect Dept. and investigate cause for overload.	LATER	74-1	OWD-943
480V SWGR 2A2 / 2AB LOAD SHED RLY FAILURE R B-29	1. Loss of DC control power to 2A2 and/or 2AB 480V bus load shed relays rendering inoperable. 2. None	1. Loss of load shedding ability on 2 B/2A2 480V load centers. 2.(A) Check for blown fuses, or DC power fail (B) Notify Electrical Department.	"0" DC Volts	RA-RAB-2	OWD-1551
480V MCC 2A5/2A6/2A8 NON-ESS SECT LOCKOUT B-39	1. Indicates non-essential section of one or all of the MCCs listed has been isolated, triggered by (later) 2. Loss of any running equipment on the non-essential sections of the buses.	1. Opening of nonessential loads isolation BRK and loss of power to those sections 2.(A) When black-out conditions have cleared, or if diesel gen. can easily handle the added load; close the isolated non-ess. sections ISOL bkr.	LATER	M/1011 M/1012 M/1015	OWD-1011 OWD-1012 OWD-1015
480V SWGR 2AB MCC FUR OVERLOAD TRIP B-49	1. 480V load ctrr BRK 2-40703 feeding 2AB MCC has: (A) Tripped on overload (B) Oc, has been racked out. 2. Loss of running equipment on the 2AB bus.	1. 2AB feeder bkr opens on overload. 2.(A) Identify cause for trip before re-loading through the FUR bkr. (B) Contact Electrical Dept. if necessary.	LATER	R	OWD-995
PZR HTR XPMR 2A3 FUR CLOSE FAIL / SS ISOL B-59	1. Indicates inability to close PZR htr SS XPMR 4160V bkr due to loss of DC control power, or NORM/ISOL SW. in "ISOLATE" position. 2. Loss of XPMR feeder breaker indicate lights	1. Inability to close 2A3 SS XPMR 4160V feeder BRK and/or loss of remote BRK control capability. 2.(A) Investigate cause for alarm locally. (B) Check fuses, DC power supply. (C) If NORM/ISOL switch in "ISOLATE" return to "NORMAL" if applicable.	"0" Volts Switch to "ISOL" pos.	74-2 SS/ISOL	OWD-943

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ANNUNCIATOR PANEL, B VERTICAL COLUMN 10

SYMPTOM 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
125V DC BUS 2A/2AA GROUND	1. Positive or negative ground on 2A - 2AA 125V DC bus, or equipment fed from bus. 2. (A) Observe if alarm came in concurrent with the change in status of any plant equipment, which could be fed from bus. (B) Check DC bus electrical parameters.	1. If ground is severe in running equipment, it's DC bus could trip from overload. 2. (A) If possible, Stop/de-energize strongly suspected equipment which was started/energized concurrent with annunciator receipt. (B) Roll out DC ground insulation off-normal. Procedure P2-096030.	LATER	64P 64N GAR, GAR2AA	QAD-1001 QAD-1801
125V DC BUS 2A/2AA BATT CHGR 2A/2AA TROUBLE	1. Battery charger 2A or 2AA trouble or trip: (A) HI or low voltage (B) Control power off (C) HI voltage shutdown (E) No charge alarm (C) Loss of AC power 2. Check 2A-2AA DC bus voltage and charge/discharge amperage.	1. HI-voltage will shutdown the batt. Charger 2. (A) Investigate cause for alarm locally. (B) If HI-voltage shutdown; try to reset HPSD 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 aided by use of 2AB charger through the 2AB-2A bus tie. (E) Notify Electrical Department.	LATER	RA-RAB-11 RA-RAB-26	QAD-1011 QAD-1801
125V DC BUS 2A UNDERVOLTAGE	1. 125V 2A-2AA buses voltage has decayed to <u>later V.</u> 2. Check the 2A-2AA DC bus voltmeter, and charge/discharge ammeter.	1. None 2. (A) Check for charger trip. (B) Re-start charger if possible	LATER	27	QAD-1001
AVIATION LIGHT FLARE FAILURE				27	QAD-1194
125V DC BATT 2A DISCH HI/ BKR OPEN	1. (A) High rate of discharge amperage from 2A batt. (B) OK, indicates 2A batt. output BKR to 2A DC bus has been switched to the test load. 2. (A) Batt. Charge/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 Amper Battery Bkr	52/B 74 Battery output breaker	QAD-1801
BATT 125V DC 45V-48V AB BUSES MISWired					QAD-

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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 Δ CURRENT TRIP G-1	1.(A) Primary lockout has been actuated by a difference in generator current trip. (F) Gen. lock-out trips turbine. 2.(A) Turbine trip - valves closed, possible Rx trip if >15% PWR. (F) Target drops on Gen Diff current trip relay and lock-out actuates behind RTCP-201.	1.(A) Lockout actions. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (F) Notify Electrical and System Protection Departments.	Trip Relays Actuate	74 GD 87C/887 Relays (3) Behind RTCP-201	GD-883
GEN - XPR Δ CURRENT TRIP G-11	1.(A) Back-up lockout has been actuated by diff. current on lines between main. (F) Gen. lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (F) Target drops on Gen. XPR diff. current relay and lockout actuates behind RTCP-201.	1.(A) Lockout actions. (F) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (F) Notify Electrical and System Protection Departments.	Trip Relays Actuate	74 GF 87C/879 Relays (3) Behind RTCP-201	GD-885
GEN HN XPR 240KV FIP Δ CURRENT TRIP G-21	1.(A) Primary lockout has been actuated by a difference in current on HI-lines between main XPR and SWYD (F) Gen. lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR (F) Primary lockout actuates behind RTCP-201	1.(A) Lock out actions (F) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (F) Notify System Protection Department (C) Check SWYD relay panel - 13.	Trip Relays Actuate	74 TTX Prot. relays in SWYD house relay panel #13	GD-883
GENERATOR LOCKOUT RELAY/ TRIP CIRCUIT FAILURE R G-31	1. Loss of DC control power to: (A) Primary lock-out relay (F) Back-up lock-out relay (C) Under-frequency lock-out relay 2. See reflash module to pinpoint troubled relay. (later-location)	1. No auto action 2.(A) Notify System Protection Dept. via contact with Division Dispatcher. (F) Trip unit annually if a valid gen. trip condition develops.	"0" DC Volts	(74/94-1)* (7494-2)* RA-RAP-18 RTCP-201 Rear *From gen. prot. rlys	GD-882
GENERATOR ISOL HS HS COOLER TROUBLE R G-41	1. Trouble with 2A or 2B ISO-PHASE coolers: (A) Loss of power, or not running (F) Clogged air filter (C) Differential pressure SW. 2. Reflash module (later-location)	1. Standby cooler starts if running cooler is lost. 2.(A) Determine cause for alarm locally. (F) Return stopped cooler to service. (C) If no bus cooling is available; remove turbine generator from service.	LATER	RA-RAP-18 LATER	GD-866
GENERATOR ISOL HS HS TEMP HI C-51	1. High temperature in Isophase hot air return duct. 2. Other Isophase related alarms.	1. None 2.(A) Have operator put standby cooler in serv. (F) Determine cause for insufficient cooling.	167°F (75°C) Hot return Air temp	Vendor Temp. Switch On top of common hot air return duct. Turbine Mezzanine	GD-865

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ANNUNCIATOR PANEL C VERTICAL ORDER 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION ACTION VERIFY OF PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETTING	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR GROUND TRIP C-2	1. Turbine has tripped on generator ground. 2.(A) Megawatt indications read "ZERO". (P) Turbine valves closed. (C) Rx trip if IPR >15%. (D) Target drop on ground trip relay behind RTGB-201	1. Turbine trip/possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (B) Notify Elect. Dept. and System Protection Dept.	Trip Relay Actuate	74X/883 74X/885 ----- (Relay RTGB-201 Rear)	OWD-883 OWD-885
GENERATOR NEG SEQ/ OUT OF STEP TRIP C-12	1. Turbine has tripped due to imbalance in generator phases due to system grid fault. 2.(A) Megawatt indications read "ZERO" (B) Turbine valves closed. (C) Rx trip if >15% power. (D) Target drop on gen. neg. seq. rly (RTGB-201 rear) (E) Possible high generator temperature.	1. Turbine trip/possible Rx trip 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (B) Notify Elect. Dept. and System Protection Department.	Trip Relay Actuate	74B 74-1/06 ----- (Relay RTGB-201 Rear)	OWD-883
GENERATOR NEGATIVE SEQUENCE C-22	1. Indicates imbalance exists between generator phases due to system fault. 2.(A) Difference in phase current readings. (P) Possible H generator temperature. (TO BE REVISED LATER)	1. If condition worsens, could cause turbine 2.(A) Consult main generator Off-Normal Procedure #2- (Later) . (P) If trip occurs, see Rx trip Off-Normal Procedure No. 2-0030130.	LATER	46 46A ----- LATER	OWD-883
GENERATOR PT FAILURE C-32	1. Generator potential instrumentation step-down XPR has blown fuse. (B/V lock-out) (Also soon revise info) 2.(A) Loss of generator parameter indications. (P) Target drop on PT failure relay behind RTGB-201.	1.(A) Voltage Regulator shifts to manual (B) DEH control shifts to manual (C) Loss of trip protection. 2.(A) Take actions necessary to stabilize (P) Monitor turb./gen trip parameters closely for trip condition. (C) Notify System Prot. & Elect. Depts.	LATER	60YA/885 60/880 ----- PT failure relay 60-881 behind RTGB-201	OWD-885 OWD-881
GEN FIELD GND DET/ BRUSH 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	OWD-872
GENERATOR ISOL. HIS HIS 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 re-position to purge system. 2.(A) Check Gen. gas press., for rate of decr. (P) 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 mazz.	OWD-865

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ANNUNCIATOR PANEL C VERTICAL COLUMN 3

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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
GENERATOR TURBINE TRIP C-3	1. Turbine has been tripped by a generator primary or back-up lockout. 2.(A) Turbine trip - values closed. (P) Rx trip if >15% power. (C) Lock-out relay(s) actuate behind RTCP-201.	1.(A) Prim. and/or back-up lockout trips Turb. (P) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 2.(P) Determine cause for lockout. (C) Notify Elect. or Sys. Protection Dept.	Lock-out(s) Actuations	74T ----- Gen-Turbine Trip Relay RTCP-201 Rear	QWD-883
GEN EXCITN SUPPLY BRK TRIP C-13	1.(A) Field BRK opening while synchronized causes primary lock-out actuation. (P) Lock-out trips turbine. 2.(A) Turbine trip-values closed, Rx trip if >15% BRK. (P) No excitation on machine. (C) Primary lockout actuates behind RTCP-201.	1.(A) Loss of generator excitation. (P) Lock-out relay actions. (C) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 (b) Determine cause for BRK trip. Notify Electrical Department if necessary.	Breaker Contracts	41CS/877/875 41Axl/877 ----- Excitation SWGR Turbine mezz.	QWD-875 QWD-877
GEN V/Hz HI TRIP C-23	(Later - Info Update)	LATER	LATER	59-1 59-2 74OE ----- Gen. protection Relay cabinet	QWD-872
GEN V/Hz HI LIMIT C-33	(Later - Info Update)	LATER	LATER	V/Hz ----- Excitation SWGR Turbine mezz.	QWD-872
GENERATOR VOLT REG SENSING LOST C-43	1. Voltage Reg. input from Gen. voltage has been lost probably due to Gen. P-T fuse failure. 2.(A) Voltage Regulator trips to MANUAL (P) Other Voltage Regulator/P-T fuse alarm.	1.(A) Voltage regulator trips to "manual". 2.(A) Take voltage regulator to "OFF". (P) Control voltage with BASE adjust. (C) Notify electrical dept.	LATER	Loss of sensing KV ----- Excitation SWGR Turbine Mezzanine	QWD-875
EXCITER COOLER AIR TEMP HI C-53	1. Exciter Air Cooling insufficient: (A) High cooler exdt cold air temp. (P) High cooler inlet hot air temp. 2. Exciter Air Temp. on TR-22-30 Gen. temp recorder points 17 thru 20.	1. None 2. Increase flow (or lower temperature) of water to coolers.	45°C Cold Air ----- 105°C	TR-22-30 Points 17 thru 20 ----- RTCP-201 Recorder	QWD-890

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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
GENERATOR FIELD FAIL TRIP C-4	1. Loss of field back-up Gen. lockout has tripped Turb 2.(A) Gen. back-up lockout actuation behind (P) MW load indicates "ZERO" (C) Turbine trip valves closed.	1.(A) Generator lock-out. (P) Turbine trip, possible Rx trip. 2.(A) Follow Re-trip Off-Norm. Proc. 2-0030130 (P) Notify Electrical Department.	LATER	74CF Back-up Lock-out Relay RX2-201 Rear	QWD-685
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 regulator trips to "MANUAL". 2.(A) Turn Volt Reg switch to OFF. (P) Control voltage Man. using BASE adjust (C) Notify Elect. Dept. to investigate	LATER	96RB Excitation S4CR Turbine nozz. K3(ORP-2)	QWD-875
GENERATOR OVEREXCIT C-24	(Later - much better info to follow)	LATER	LATER	Excitation S4CR Turbine nozz.	QWD-872
EXCITATION FIRING Ckt No. 1 TROUBLE C-34	1.(A) Loss of IC from #1 Firing Ckt. (P) Or, loss of input to #1 firing ckt. from IMC. (C) Or, loss of pulses which fire the diodes. 2. None NOTE: Loss of 1 firing Ckt does not cause a loss of generator field.	1. If BOTH ccts are lost, Turbine Trip will occur. 2. Notify Elect. Dept. to investigate failure.	LATER	#1 Ckt. Drawer Excitation S4CR Turbine nozz.	QWD-872
EXCITATION FIRING Ckt No. 2 TROUBLE C-44	1.(A) Loss of IC from #1 Firing ckt. (P) Or, loss of input to #1 firing ckt. from IMC. (C) Or, loss of pulses which fire the diodes. 2. None NOTE: Loss of 1 firing ckt. does not cause a loss of generator field.	1. If BOTH ccts are lost, turbine trip will occur. 2. Notify Elect. Dept. to investigate failure.	LATER	#2 Ckt. Drawer Excitation S4CR Turbine nozz.	QWD-872
GENERATOR VOLT REG FORCING C-54	1. Indicates excessive field current. 2.(A) Exciter Ammeter on RX2B. (P) Voltage regulator output scale.	1. None 2. Reduce reactive load as necessary to reduce field current.	LATER	Forcing Alarm K-4 Excitation S4CR Turbine Nozzle	QWD-875

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR NAME: C 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
GENERATOR DISTANCE P/U TRIP	1.(A) Gen. lock-out has been tripped by the back-up distance fault relay. (Persistent distant fault primary SWD trip OCF failure to clear fault) (B) Gen. lockout trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% PWR. (C) Respective faulted lines OCB's - Open. (C) Lockout actuated behind RTCB-201.	1.(A) Gen. lock-out, turbine trip, possible Rx trip. (B) Multiple SWD 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. Back-up Rly 62-21/882 RTCB-201 Rear	QMD-882
GENERATOR OCB FAIL/ P/U TRIP	1.(A) Gen. lock-out 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% PWR (C) Backup lockout actuates behind RTCB-201.	1.(A) Gen. lock-out, turbine trip, possible Rx trip. (B) Multiple SWD OCB's open to clear fault 2.(A) Follow Rx trip Off-Norm. Proc. 2-0030130 (C) Notify System Protection Dept.	Relay Trip	74LE ----- (later) SWD Ocb1 House	QMD-885
GEN BRK B449 TRIP	1. Gen. OCB B449 (E) has tripped open. (Anytime BRK is opened). 2. E OCB indicate lights - green.	1. OCB B449 opens. 2. If Gen. still on line: (A) Notify Div. Dispatcher - try to reclose (F) If unable to close-report BRK to Sys. Protection Department	BRK Contacts	52.83/SE ----- (later)	QMD-886
GEN BRK B452 TRIP	1. Gen. OCB B452 (B) has tripped open. (Anytime BRK is opened) 2. B OCB indicate lights - green.	1. OCB B452 opens. 2. If Gen. still on line: (A) Notify Div. Dispatcher - try to reclose (F) If unable to close-report BRK to System Protection Department.	BRK Contacts	52.83/B ----- (later)	QMD-886
GEN BRKS B449 / B452 AIR PRESS LO	1. Low operating air press. on OCE 3E or 3H; possible low compressor start setpoint or compressor BRK trip	1. BRK air Comp. starts on Lo-Press of 250-260 PSIG. 2. If alarm has not cleared in 10 mins; (A) Have operator check comp. brk locally (B) If alarm persists call Div. Dispatcher	235 PSIG	63-3E/1107 63-3H/1107 ----- later Ref flash Location?	QMD-886
EXCITATION PUMP CLC FAILURE	1. Failure in ventilation equip. for voltage Reg./ excitation cabinets. (A) Cool fans R1/R2 not running. (B) Or, main 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 Dumper(s) Closed	RA-T-1 Reflash Module ----- Column East of Excitation SWGR Turbine maze/line	QMD-875

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C MEDICAL GROUP 6

WINDOW TITLE	1. INDICATED CONDITION 2. CLARIFY THE INDICATION WHICH TRIGGER OR PURPOSE TRIGGER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT INSTRUMENT & LOCATION	REFERENCE
MS 8946 2A CURRENT TRIP	1. (A) Primary lockout has been actuated from 2A Main 8946 current differential. (P) Lock-out trips turbine. 2. (A) Turbine trip-valves closed, R ₂ trip if >152 MW. (P) Target drop on Main 8946 diff. current relay and lockout actuated behind RTCP-201.	1. (A) Lock-out actions (P) Turbine trip, possible R ₂ trip. 2. (A) Follow R ₂ trip Off-Alarm. Proc. 2-0030130 (P) Consult Main 8946 O-R Proc. 2-0910031 2-0510031.	Diff. Relays Trip	747A 87DA/87B RELAYS (3) Isolated RTCP 201	QAD-686
MS 8946 2A FAULT PRESS TRIP	1. (A) Prima. Lockout has been actuated from high rate of press. Increase in 2A main 8946. (Indication external fault) (P) Lock-out trips turbine. 2. (A) Turbine trip-valves closed, R ₂ trip if >152 MW (P) Fault press. relay blinking, lockout actuated, both behind RTCP-201.	1. (A) Lock-out actions (P) Turbine trip, possible R ₂ trip. 2. (A) Follow R ₂ trip Off-Alarm. Proc. 2-0030130 (P) Consult Main 8946 O-R Proc. 2-0910031.	90-150 psi hg Pressure Increase	747A 63X1/63A RELAY Isolated RTCP 201	QAD-686
MS 8946 2A GND CURRENT TRIP	1. (A) Back-up lockout has been actuated from Ground on 2A side 8946. (P) Lock-out trips the turbine. 2. (A) Turbine trip-valves closed, R ₂ trip if >152 MW. (P) Target drop on Main 8946 ground relay and lockout actuated behind RTCP-201.	1. (A) Lock-out actions (P) Turbine trip, possible R ₂ trip. 2. (A) Follow R ₂ trip Off-Alarm. Proc. 2-0030130 (P) Consult Main 8946 O-R Proc. 2-0910031.	Ground Relay Trip	747A 51TWA/51W RELAY Isolated RTCP 201	QAD-685
MS 8946 2A ALARM PANEL	1. Local 8946 panel in alarm, indicating abnormal condition with 8946. (later) 2. Name	1. Name 2. (A) Have operator check alarm panel at 8946. (B) Refer to Main 8946 O-R Proc. 2-0910031.	LATER	74X1, 74X2 74X3 2A Main 8946 Control Cabinet 74X4	QAD-663 663
MS 8946 2A ALARM PANEL H2357 CHIMNEY	1. Local 8946 panel in alarm, with a more serious alarm: (A) Loss of 480V power to cooling fans. (P) Or, loss of 125 VAC to alarm panel. 2. Name	1. Name 2. (A) Have operator check 8946 panel locally (P) Notify Electrical Department	LATER	74X4 UCX 2A Main 8946 Control cabinet TR-22-30	QAD-663
MS 8946 MIDRIMIS TRIP H1	1. High temp. on 2A and/or 2B main 8946 low side wind. 2. (A) Temp. recorder TR-22-30, points 13, 14. (P) H1 reactive load on generator. (P) H1 reactive load on generator. (C) H1 current output on generator.	1. Name 2. (A) Verify alarm (P) Verify all fans & cooling pump running (C) Start reducing reactive load, then H1 load until all alarm clears.	115°C	Points 13, 14 RTCP-201 Recorder	QAD-660

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-00303131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C WESTERN DESIGN 7

UNIQUE TITLE	1. INDICATED CONDITION 2. ORIGINAL RUN INDICATION WHEN VERIFY OR PENDING TRIP/RE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MS 2048 2P Δ CURRENT TRIP	1. (A) Primary lockout has been actuated from 2P Main 2048 current differential. (B) Lock-out trips turbine. 2. (A) Turbine trip-valves closed, Rr trip if >15% PAR. (F) Turbine drop on Main 2048 diff, current relay and lockout actuated behind RTCB-201.	1. (A) Lock-out actions. (B) Turbine trip, possible Rr trip. 2. (A) Follow Rr trip Off-Normal Proc. 2-00303130 (C) Consult Main 2048 O-N Proc. 2-09100301. (C) Notify Division Dispatcher.	DIFF Relays Trip	747B 2A 2048 DIFF. Relays (3) 87TA/87B Behind RTCB 201	QAD-886
MS 2048 2P FAULT PRESS TRIP	1. (A) Primary lockout has been actuated from high rate of pressure increase in 2A main 2048. (Indicates internal fault). (F) Lock-out trips turbine 2. (A) Turbine trip-valves closed, Rr trip if >15% PAR (F) Fault press., relay blinding, lockout actuated both behind RTCB-201.	1. (A) Lock-out actions. (B) Turbine trip, possible Rr trip. 2. (A) Follow Rr trip Off-Normal Procedure No. 2-00303130. (F) Consult Main 2048 Off-Normal Procedure No. 2-09100301.	90-150 ms hg sudden pressure increase	747T-2 2B Fault Press Relay-6302 Behind RTCB 201	QAD-284
MS 2048 2P O/N CURRENT TRIP	1. (A) Pack-up lockout has been actuated from 2B Main 2048 ground. (F) Lock-out trips the turbine. 2. (A) Turbine valves closed, Rr trip if >15% PAR. (F) Turbine drop on 2P main 2048 ground relay and lock-out actuation behind RTCB-201.	1. (A) Lock-out actions. (B) Turbine trip, possible Rr trip. 2. (A) Follow Rr trip Off-Normal Procedure 2-00303130. (B) Consult main 2048 Off-Normal Procedure 2-09100301.	Ground Current Relay Trip	747NB Main 2048 2B Ground Relay 51TMB Behind RTCB 201	QAD-885
MS 2048 2P ALARM PANEL	1. Local 2048 control panel in alarm from: (A) Low on cooler (1 2 3 4 or 5) (D) Hot Spot (B) Oil - Lo level (2) (C) Pressure relief actuate 2. None	1. None 2. (A) Have Operator check alarm panel at 2048 (B) Refer to Main 2048 Off-Normal Procedure No. 2-09100301.	(A) (B) (C) (D) (E) (F)	74X1, 74X2 74X3 2P Main 2048 Control cabinet	QAD-864
MS 2048 2P ALARM PANEL PNEUMATIC	1. Local 2048 panel in alarm with a problem of higher severity than (C-37). (A) Loss of 480 VAC power to cooling fans. (F) Or, loss of 125 VAC to alarm panel. 2. None	1. None 2. (A) Have Operator check 2048 panel and PAR supply BBE locally. (B) Follow Main 2048 O/N Procedure 2-09100301 (C) Notify Elect. Dept. & Div. Dispatcher.	LATER	74X4, BEX 2A Main 2048 Control cabinet	QAD-864
MS FIRE DETECTOR LITIAL ALARM	(LATER) More Info Needed	(LATER) More Info Needed	LATER	RA-T-2 LATER	QAD-859

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C WETTERAL CUBICLE 8

WETTERAL TITLE	1. INDICATED CONDITION 2. CIRCULAR BELL INDICATION WHICH MESSAGE OF PERMANENT MESSAGE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
AUX 8098 2A Δ CURRENT TRIP C-8	1. (A) Primary lockout has been actuated from 2A Aux 8098 current differential. (B) Lock-out trips the turbine. 2. (A) Turbine trip-valves closed, Rx trip if >152 PAR (F) Lockout actuated behind RTCB-201.	1. (A) Lock-out action. (B) Turbine trip, possible Rx trip. 2. (A) Follow Rx trip Off-Normal Procedure No. 2-0030131. (F) Consult Aux 8098 O/N Proc. No. 2-0910032. (C) Notify System Protection Department	LATER	DIFF current relays on 2A2 416W bus bar panel 152-2A2-1	040-883
AUX 8098 2A FAULT PRESS TRIP C-18	1. (A) Back-up lockout has been actuated from high rate of pressure increase in 2A and in 8098. (Indicates internal fault). (F) Lock-out trips turbine. 2. (A) Turbine trip-valves closed, Rx trip if >152 PAR (F) Fault press. relay blocking, lockout actuated, both behind RTCB-201.	1. (A) Lock-out action. (B) Turbine trip, possible Rx trip. 2. (A) Follow Rx trip Off-Normal Proc #2-0030131 (F) Consult Aux 8098 O/N Procedure 2-0910032 (C) Notify System Protection Department	90-150 mm hg sudden pressure increase	6303 fault press Relay behind RTCB 201	040-886
AUX 8098 2A 4KV (GROUND) C-28	1. Ground exist on 2A Aux 8098 4KV low side windings 2. None	1. None - alarm only. 2. (A) Follow Aux 8098 Off-Normal Procedure No. 2-0910032. (F) Notify System Protection Dept.	LATER	64/ATA-2 Ground relay on 2A2 416W bus bar panel 152-2A2-1	040-910
AUX 8098 2A 6.9KV (GROUND) C-38	1. Ground exist on 2A Aux 8098 6.9KV low side windings 2. None	1. None - alarm only. 2. (A) Follow Aux 8098 Off-Normal Procedure 2-0910032. (F) Notify System Protection Dept.	LATER	66-ATA-1 GROUND RELAY ON 2A2 416W bus bar panel 152-2A2-1	040-910
AUX 8098 2A ALARM PANEL C-48	1. 2A Aux 8098 panel in alarm from: (A) Oil-to level/HI temp/Low flow (B) Over-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 8098 Off-Normal Procedure 2-0910032. (C) Notify Division Dispatcher if necessary	(A) (B) (C) (D)	74X-1, X2, X3, X4 DCX, 6W Alarm relays in Aux 8098 Control cabinet	040-909
TRANSFORMER FIDE C-58	(LATER - Info check)	(LATER - Info check)	LATER	(E-1, E-2, E-3) (LATER)	040-859

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PAGE C MECHANICAL CHART 9

WARNING TITLE	1. INDICATED CONDITION 2. GENERAL RUN INDICATION WHEN VERIFY OR PINPOINT TRUPE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SECTION	SERIES ELEMENT NUMBER & LOCATION	REFERENCE
AUX 204R PWR FAILURE/ FAU TRIP C-9	1. (A) (later - cause) (Actuates RU lock-out) (P) Lock-out trips turbine. 2. (A) Turbine trip-values closed, Rx trip if >15% PWR. (P) LATER and Lockout actuates behind RTB-201.	1. (A) Lock-out actions (B) Turbine trip, possible Rx trip. 2. Follow Rx trip Off-Normal Proc. #2-0030131. (A) Notify Div. Dispatcher & Sys. Prot. Dept. (B) Consult Aux. 204R Q/N Proc. 2-0910032.	LATER	744F LATER	QAD-885
GENERATOR MUTUING TRIP C-19	(LATER)	(LATER)	<15 PSID HP Turbine and 2/3 EH TRIP HH 203 ^F F or (P) Field POC closed >1min	744F/885 - (later) HVE-22-43/885 (P) 41AX3/883/885 EH TR-3/710/885 HID (Later) Turbine - Ex. 540R	QAD-885 813, 885 710 HID (Later)
GENERATOR MUTUING C-29	(LATER)	(LATER)	LATER	744P LATER	QAD-885
GENERATOR UNDERVOLT 5/ HZ TRIP C-39	(LATER)	(LATER)	LATER	804F LATER	QAD-882
GENERATOR MUTUING EXCITEMENT OFF/TRIPABLE C-49	(LATER) (CS-888 SA)	(LATER)	LATER	CH, Q4-888 LATER	QAD-888
GENERATOR 59.5 HZ UNDERVOLT C-59	1. Generator frequency has lowered to 59.5 Hertz with the generator breakers closed. 2. (A) Frequency meter (P) Frequency recorder NOTE: Alarm is generated from recorder.	1. This is an alarm only; but if freq. decays to (later) an IF-Lockout will occur. 2. Prepare for possible separation from the grid.	Frequency Recorder 59.5 HZ with Gen. bars closed	F-REC/861 52 123/885 Recorder RTLB-201	QAD-882 QAD-885

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
AUX XPMR 2P Δ CURRENT TRIP C-10	1.(A) Primary lockout has been actuated from 2P Aux XPMR current differential. (F) Lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% IWR. (F) Lockout actuates behind RTCP-201.	1.(A) Lock-out actions. (B) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (E) Consult Aux XPMR O/N Procedure 2-0910032. (C) Notify System Protection Department	(later)	74 ATB ----- Diff current rlys on 2P2 4160V bus bkr panel 152-2B2-1	G4D-883
AUX XPMR 2B FAULT PRESS TRIP C-20	1.(A) Back-up lockout has been actuated from high rate of pressure increase in 2B Aux XPMR. (Indicates internal fault) (F) Lock-out trips turbine. 2.(A) Turbine trip-valves closed, Rx trip if >15% IWR. (E) Fault press. relay blinking, lockout actuated.	1.(A) Lock-out actions. (F) Turbine trip, possible Rx trip. 2.(A) Follow Rx trip Off-Normal Procedure No. 2-0030130. (E) Consult Aux XPMR O/N Procedure 2-0910032 (C) Notify System Protection Dept.	90-150 mm hg sudden pressure increase	74 FT-4 ----- 63X6 Fault Press Relay, behind RTCP-201	G4D-884
AUX XPMR 2B 4KV GROUND C-30	1. Ground exist on 2P Aux XPMR 4KV low side windings 2. None	1. None- alarm only. 2.(A) Follow Aux XPMR Off-Normal Procedure 2-0910032. (B) Notify System Protection Department	(later)	64/ART-2 ----- Ground relay on 2A2 bus bkr panel 152-2B2-1	G4D-911
AUX XPMR 2B 6.9KV GROUND C-40	1. Ground exist on 2P Aux XPMR 6.9KV low side windings 2. None	1. None-alarm only 2.(A) Follow Aux XPMR Off-Normal Procedure No. 2-0910032. (F) Notify System Protection Dept.	(later)	64/ART-1 ----- Ground relay on 2A2 4160V bus bkr panel 152-2B2-1	G4D-911
AUX XPMR 2B ALARM PANEL C-50	1. 2A Aux XPMR panel in alarm from: (A) Oil - lo level / Ht temp / lo flow (F) Overpressure relief actuate (C) Gas detector (D) Hot spot temp Ht 2. None	1. None- alarm only 2.(A) Have operator check panel locally. (F) Consult Aux XPMR Off-Normal Procedure 2-0910032. (C) Notify Division Dispatcher if necessary	(A) (B) Later (C) (D)	74X1, X2, X3, X4 ICX, 63V ----- Alarm relays in Aux XPMR Control Cabinet	G4D-919
AUX / START-UP XPMR WINDING TEMP HI C-60	1. High winding temp. exists on 2A, 2B Aux XPMRs, or 2A, 2B S/A XPMRs. 2. Temperature recorder TR-22-30 - RTCP-201 Points 1-8	1. None 2.(A) Check XPMR cooling locally. (B) Reduce loads on XPMR within plant. (C) Notify Division Dispatcher if necessary	100° C Winding Temp	TR-22-30 Points 1-8 ----- Temp. Recorder RTCP-201	G4D-886

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D 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
SG 2A/2P LEVEL HI-HI/ TURBINE/FW PP 2A/2P TRIP	1. HI-HI S/G level either S/G has: (A) Tripped the turbine (B) Closed the 100% FW bypass MVMs (C) Tripped off 2A & 2P main feed pumps 2. (A) Steam Gen. level indicators. (F) Turbine trip, Rx trip if >15% power. (C) Main feed pumps trip indications.	1. (A) Turbine trip, possible Rx trip. (F) Main FW pumps 2A-2B trip (C) Both 100% FW bypass MVMs close. (D) Turbine trip closes main feed reg. and opens 15% feed reg to 5% flow. 2. (A) If still on-line; restart HWP when S/G level decreases to <90%. (F) If Rx trips; follow Rx trip Off-Normal Procedure No. 2-0030130.	90% level (2/4 same 5/6)	74L/in RTCB 201 LIC-9013 A, B, C, D LIC-9023 A, F, C, D on RTCB-202	Q40-709 Q40-711 PSID 2998-079 Sheet 1 of 2
TURB LUBE OIL RSVR VIB EXTR OFF	1. Lube oil resv. vapor extractor motor has: (A) Tripped on overload (B) Fused fuse in start circuit (C) Bkr opened at MCC-2P1 (D) Or, Control switch to stop. 2. Extractor breaker indicate lights - green or out	1. None 2. (A) Restart extractor if possible. (F) Out in air jet vapor extractor to ventilate reservoir. (C) Notify Electrical Department	O.C. Trip 68 Amps CS to "STOP"	42 Trip Coil 2-41628/MCC-2B1	Q40 735 PD & MD 2998-B-335 Sheet #24
TURBINE LUBE OIL CONDNR FILTER LVL HI/LO	1. Turb. lube oil conditioner High or Low level, or conditioner filter bags have been detected as dirty 2. None	1. (A) HIGH - shuts solenoid valve (F) LOS - 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)	IS-17-4 IS-17-5 IS-17-11 ----- level switches on lube oil conditioner tank	Q40 734
TURBINE PRC LIFT OIL PP OMD TRIP	1. Turbine PRC lift oil PP motor has: (A) Tripped on overload (F) Fused fuse in start circuit (C) Breaker manually opened at MCC-2P1 2. (A) Pump Bkr indicating light - green or out (F) Turning gear engaged light - goes out.	1. (A) Lift pump stops (F) If no oil lift press.; turning gear stops 2. (A) Attempt to reset/restart lift pump motor (F) Notify Electrical Department.	O.C. trip 180 Amps	74 ----- Trip Coil Bkr 2-41623/MCC-2P1	Q40 732 ----- PD & MD 2998-B-335 Sheet #23
TURBINE TURNING GEAR MTR OVPID/ TRIP STOPPED	1. Turning gear/turbine not rotating as indicated by: (A) Tripped on overload (F) Fused fuse in start circuit (C) Breaker manually opened at MCC-2C (D) Control switch placed in "OFF" (E) Or, turbine shaft has stopped rotating 2. Turning gear indications	1. If turning gear trips, turbine rotation will start 2. (A) Attempt to reset/restart/re-engage 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 ----- ZSI (later)	74 14/ZSX (Zsind Pt Later) ----- Trip Coil Prkr 2-42510/MCC-2C	Q40 730 ----- PSID later ----- PD & MD 2998-B-335 Sheet #26
SEAL OIL P/U PP OMD TRIP	1. (A) Seal oil back-up pump has tripped on motor overload. (F) Or, pump motor bkr has been (later) 2. (A) Hydrogen system alarm panel annunciator if back-up pump running (check this is trip-later)	1. (A) (later) 2. (F) (later)	Thermal Overload or 290 Amp O.C. Trip	74 ----- Trip Coil Bkr 2-41628/MCC-2E1	Q40 727 ----- PD & MD 2998-B-335 Sheet #24

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ASSOCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL ORIGIN 2

WINDUP TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PROVISE TRIP/ALARM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TRIP/ALARM OIL PRESS LO TRIP	D-2 1. Turbine bearing oil header pressure low. 2. Turbine bearing oil header pressure gauge indicates < (later) PSIG.	1. (A) (later) pump starts (B) Turbine trip, possible Rx trip. 2. (A) Follow Rx trip Off-Ram Proc #2-0030130 (F) Start or restart AC bearing oil pump 1. If pressure continues to decrease, turbine 2. (A) Start/restart AC bearing oil pump (F) If pressure continues to decline, prepare for unit trip.	5-7 PSIG decreasing 6-8 PSIG decreasing	74/80 63/80	QAD-711 QAD-711
TRIP/ALARM OIL PRESS HI	D-12 1. Turbine bearing return line oil high temperature. 2. (A) Turbine temp. recorder; bearing and oil return temperatures.	1. None 2. (later - turbine start up Proc Ref)		TS-22-5 Temperature Ind. Switch	QAD-795
TRIP/ALARM OIL PRESS HI OIL PRESS HI OIL PRESS HI	D-22 1. Turbine AC bearing oil pump low: (A) Tripped on overload (F) Or, pump Bx has been opened at HCU-2C 2. (A) Pump indicating lights - out or green. (F) Decreasing bearing oil pressure (C) Energy bearing oil pump running 1. Alarm is in anytime AC bearing oil pump running (A) Auto starts on low pressure of later (F) GS start will also give alarm. 2. (A) AC bearing oil pump indicate light - red. (F) Turbine bearing oil header pressure low.	1. Emergency IC oil pump will start on press. decays. 2. (A) Start Energy. IC oil pump if not already running. (F) Ensure adequate oil supply to bearings or trip turbine 1. None 2. If auto-start on low pressure: (A) Ensure adequate supply/pressure of oil to bearings. (F) Determine cause for auto-start.	Therm Oxid or 950 Amp O.C. Trip	74 Over-current trip in Brkr 2-42906/HCU-2C	QAD 726 PD & 90 Shit #26
TRIP/ALARM OIL PRESS HI OIL PRESS HI OIL PRESS HI	D-42 1. (A) Energy IC B. O. pump has tripped on over-load (B) Or, IC meter control power is lost. 2. (A) Energy IC oil HCU 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 69 Thermal overload in brkr 2-40609/125 VIC - 2C	QAD-728 PD & 90 Sh 66C

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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 mech trip (B) Possible Rx trip 2.(A) Follow Rx trip Off-Norm Proc #2-0030131 (B) Consult loss of vacuum O/N Pro. 2-0610031	18-22" H decreasing vacuum	74LV Vacuum Trip Device Turbine front Standard	G4D-711 P&ID (later)
TURBINE VACUUM LO D-13	1. Indicates low condenser vacuum exist in main Cond. 2.(A) Condenser vacuum-lo/backpressure-HI (B) Gland seal steam indications (C) SWE 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 decreasing vacuum	63/LV (later) ----- (later)	G4D-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 +3 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, repos. if applicable for present vacuum. (B) Notify I & C Dept. if necessary	Trip in latch posi- tion w/ <19" hg vacuum (OSP Trip) (LATER)	33/RO 33/VTL vacuum trip / (later) ----- Turbine Front Standard	G4D-711 P&ID (later)
VACUUM BRK VLV 1A/1E 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) Plasm 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 (Eac) Valve	74/754 74/755 Thermal Overload or Magnetic Trip in (1A) 2-40815/MCC 2A1 (1B) 2-41622/MCC 2E1	G4D-754 G4D-755
TURBINE LUBE OIL RESV LEVEL HI/LO D-43	1. Indicates HI or LO level exist in turbine lube-oil reservoir. 2. None	1. None 2.(A) Verify indications at reservoir. (B) If low, check for system leak. (C) If level rapidly decreasing; lower load & remove unit from the line. (D) If high; check valve line-up, conditioner and possible L.O. cooler TOW leak.	+/- 10" From Normal level of 45.5"	71/OI/H 71/OI/H IS-22-3 ----- Level switch in lube oil reservoir	G4D-726 P&ID (LATER)
SWE STEAM PRESS LO D-53	1. Indicates steam to SWEs 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)	G4D-669 P&ID (later)

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ANNUNCIATOR PANEL D VERTICAL GROUP 4

WIRELINE TITLE	1. INDICATED CONDITION 2. CHECK WITH INDICATION WHICH VERIFY OR PINPOINT TRUBLE	1. AIRD ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TRIPLINE EXHAUST HOOD THP HI TRIP D-4	Check Trip Info			74/68	QAD-711
TRIPLINE EXHAUST HOOD THP HI D-14	1. Exhaust hood temperature is high, due to possible (A) Low/no steam flow for extended period (F) 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) Ensure Ex. hood spray valves are open fully. (E) Ex. V-up load/increase steam flow (C) Increase vacuum.	175°F	26/EXH-1 26/EXH-2	QAD-711
CLAND STEAM CLAND PRESS HI/LO	1. HI or Lo gland seal steam pressure. (which one 135 or 22 # HIR?) 2. Gland seal steam HIR pressure, gauges (high and low)	1. None 2.(A) Check regulators locally - check valve line-up. (F) Regulate steam pressures using bypasses and block valves as appropriate.		63/AS 3, 4, 5, 6	QAD-711
CLAND STEAM CLAND PRESS LEVEL HI/LO D-24	1. HI or Lo level in gland steam condenser condensate reservoir tank. 2. None	1.(A) HIRI - pump should start before alarm recalled. (E) ILM - (later) 2.(A) Check tank locally (E) Later	HI - Low -	LS-12-12 Low LS-12-13 High	QAD-774
CLAND STEAM EXHAUST HOOD TRIP D-34	1. Overload trip on 2A or 2B gland steam condenser exhauster. 2. Running exhauster indicating lights - out.	1. None 2.(A) Start standby exhauster (F) Open valve for standby exhauster close valve on tripped exhauster. (C) Notify Electrical Department		Exhaust Level 74/768 74/769	QAD-768 QAD-769
AUX STEAM HIR PRESS LO D-44	1. Low pressure on RAP Aux Steam supply header. 2. Aux steam supply pressure gauge.	1. HI temp. In RAP will isolate steam line. 2.(A) flow Operator check regulated supply locally (F) Check for demand change or possible leak.		HS-HS-3	QAD-669

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ANNUNCIATOR PANEL D VERTICAL COLUMN 5

WINKER TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING IDENTIFY NUMBER & LOCATION	REFERENCE
TURBINE OVERSPEED TRIP D-5	1. Turbine trip at 111.5% overspeed from (later) 2. (A) Turbine trip-valves closed, possible for trip if >15% NR. 1. Turbine vibration excessive on one or more turbine bearings. 2. Vibration as indicated/printed on VIB/RCV recorder later points later.	111.5% of rated speed (2000) RPM (later?) 7 m/s (out-out) (below) (600 RPM)	744b (later DEH & HCH?) (later) RV/VB later later	QAD-711 (later)
TURBINE VIBRATION APPARENT D-15	1. Indicates rotor eccentricity high. (Loading of the rotor) 2. Eccentricity recorder indication/print-out.	later		QAD-711
TURBINE EXPAN/RCV APPROX D-25	1. None 2. Consult Turbine Generator Tech Manual for actions.	later	No. 1, 2 Rotor Long No. 1, 2 Rotor Short (later held in RUCP)	QAD-711
REHEATER TRIP III D-35	1. High temp, will cause all reheater TUVs to close. 2. When temp declines: (A) Reset RCV panel (E) If valves don't reopen; reduce load constant for no NRs. (ask more later)	LATER	RCV PANEL High Temp Alarm Reheater control Valves Panel RUC-201 Zolt	QAD-699
REHEATER TRIP III D-45	1. Temp, REH fluid has risen to 121°F in (later) reservoir? 2. None	121°F (check later)		QAD-721

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ANNUNCIATOR PANEL D 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
TURBINE THRUST BGC TRIP D-6	1. HI-press. from thrust BGC wear detector indicative of axial Turb. shaft movement, has tripped turbine 2. HI thrust BGC face Temp. hi; temp. rec. TR-22-1, Points 1, 2, 15, & 16.	1. (A) Turbine solenoid trip (20/AST). (P) Rx trip if >15% power. (C) Generator lock-out if Gen. GCBs shut. 2. (A) Follow Rx trip Off-Norm Proc #2-0030130 (P) Notify Mech. Maint. - DO NOT attempt turbine restart until checked.	(later) PSIG	74TB (later)	GD-711
TURBINE THRUST BGC HSE-TRIP D-16	1. HI-press. from thrust BGC wear detector indicative of axial turbine shaft movement. 2. HI thrust BGC face temp. hi; temp. rec TR-22-1, Pts 1, 2, 15, 16.	1. None 2. (A) Monitor bearing temps closely. (P) Ensure Feed/STM heating eqdp. removal from service is consistent with load	(later) PSIG	63/TB (later)	GD-711
TURBINE BEARING TEMP HI D-26	1. HI TURB BGC temp. from temp. recorder 2. (A) TURB Temp. recorder TR-22-1, points (P) HPG oil header temp. indicator	1. None 2. (A) Check lube oil coolers and TOW to reduce temperature. (B) Reduce load to decrease temperature (C) If bearing temp reaches (later) °F		TR 22-1 	GD-794
DEH HP 2A/2P OVERLOD TRIP D-36	1. Running DEH pump has tripped on overload. 2. DEH pump indicating lights - out.	1. (A) Standby DEH pump starts. (P) Turb./Rx trip may occur if press. delays 2. (A) Immediately start standby HP if not run. (P) If turb. trips, refer to Rx trip Procedure No. 2-0030130 (C) Notify Electrical Department.		74/720 74/720 later	GD 720
DEH RETURN 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. (P) Notify Mech. Maint. Dept.	(later) PSIG	63PR (later) (later)	GD 720 B&ID (later)
DEH RESERVOIR LEVEL LO-LO D-56	1. Lo-to level in DEH reservoir is close to causing a DEH lock-out. 2. (A) DEH pumps trip off - green lights (P) DEH lock-out actuated behind RTRP-201.	1. (A) DEH lock-out - pumps trip. (P) Possible turbine/Rx trip. 2. (A) Try to reset lockout quickly & restart DEH pump. (B) If turb./Rx trips; refer to Rx trip Off-Normal Procedure 2-0030130.	(later) inches from bottom	71/FL1 (later) (later)	GD 720 B&ID (later)

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ANNUNCIATOR PANEL D VERTICAL COLUMN 7

WIREWIT TITLE	1. INDICATED CONDITION 2. CIRCULAR BUSH INDICATION WHICH VERIFY OR FURNISH TRIP	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE GEN LOCKOUT TRIP D-7	Later	Later Investigate	Later	74G Later	040-711
TURBINE HTRSG STOP/ AUTO STOP LC FAILURE E-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.	Later	74/710 74/711	040-711
TURBINE RETRUCK D-27	1. Turbine rackback 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 2.22/sec. (B) Indications associated with loss of main FD HP or heater drain pump.	1. (A) Loss of both htr drain PP; rackback to 92% (B) Loss of feed PP; rackback to 60% 2. (A) Take action to stabilize unit (B) Follow Loss of Feed O/N Proc. 2-0700040. (C) If Pk trips, follow Bx Trip O/N Proc. No. 2-0701130.	(Later trigger) Rack back to BPS Press of (A) or (B)	RX1 (later) (later)	040-712
IEH PP 2A/2B FILTER Δ /P HI D-37	1. Indicates high differential pressure across 2A or 2B IEH (Later) 2. None	1. None (check below) 2. (A) Start opposite pump (B) Remove pump with high: D/P from service, and have Mechanic clean strainer.	(Later) ESID	630/MHF-1 630/MHF-2 EH Fluid Reservoir	040-720 040-721 R&ID (LATER)
IEH PP DISCH PRESS HI/LO D-47	1. IEH PP Disch. press. hi or lo (later-check cause) 2. EH fluid header pressure gauge.	1. Back-up PP starts on lo press. 2. (A) W/hi press.; start back-up PP & secure operating pump. (B) Notify Mechanical Maintenance Department (check this)	HI - (later) Lo -	630P EH Fluid Reservoir	040-721 R&ID (LATER)
IEH 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 IEH lock-out and subsequent turbine trip. (B) If high -drain down, slowly. (C) If Low -determine cause, have Mechanical Maintenance fill reservoir.	HI - Lo - (later)	71PL-1 71PL-2 EH Fluid Reservoir	040-720 R&ID (LATER)

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL D VERTICAL COLUMN B

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETOPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TURBINE REACTOR TRIP D-8	1. Turb. solenoid trip from Rx trip (loss of voltage on CFA trip bus). 2.(A) Rx trip BRK open - CFAs on bottom. (B) Turbine tripped - valves closed.	1. Turbine trip (SWST) 2. Follow Rx trip Off-Normal Proc. 2-0030130.	72/4 0 Voltage	74R ----- (later)	Gd-711
EXTR STEAM DRIFF LFG LEVEL HI D-18	(later)	(later)	(later)	IS-10-6A, B IS-10-7A, b IS-10-8A, B (LATER)	Gd-1292 Gd-1293
125W DC BUS 2C BATT CHGR 2C TROUBLE B 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 reflash panel. (F) Notify Elec. Dept. if necessary.	A) B) C) D) E) F)	RA-T-8/999 Reflash Panel ----- Reflash - (later) Charger - Turbine SWGR Room	Gd-999
125W DC BUS 2C (GROUND) D-38	1. Ground on 2C 125W VDC bus 2. None	1. NONE 2.(A) Follow IC OR ISOL. Off-Norm. Procedure (B) Notify Elec. Dept. if necessary	(later)	64P, 64N, GAR ----- 125W DC Bus Turbine SWGR Room	Gd-999
125W DC BUS 2C UNDERVOLTAGE D-48	1. Voltage has delayed on 2C 125W DC bus to <u>LATER</u> V. 2. 2C DC bus voltmeter on RTGB-201.	1. None (later-possible chgr. trip?) 2.(A) Check charger operation locally. (P) Contact Electrical Dept.	(later)	27 -----	Gd-999
DEH RESERVOIR LOCKOUT TRIP/FAIL D-58	1.(A) DEH reservoir lo-lo level has caused DEH lockout to actuate, stopping EH pumps. (P) Or, lock-out relay has lost DC control power. 2.(A) Check EH pumps - if still running then lockout relay has lost DC power. (P) Check lock-out behind RTGB-201. (C) Check other Lo Res. level Annunciators D-57	1. Turbine/Rx trip from low EH HBR press. If pumps are not running. 2.(A) Lockout actuation; try to reset lockout & restart PPs. If no PPs restart try to reduce Turb./Rx load as low as possible prior to trip. Then follow Rx trip O/H Procedure No. 2-0030130. (P) If EH Pps continue to run; have operator check reservoir level. (C) If relay has lost power, call Elect. Dept.	(LATER)	74-1 86LFT/720 -----	Gd-720

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ANNUNCIATOR PANEL D 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
DEH SYSTEM DC BUS FAIL TRIP 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 indications/response.	1.(A) Turbine trip (2MST) (P) Rx trip if >15% pwr. (C) Gen. lockout actions if turb. trip with OCBs closed. 2. (A) Follow Rx trip O/N Proc. 2-0030130 (B) Notify I & C Department.	(later)	74/DC (later)	QAD-711
DEH DC SUPPLY TROUBLE D-19	1. Loss of +15, +10 or 48 volt bus in DEH controls has (swapped to manual?) (later) 2. (later)	1. (later) 2. Contact I & C to pinpoint & repair fault.		DEH (later)	QAD-717
HYDROGEN SYS ALARM PANEL D-29	1. Alarm on local hydrogen control panel. (One or more of 12 alarms) 2. Problems with seal oil or hydrogen systems.	1. Seal oil back-up pump starts on low press. 2. Have operator check local alarm panel for dropped target.	(later)	RI/TRBL (later) (later)	QAD-867
GEN H ₂ /EXCTR AIR TO CLR TRIP 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 LATER.	1. None 2. Follow main generator Off-Normal Procedure (# later)	(later)	TR-22-30 PT'S, 15, 16, 19, 20 (later)	QAD-890
GEN H ₂ FIRN CLRS TRIP HI D-49	1. High temp. of hydrogen or air at respective cooler disch. (Gen. temp. monitoring system). 2.(A) HI temp. on points (LATER) when data is called up on Gen. Temp. Monitor System Terminal. (P) Generator temp. recorder temperatures high.	1. None 2. Follow Main Generator Off-Normal Procedure Procedure #later.	(later)	Ramp/Scanner (later) (later)	QAD-892
STATOR HYDROGEN TRIP HI D-59	1. High hydrogen temp. from stator. (from temp. rec.) 2.(A) Gen. Temp. recorder TR-22-30 points (LATER) (P) HI Temp. on points (LATER) when data is up on Gen. Temp. Monitor System Terminal.	1. None 2. Follow Main Generator Off-Normal Procedure later.	(later)	YT 22-2 (later) (later)	QAD-890

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ANNUNCIATOR PANEL D 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
TURBINE MANUAL TRIP D-10	1. Turb. has been tripped by manual turb. trip on RTGB or locally at turbine front standard. 2.(A) Turbine trip - valves closed, low RH fluid press (F) Rx trip of >15% power, CEAs in, power dec.	1.(A) Turbine trip (20 AST and 20 ET) (B) Rx trip if >15% power. (C) Generator lockout actions if CCBs closed 2. Follow Rx trip O/N Proc. 2-0030130.	Pushbutton depressed or trip handle to "TRIP"	PH/710 Pushbutton (later - handle) Pushbutton - RTGB-201 Handle - Turbine Front Standard	Gd-711
PLANK D-20					
HYDROGEN SYS ALARM PANEL DC FAILURE D-30	1. Indicates DC RWP to hydrogen panel has been lost 2. Hydrogen/CEN indications possibly erroneous.	1. None 2.(A) Investigate cause locally. (F) Notify Elect. Department if necessary	"0" DC Volts	R2 (later) ----- (later)	Gd-667
SEAL OIL DC P/U PP RUNNING D-40	1. Indicates anytime seal oil back-up pump is running 2. None in Control Room.	1. PP auto-starts when seal oil press. decays to (LATER) PSI < hydrogen pressure. 2.(A) Have Operator check seal oil sys. locally	(later)	MX (later) (LATER)	Gd-670
SEAL OIL DC E/U PP OVERLOAD D-50	1. Indicates DC seal oil back-up 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 required for seals integrity; shut down unit & purge generator.	(later)	OL (later) ----- (later)	Gd-670
GEN HRC OIL VAPOR EXTR OFF D-60	1. GEN HRC oil defoaming tank vapor extractor has: (A) Tripped on overload. (B) Control Switch to Stop. (C) BRC racked out at MCC (LATER)	1. None 2.(A) Restart extractor if possible. (B) Out in air jet vapor ext. to ventilate tank. (C) Notify Electrical Dept.	(later trip) ----- CS to "Stop"	42 (later) ----- (later)	Gd-673

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ANNUNCIATOR PANEL E 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
CIRC WTR PP SEAL/ LUBE WATER PRESS FID ID E-1	1.(A) LOW LUBE WATER PRESS. OWP's 2A1, 2A2, 2B1, 2B2 (F) low seal water press. OWP's 2A1, 2A2, 2B1, 2B2 (C) low lube water flow OWP'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) ISIG. 2.(A) Check condition of lube-wtr system. (F) Stop affected pump if necessary.	8 ISIG 6 CIM	RA-E-1 Flash Panel Intake Structure	OWD-1217 PID Z993-G-082
BLANK E-9	BLANK				
HYPOCHLORINE EST ALARM E-17	1. Indicates an alarm on Hypochlorinator Control Panel 2. None	1. None 2. Dispatch AED to Intake to determine cause of alarm and take corrective action.	See hypo- chlorinator panel summary	RT-1 ALARM RELAY Hypochlorinator Alarm Panels	OWD-693
HYPOCHLORINE 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 AED to Intake to determine cause of alarm and take corrective action.	See hypo- chlorinator summary	RT-2 2ND ALARM RELAY Hypochlorinator Alarm Panel	OWD-693
COND GRAVITY TANK LEVEL ID E-33	1. Indicates a condenser tube sheet leak has developed, as detected by lo-level in tube sheet leak-detect head tank. 2. None	1. None 2. (A) Notify Mechanical Maintenance. (E) Ensure tank is refilling with condensate or demin water.	(later)	ES-12-26 Level Switch On gravity tank on blue deck	OWD-782
BLANK E-41	BLANK				

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ANNUNCIATOR PANEL E 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2A1 OVERLD/TRIP E-2	1. (A) OWP 2A1 has tripped on overload. (B) Or, blown fuse or bkr racked out. 2. (A) Pump motor ammeter. (B) Pump bkr indicate lights - out or green.	1. Closure of pump disch. valve MW-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 BRK 2-20103/416N-2A2	OWD-610 PD & MD Sheet 2
CIRC WTR PP 2A1 PRC TEMP III 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 BRC Temp. Probes 2A1 Circ. Water Pump Intake 74	OWD-627
CIRC WTR PP 2A1 DISCH MW-21-2A1 OVERLOAD E-18	1. MW-21-2A1 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 BRK 2-41003/MCC-2A3	OWD-811 PD 7 MD Sheet 47
CONDENSER WATER BOX VACUUM ID E-26	1. In-condenser vacuum of less than 25" Hg exist in condenser. (From one or more of 4 Instr) 2. (A) SJAR Stm pressure. (B) Steam seal pressure. (C) Other vacuum/backpressure instruments.	1. Turbine still trip if vacuum decays to 18 - 22" vacuum. 2. Follow loss of condenser Vacuum Off-Normal Procedure #2-0610031.	<25" mercury vacuum (from 1 or more of 4PS)	RA-T-3/(Reflash) IS-12-36A & 36B IS-12-37A & 37B / Pres. switches (LATER)	OWD-742
TW PP 2A OVERLD/TRIP E-34	1. (A) 2A TW pump has tripped on overload. (B) Or, blown fuse, or been racked out. 2. (A) Check pump motor ammeter. (B) Motor bkr indicate lights-out or green.	1. None 2. (A) Follow TW System Off-Normal Procedure #2-0330030. (B) Check pump, motor and fuses.	Therm. (OVERLD) OR TIME Dependent O. C. Trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relays in Breaker 2-20106/416N-2A2	OWD-825 PD & MD Sheet 2
TW PP 2A BRC TEMP III E-42	1. High temperature on 2A TW 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 TW System Off-Normal Procedure 2-0330030	100° F	TIS-13-44-2A1 TIS-13-44-2A2 Inboard / Outboard Bearing Temp 2A TW Pump	OWD-827

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2P1 OVRD / TRIP E-3	1. (A) OVP 2P1 has tripped on overload, (B) Or, blown fuse or Bkr racked out. 2. (A) Pump motor ammeter, (E) Pump Bkr indicate lights - out or green.	1. Closure of pump disch. valve MV-21-2B1 2. (A) Have operator check pump and fuses. (E) 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 BKK 2-20104/4160N-2A2	GWD-812 PD & MD Sheet 2
CIRC WTR PP 2B1 BKG 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. (P) If pump must be shut down, reduce load to match condenser loss in efficiency.	(later)	TS-21-22-1B1-1, 2, 3	GWD-827
CIRC WTR PP 2P1 DESCH MV-21-2P1 OVERLOAD E-19	1. MV-21-2B1 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 BKK 2-41006/MCC-2A3	GWD-813 PD 7 MD Sheet 47
TRVLG SCRN FAILURE E-27	1. High differential on one of four indicators. 2. A green or no light indication on associated screen.	1. No Auto Action 2. Have operator check for overloads/ screen, high temperature on drive motor, loss of lubricant.	~0 RPM	Speed SW 62/821-824 Speed detectors on 2A1, 2A2, 2B1, 2B2 screen shafts	GWD-813
TOW PP 2P OVRD/TRIP E-35	1. (A) 2P TOW pump has tripped on overload (P) Or, blown a control circuit fuse (C) Or, has been racked-out 2. (A) Check pump motor ammeter (B) Motor breaker indicating lights - out or green	1. No Auto Action 2. (A) Follow TOW Off-Normal Procedure #2-0330030. (P) 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 BKK 2-20306/4160N-2P2	GWD-826 PD & MD Sheet 3
TOW PP 2P BKG TEMP HI E-43	1. High temperature on 2A TOW pump Inboard or out-board bearings. 2. None	1. No Auto Action 2. (A) Have operator locally check oil and (B) Shut pump down if necessary (C) Follow TOW Off-Normal Procedure #2-0330030.	100° F	TS-13-44-2B1 TS-13-44-1E2 Temp. switches 2B TOW Inboard/Outboard Bearings	GWD-827

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL E VERTICAL COLUMN 4

WIREMAN TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FINDS THE PROBLEM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SECTOR/INT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2A2 OVLID/TWIP E-4	1. (A) OVP 2A2 has tripped on overload, (P) O ₂ , blown fuse, or blr rack out. 2. (A) Pump motor ammeter. (P) Pump blr indicate lights - out or green.	1. Closure of pump disch. valve MW-21-2A2. 2. (A) Have operator check pump and fuses. (B) Reduce turbine load to match condenser efficiency losses.	THRM OVRD OR Time Dependent O.C. Trip	Thermal Overloads and Time Dependent O.C. Relay in 88K 2-20303/46N-282 TIS-21-22-1A2-1, 2, 3	QAD-814 PD & MD Sheet 3
CIRC WTR PP 2A2 HNC THMP HI E-12	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. (P) If pump must be shutdown, reduce load to match condenser loss in efficiency.	(later)		QAD-827
CIRC WTR PP 2A2 DISCH MW-21-2A2 OVRID/LO E-20	1. MW-21-2A2 has stopped travel in the open or closed direction due to excessive torque. 2. Loss of Breaker Indications 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 1. Starts screen with PPS & screen rotation 2. (A) If SCR WSH SYS has not started, actuate manually from CTRL. RD. (P) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	THRM. OVRD OR 42 AHS O.C. Trip	Thermal Overloads and O.C. Trip Coil in 88K 2-4881/48C-283 PIS-21-1A2, -1A2 PIS-21-1A2, -1A2	QAD-815 PD & MD Sheet 47
TRM SINGLE TANK LEVEL HI/LO E-28	1. HI or LO level in TRM Surge Tank possibly because (A) Auto makeup has actuated and overfilled (E) OR leak has developed and low level has occurred 2. NRE	1. (A) If SCR WSH SYS has not started, actuate manually from CTRL. RD. (P) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	(LATER)		QAD-819
TRM SINGLE TANK LEVEL HI/LO E-36	1. HI or LO level in TRM Surge Tank possibly because (A) Auto makeup has actuated and overfilled (E) OR leak has developed and low level has occurred 2. NRE	1. (A) If SCR WSH SYS has not started, actuate manually from CTRL. RD. (P) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	(LATER)		QAD-819
TRM SINGLE TANK LEVEL HI/LO E-44	1. (A) LATER (P) LATER (C) LATER (D) LATER 2. LATER	1. (A) If SCR WSH SYS has not started, actuate manually from CTRL. RD. (P) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	(LATER)	IS-13-1 IS-13-2	QAD-733
TRM SINGLE TANK LEVEL HI/LO E-44	1. (A) LATER (P) LATER (C) LATER (D) LATER 2. LATER	1. (A) If SCR WSH SYS has not started, actuate manually from CTRL. RD. (P) Have Operator check intake for excessive trash & continuous run screen until condition has cleared.	(LATER)	(LATER)	QAD-818

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL E 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIRC WTR PP 2P2 OVERLD/TRIP E-5	1. Clogged screens (F) Bus a blown fuse or, (C) Breaker has been racked out. 2. (A) Pump motor ammeter (F) Pump Pktr indicating lights - out or green	1. Starts screen wash pumps & screen rotation 2. (A) Have operator check pump and fuses (E) Reduce turbine load to match condenser efficiency losses	Overload OR Time Dependent O.C. Trip	PBS-21-14A2, -14E2 74-2 Thermal Overloads and Time Dependent O.C. Relay in 2-2-4/4160V-2B2	GMD-816 FD & MD Sheet 3
CIRC WTR PP 2P2 PRC THMP HI E-13	1. High thrust bearing temperature 2. May be accompanied by excessive amps indication	1. No Auto Action 2.(A) Have Operator check local temp. & oil LVL (E) If PP must be shut down, reduce load to match condenser loss in efficiency.	(LATER)	TIS-21-22-1E2-1, -2, -3	GMD-827
CIRC WATER PP 2F2 MESCH MW-21-2P2 OVERLOAD E-21	1. MW-21-2P2 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. (E) May have to open or close manually.	Thermal Overload or 42 Amps O. C. trip	74 Thermal overloads and O.C. Trip Coil in HSK 2-41802/180C-2B3	GMD-817 FD & MD Sheet 47
SCREEN WASH PP STRAINERS Δ/P HI E-29	1. A plugged or dirty screen wash pump strainer either 1A or 1P 2. To screen wash PP HIR press, 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)	PBS-21-12A, -12B	GMD-1007
TOW I/O OUTLET PRESS LO/ THMP HI E-37	1. Either a plugged HT EXCHG, insufficient TOW flow or loss of TOW pump. 2.(A) Indicating lights on ICW and TOW pumps. (F) ICW discharge header pressure (C) Pt. 48 and Pt. 49 on PW and SDB Thmp. indicator behind RTCB-202 (TOW Temp)	1. No Auto Action 2. Have operator check TOW system locally. 3. If any system failure occurs, refer to TOW Off-Normal Procedure #2-0330030.	(LATER)	PS-13-4 TS-13-45A, -B	GMD-1007
BLANK E-45	BLANK				

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR 19022, E VERTICAL COLUMN 6

WIRE/W TITLE	1. INDICATED CONDITION 2. CORREL WITH INDICATION WHICH VERIFY OR PREDICT TRUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SIGNAL ELEMENT NUMBER & LOCATION	REFERENCE
ICM PP 2A OMRD/701P	1. (A) ICM PP 2A has tripped on overload or, (P) has blown a fuse or, (C) Breaker has been racked out. 2. (A) Pump motor ammeter (P) Pump bkr indicating lights - (later)	1. No Auto Alarm 2. (A) Check breaker 2-20207 locally. (B) Refer to ICM Off-Normal Procedure P2-064030.	Thermal or Time Depen- dent O. C. trip	74-1 74-2 Thermal Overloads and Time Dependent O.C. Relay in BRK 2-20207/4160W-2A3	OMD-832 PD & MD Sheet 4
PLANK	PLANK				
ICM HIR A MW-21-3 OMRD/51AS FAIL TO CLOSE	1. MW-21-3 has tripped 2. (A) MVV indicating lights out if tripped on overload (P) MVV does not indicate closed w/51AS Sig. present	1. No Auto Action 2. (A) Check breaker (B) Refer to ICM Off-Normal Procedure P2-064030.	THIRN (ARLD OR 8 Amps O.C. Trip	74, 33, 34 Thermal Overloads and O.C. Trip Coil In BRK 2-41311/MW-2A6	OMD-835 PD 7 MD Sheet 35
ICM HEAVES PRESS LO	1. ICM header A or B low pressure 2. (A) ICM HIR press. as indicated on PIS-21-8A or BR (P) Reflash Panel Indication	1. No Auto Action 2. (A) Check related ICM parameters (P) Refer to ICM Off-Normal Proc. 2-064030	(LATER)	RA-RAB-17/ReFlash PT-21-8A PT-21-8B	OMD-1556 OMD-831
ICM PP 2A LOVE WATER FLWM LO	(LATER)	(LATER)	(LATER)	FIS-21-3A-1 & 2	OMD-1217
ICM PP 2A PWR FAIL. / SS ESOL	1. (A) ICM PP 2A BRK has been given a start signal, (OS or ES/AS) and has failed to close. (P) Or, has isolated from the control room at it's 2. Breaker indicate lights - green or out.	1. None 2. (A) Start Failure; check BRK locally, contact Electrical Dept. for assistance. (B) ISOLATED; return MW/ESOL switch to "NORMAL", if applicable.	Start Signal >5 sec. w/ BRK open MW/ESOL Switch In	74-3 SS/ESOL T.D. Relay/ESOL 34 BRK 2-20207 4160W has 2A3	OMD-832

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUBPANEL

ANNUNCIATOR PANEL E VERTICAL TRIP 7

WIREWIRE TITLE	1. INDICATED CONDITION 2. CORREL. WITH INDICATION WHICH VERIFY OR FURNISH TRIP	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	3. TRIP (OR TIME DEPENDENT O.C. Breaker)	4. TRIP (OR TIME DEPENDENT O.C. Breaker)	REFERENCE
ICW PP 2B OMELD/THIP	1. (A) ICW PP 2B has tripped on overload or, (F) has blown a fuse or, (C) Breaker has been racked out 2. (A) Pump motor indicator (B) Pump bkr indicating lights - (later)	1. No Auto Action 2. (A) Check breaker (B) Refer to ICM Off-Normal Procedure E2-064003).	Thermal Overload and Time Dependent O.C. 2-20410/416N-2B3	74-1 74-2	QAD-833
ICW HPS LIFE WATER PRESS/FLOW LO	(LATER)	(LATER)	(LATER)	74-33, 30	QAD-1556
ICW HPS MW-21-2 OMELD/SSIAS FAIL TO CLOSE	1. MW-21-2 has tripped 2. (A) VLV indicating lights out. If tripped on overload (B) VLV does not indicate closed w/SSIAS signal present.	1. No Auto Action 2. (A) Check breaker 2-42101 locally. (B) Refer to ICM Off-Normal Procedure E2-064003).	Thermal Overload or 8 Amps O. C. trip	74-33, 30	QAD-836
ICW HPS SSIAS Δ/P HI	(LATER)	(LATER)	(LATER)	RA-CC-1	QAD-1007
ICW PP 2B LIFE WATER FLOW LO	(LATER)	(later)	(LATER)	FIS-21-3B-1 & 2	QAD-1217
ICW PP 2B BKR FAIL / SS ESAL	1. (A) ICW pump 2B has been given a start signal, (GM or ESFAS) and has failed to close, (F) Or, has isolated from the Control Room at its NPP/ESAL SW. 2. Breaker indicate lights - green or out.	1. None 2. (A) Start Failure; check bkr locally, contact Electrical Department for assistance. (B) ISOLATE; return NPP/ESOL switch to "NORMAL", if applicable.	Start Sig. >5 sec w/ BKR open NPP/ESOL SW. in "ESL"	74-3 SS/ESAL Bkr 2-20410 416N Bus 2B 3	QAD-833

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL E VERTICAL GROUP B

2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT DEPENDENT O.C. Trip	ENGINE ELEMENT NUMBER & LOCATION	REFERENCE
ICW PP 2C OMD/TRIP E-8	1. (A) ICW PP 2B has tripped on overload or, (B) Has a blown fuse or, (C) Breaker has been racked out. 2. (A) Pump motor ammeter (B) Pump bkr indicating lights - (later)	1. (later) 2. (later)	Thermal Overload and Time Dependent O.C. Relay in BKK 2-20503/4160N-2AB	74-1 74-2	QMD-834 PD & MD Sheet 6
CIRC WTR PP LUBE WTR SUPPLY BACKUP IN SERVICE E-16	1. Lube water from ICW HBR to GWPs has been lost, from lube wtr strainers plugged, or isolation & domestic wtr supply valve has opened to supply Circ. Pumps. 2. (A) Lube WDR Strainer HI D.P. Alarms (IA-4, IB-4) on HWAC Panel. (B) SIAS: HW-214A, & 4E Closed - Green.	1. Domestic lube water supply valve opens at (later) ISIG to supply circ. wtr pumps. 2. (A) Have operator back-wash lube wtr strainers & check lube wtr ldr. (B) SIAS: re-open ISOL VALS if SIAS NOT Valid	(later) ISIG	POW-21-26 LIM SW Domestic Water Supply Valve Intake structure bldg.	QMD-810 P & ID
PLANK E-24	PLANK				
ICW PWS HX STRAINER Δ/P HI E-32	(LATER)	(LATER)	(LATER)	TA-T-9	QMD-1007
ICW PP 2C LUBE WATER FLOW LO E-40	(LATER)	(LATER)	(LATER)	FIS-21-3C-1 & 2	QMD-1217
ICW PP 2C BKK FA 1/ SS ISOL E-48	1. (A) ICW pump 2C breaker has been given a start signal, (OM or ESFAS) and has failed to close, (B) Or, has isolated from the control room at it's NORM/ISOL switch 2. Breaker indicate lights - green or out.	1. None 2. (A) Start Failure; check bkr locally, contact Electrical Dept. for assistance. (B) ISOLATED; return NORM/ISOL switch to "NORMAL", if applicable.	Start sig. >5 sec w/ bkr open NORM/ISOL SW In "ISOL"	74-3, SS-1/ISOL Bkr 2-20503 4160N Bus 2AB	QMD-834

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F 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
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 feed from 2A htr LCV-11-7A1, open 7A2. (B) HI-HI will open LCV-11-1A2 & LCV-11-7A2 (2A-Alt-to-conf.) 2.(A) Check local gauge glass & OPS of LCV's (B) Man. OPS of LCV's may be required.	2' 1 1/4" BELOW E	IS-11-3A Level SW L.P. Heater 2-1A	Gd-665 PID 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-11-13A1 or LCV-11-7A2. 2. NONE	1. Closes drain from 2-3A L.P. HTR LCV-11-13A1, HI HI will open LCV-11-7A2. 2.(A) Check local Gauge Glass & OPS of LCV's. (B) Manual OPS of LCV's may be required.	2'0" below E	IS-11-9A Level SW L.P. Heater 2-2A	Gd-666 PID 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-11-13A2 or LCV-11-13A1. 2. HI-level alarm on heater 2-2A if LCV-11-13A1 is stuck in the open position.	1. HI or HI HI Signal opens LCV-11-13A2 (Alt. drain to the condenser) 2.(A) Check local gauge glass & OPS of LCV's (B) Manual OPS of LCV's may be required.	1' 2 3/4" below E	IS-11-15A Level SW L.P. Heater 2-3A	Gd-667 PID 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 NORM LVL. (LCV-11A may be stuck open) LCV-11-24A2 malfunction 2.(A) 2A HTR Drain PP trip and alarm. (F) HI level alarm 2C and/or 2D M.S.R. (C) HI level alarm H.P. heater 2-5A	1.(A) Modulate open LCV-11-18, open LCV-11-25A2, close LCV-11-24A1. (F) Open LCV-11-18A, dump to condenser (C) LO-LO level will trip associated HTR drain PP 2A. 2.(A) Verify Gnt. VLV OPS & level locally (F) Take manual control	IS-11-20A HI Level 9 1/8" below E IS-11-22A LO level 2'2" below E	IS-11-20A IS-11-22A Level Switches L.P. Heater 2-4A	Gd-667 PID 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 (F) HI-level alarm 2C & 2D 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 non-return 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 E	IS-11-26A Level SW H.P. heater 2-5A	Gd-667 PID 2998-G-081 Sheet 1 of 2 and Sheet 2 of 2
(BLANK) F-41	(BLANK)	(BLANK)	(BLANK)		

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 2

WINDOW TITLE	1. INDICATED CHARACTER 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
LP HTR 2-1B LEVEL HI F-2	1. Greater than normal level in L.P. HTR 2-1B due to malfunction of LCV-11-1B1, LCV-11-1B2 or 2. NONE	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 gauge glass (B) Manually Operate LCV's as required.	2' 1 1/4" BELOW C	IS-11-3B Level SW L.P. Heater 2-1B	QAD-665 PID 2998-G-081 Sheet 1 of 2
LP HTR 2-2B LEVEL HI F-10	1. Greater than normal level in L.P. heater 2-2B due to malfunction of LCV-11-13B1 or LCV-11-7B1. 2. NONE	1. Closes drain from 2-3B L.P. HTR LCV-11-13B1, HI HI will open LCV-11-7B2., alt. drain to cond. from L.P. heater 2-2B 2.(A) Check local Gauge Glass & OPS of LCV's. (B) Manually Operate LCV's as required.	2' 0" below C	IS-11-9B Level SW L.P. Heater 2-2B	QAD-666 PID 2998-G-081 Sheet 1 of 2
LP HTR 2-3B LEVEL HI F-18	1. Greater than Normal in L.P. HTR 2-3B due to malfunction of LCV-11-13B2 or LCV-11-13B1. 2. HI-Level alarm on heater 2-2B if LCV-11-13B1 is stuck in the open position.	1.(A) HI or HI HI Signal opens LCV-11-13B2 (Alt drain to the condenser) (B) HI-HI Sig. closes non-retn. VLV SC-10-3B 2.(A) Check local gauge glass & OPS of LCV's (E) Manual OPS of LCV's may be required.	1' 2 3/4" Below C	IS-11-20B Level SW L.P. Heater 2-3B	QAD-667 PID 2998-G-081 Sheet 1 of 2
LP HTR 2-4B LEVEL HI/LO F-26	1. L.P. Heater 2-4B may be higher or lower than normal level (LCV-11B may be stuck open) LCV-11-24B1 or LCV-11-24B2 malfunction 2.(A) 2B heater drain pump trip and alarm. (B) HI level alarm 2A & 2B M.S.R. (C) HI level alarm H.P. heater 2-5B	1.(A) Modulate open LCV-11-18B, open LCV-11-24B2 close LCV-24B1 alt. drain to the cond. (B) Open LCV-11-18B, alt. drain to cond. (C) Lo-Lo level will trip assoc. htr. PP 2B 2.(A) Verify control VLV OPS & level locally (B) Man. operate LCV's as required	IS-11-20B HI 9 1/8" below C IS-11-22B LO 2' 2" below C	IS-11-20E IS-11-22B Level Switch L.P. heater 2-4B	QAD-667 PID 2998-G-081 Sheet 1 of 2
HP HTR 2-5B LEVEL HI F-34	1. Higher than NORM level may be due to malfunction of LCV-11-24B1, LCV-11-30A1 or LCV-11-30B1 2.(A) Low level alarm on L.P. Htr 2-4B (E) HI Level alarm 2A and/or 2B drain collection tank	1.(A) Open LCV-11-24B1 (B) HI & HI-HI will close LCV-11-30A1 & LCV-11-30B1, open LCV-11-30A2 & E2 (C) Close non-return VLV SC-10-5B on HI-HI 2.(A) Verify VLV OPS & level locally. (B) Man. Operate LCV's as required.	1' 8 7/8" Below C	IS-11-26B Level SW H.P. Heater 2-5B	QAD-667 PID 2998-G-081 Sheet 1 of 2 and Sheet 2 of 2
HTR DRN. PP 2A/2B STRNR Δ /P HI F-42	1. Indicates strainer blockage on Htr. Drain PP 2A or 2B or high heater drain pump flow. 2.(A) Check heater drain pump supe. (B) Check for tripped heater drain pump (C) Check PP for low suction press.	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 Reflash Panel Turbine Building 19'5" E1. (LATER)	QAD-660

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CORREL. WITH INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DPN OML 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 drop to cond. LCV-11-30A2 will open (IC-11-30A or IS-11-37A) 2. (A) Check WLV O/S and level locally (B) Operate LCV-11-30A1 & LCV-11-30A2 man, as necessary to control level.	1/2" below \bar{C}	IS-11-31A Level Switch 2A drain collector tank	OM-670 PID 2998-G-081 Sheet 2 of 2
DPN OML 2B LEVEL HI F-11	1. (A) 2B collector drain LCV-11-30B1 to 2-5B H.P. Htr. malfunction (P) 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 IS-11-37B) 2. (A) Check WLV O/S and level locally. (B) Operate LCV-11-30B1 & LCV-30B2 man, as necessary to control level.	1/2" Below \bar{C}	IS-11-31E Level Switch 2B drain collector tank	OM-670 PID 2998-G-081 Sheet 2 of 2
DPN OML 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 IS-11-37C) 2. (A) Check WLV O/S and level locally. (B) Operate LCV-11-30C1 & LCV-30C2 man, as necessary to control level.	1/2" Below \bar{C}	IS-11-31C Level Switch 2C drain collector tank	OM-670 PID 2998-G-081 Sheet 2 of 2
DPN OML 2D LEVEL HI F-27	1. (A) 2D collector drain LCV-11-30D1 to 2-5B H.P. Htr. malfunction (P) 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 IS-11-37D) 2. (A) Check WLV O/S and level locally. (B) Operate LCV-11-30D1 & LCV-30D2 man, as necessary to control level.	1/2" Below \bar{C}	IS-11-31D Level Switch 2D drain collector tank	OM-670 PID 2998-G-081 Sheet 2 of 2
DPN IFN IV 2A OML/THUP F-35	1. 2A Htr. dm. PP OMLD and/or tripped from excessive flow or pump/motor PP; failure. 2. (A) Motor Amps (B) Motor BKK Indicator Lights	1. Heater drain pump trips 2. (A) If PP tripped, verify RORR if applicable (B) Determine cause of overload (C) Start 2B Htr. drain PP if not already running.	(LATER)	74-1, 74-2 (LATER) 2A 416W SAKR BKK 2-20108	OM-625
DPN IFN IV 2A 2A THUP FLO 10/HTR LEVEL 10-10 F-43	1. (A) Htr. Drain PP diach. WLV malfunction (P) Lo level in 2-4A L.P. Htr. (C) Section strainer clogged 2. (A) 2-4A L.P. heater low level alarm (P) Pump PRK 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 Diach. WLV failed, manually operate WLV and restart PP if needed.	(LATER)	80 X KUCB-202	OM-625

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONDENSE. ROOM INDICATION WHICH VERIFY OR PENDING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MSR 2A LEVEL HI F-4	1. Increased level may be due to malfunction of LCV-11-32A 2. HI Level alarm from 2-4B L.P. Heater	1. LCV-11-32A opens drn 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 LCV's as necessary	3" above Base	IS-11-33A Level Switch 2A MSR	G4D-670 B&ID 2998-G-081 Sheet 2 of 2
MSR 2B LEVEL HI F-12	1. Increased level may be due to malfunction of LCV-11-32B 2. HI Level alarm from 2-4B L.P. Heater	1. LCV-11-32B opens drn 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 LCV's as necessary	3" above Base	IS-11-33B Level Switch 2B MSR	G4D-670 B&ID 2998-G-081 Sheet 2 of 2
MSR 2C LEVEL HI F-20	1. Increased level may be due to malfunction of LCV-11-32C 2. HI Level alarm from 2-4B L.P. Heater	1. LCV-11-32C opens drn 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 LCV's as necessary	3" above Base	IS-11-33C Level Switch 2C MSR	G4D-670 B&ID 2998-G-081 Sheet 2 of 2
MSR 2D LEVEL HI F-28	1. Increased level may be due to malfunction of LCV-11-32D 2. HI Level alarm from 2-4B L.P. Heater	1. LCV-11-32D opens drn 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 LCV's as necessary	3" above Base	IS-11-33D Level Switch 2D MSR	G4D-670 B&ID 2998-G-081 Sheet 2 of 2
HTR DRN PP 2B OVERLO/TTRIP 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 amps (B) HI amp condition	1. Htr. drain PP trip 2.(A) Verify RNEK if applicable when PP tripped (B) Start 2A htr. drn. PP if not running (C) Determine cause of overload	(LATER)	74-1, 74-2 2B2 4160V SWGR BRK 2-20307	G4D-626
HTR DRN PP 2B TRIP FLO LO/HTR LEVEL LO-LO F-44	1.(A) 2B htr. drain PP low disch. flow (B) Lo level in 2-4B L.P. heater 2. Loss of indicator lights and amps	1. Htr drain pump trip 2.(A) Check L.P. htr. 2-4B for lo level & correct valve. (B) If strainer blockage is indicated, isolate & clean strainer (C) If disch. vlv failed manually operate valve and restart pump if needed	(LATER)	80 X RTGE-202	G4D-626

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F 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
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 RTQB-202 (E) Inst. Air Comp. auto start alarm (C) Inst. Air Comp. Temp./OVERD 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. 2-1010030	HI-110 PSIG LO- 80 PSIG LO- 75 PSIG	ES-18-4 Inst. Air Comp. Cont. Cab Inst. Air Header	QAD-592 MSD 2998-G-085 Sheet 1 of 2
INSTR AIR CUMM 2A TEMP HI/ OVERD/TRIP F-13	1.(A) HI Temp. T.C.W. outlet from 2A Inst. Air Comp. (B) 2A Inst. Air Comp. HI Temp/OVERD 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 2F Comp. if 2A tripped (B) Inspect Comp. locally to determine cause of trip/alarm	160° 395°	(TS-13-40A, TS-13-41A)/592 Inst Air Comp. Jacket Coolers (TS-18-2A, 74)/593 Inst. Air Comp. Disc. Piping	QAD-592 QAD-593 Pail 2998-G-089
INSTR AIR COMPRESSOR 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	QAD-593 QAD-594
INSTR AIR CUMM 2F TEMP/HI OVERD TRIP F-29	1.(A) HI Temp. T.C.W. outlet from 2B Inst. Air Comp. (B) 2F Inst. Air Comp. HI Temp/OVERD Trip. (C) Control power fuse blown. 2.(A) Inst. Air Comp. auto start alarm (B) Inst. Air Low Press. alarm	1. 2F 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° 395°	(TS-13-40B, TS-13-41B)/592 Inst Air Comp. Jacket Coolers (TS-18-2B, 74)/594 Inst. Air Comp. Disc. Piping	QAD-529 QAD-594
SER TRIP/FAIL F-37	1.(A) Loss of power to printer (B) Loss of power to language processor unit (C) Loss of power to contact processor unit 2. Sequence of events recorder inoperable	1. NONE 2.(A) Energize printer if de-energized (B) Notify I & C that S.E.R. has failed	(LATER)	RA-RAB-17 Reflash Panel EAB 43° E1. (LATER)	QAD-1213
PRI WTR TK/ CST TK LEGAS LEVL HI/ VACUUM LO F-45	1. High level or not enough vacuum in Cond. Storage tank degasifier 2. NONE	1. High level; stops all running vacuum PPs for water slug. 2. Have Operator check locally: (A) HI Level; check level controls & transfer pumps, restart vacuum pump (B) Low Vacuum; ensure vacuum PP running normally, or start another	HI Level 8" 6" LO Vacuum 22" Mercury G	DUH, LMR Level/Vacuum, Switches CST Degasifier Package	QAD-1591 QAD-1595

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFIES OR PINPOINTS TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
STATION AIR PRESS HI/LO F-6	1.(A) HI Press-comp. not unloading (E) LO press-comp. has not loaded or line ruptured 2.(A) Station Air Press. Instr. (RTU-306)	1. NONE 2.(A) Have 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 rad. workers from hazards & remove air supplied equipment	HI: 120 PSIG LO: 80 PSIG LO: 75 PSIG	IS-18-14 Station Air Rec. Pressure Switch IS-18-15	OWD-592 H&ID 2998-G-085
STATION AIR COMPRESSOR TEMP HI/ OWLD/TRIP F-14	1.(A) HI temp. of air after entering cooler (B) HI temp. of TOW from comp. jacket or cooler (C) Overload condition or trip 2. LO press. in header	1. NONE 2.(A) Check temp. locally and adjust TOW as necessary (B) If tripped investigate cause (C) Attempt to reset HRC and restart	440°F TS-13-42 140°F TS-13-43 160°F	(TS-18-5(592)(r,t)/591 (LATER) (TS-13-42, TS-13-43/592 (LATER)	OWD-591 OWD-592 H&ID 2998-G-089
INST AIR CHILLER EMERG COOLING SYS OWLD TRIP F-22	1. Cooling Sys. Water PP or Cooling Fan OSLD 2. NONE	1. NONE 2.(A) Restore EMERG. Cooling (E) Restore TOW Cooling if possible (C) Stop Air Comp. if unable to restore cooling (refer to "Loss of Inst. Air" O/N Procedure No. 2-1010030)	(LATER)	74-1, 74-2 (LATER) 2AP HUC, 48NAC	OWD-1250
UNIT 1 & 2 INST AIR TIE OPEN F-30	1. Unit 1's INST Air supply press. has fallen to low enough press. to open the Unit 2 to Unit 2. Inst. air Press. Gauge PI-18-9.	1. At 70 psig the tie VLV will shut to prevent draining Unit 2 of Inst. Air. 2. Follow Loss of Inst. Air O/N Proc. No. 2-1010030	75 PSIG LOW	33/AC Limit Switch Unit 2 Tie Valve FCV-18-6	OWD-1249
MAINT WATCH 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	IS-18-42A IS-18-42B Pressure Switches Maintenance Switch	OWD-1230
WDP INST 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 as filters are clogged (C) Investigate possible leak and isolate	75 PSIG	IS-18-18 Pressure Switch Inst Air to Chem. Feed/ Misc. Service (local)	OWD-1007

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VERTICAL COLUMN 7

WIRE TITLE	1. INDICATED CONDITION 2. CONTROL WITH INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
FIRE ALARM (TRIP)	(LATER)	(LATER)	(LATER)	(LATER)	(LATER)
F-2					
PRIMARY WATER PRESSURE LO/LO	1. (A) Primary water PP Trip (P) Break in line 2. (A) PP Indicating lights (P) Primary water tank level 1. (A) HI Level in PMT (P) LO Level in PMT	1. Standby Primary Water PP starts on low 2. Follow Primary Water Sys. Q/N Procedure No. 2-1560000 1. NRE 2. (A) Fill PMT if necessary (B) If B. Core. low naming and level is low, check for proper ORS, if level high, stop water to PMT	BS BSIG	BS-15-7 Pressure Switch Primary Water Pump LS-15-9 Level Indicating RTCB-212	QAD-1017 P&ID 2998-G-1864
F-15					
PMT TEMP. HI/HI	2. Primary water tank level indication on RTCB-206		HI: 21 ft. Above Base LO: 18 ft. Above Base		QAD-851 P&ID 2998-G-1864
F-23					
H ₂ SEAL OIL FIRE SYSTEM TROUBLE/ LOZ ALARM (FF)	(LATER)	(LATER)	(LATER)	ZTSR, ZSR, CS/BS-2 Turb. Lubr oil/Reserv. & Conditioner/H ₂ Seal Oil/Fire Protection Local Control Panel F-YESR, F-YES, CS/BS-1-3	QAD-855
F-31					
LUBE OIL RESERV/ PIPING FIRE SYS TROUBLE/ LOZ ALARM (FF)	(LATER)	(LATER)	(LATER)	Turb. Lubr oil/Reserv. & Conditioner/H ₂ Seal Oil/Fire Protection Local Control Panel	QAD-855
F-39					
FW/OIL/ HTR DN LVS FIRE SYS TRIP	(LATER)	(LATER)	(LATER)	(LATER)	QAD-856
F-47					

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ST. LOUISE UNIT NO. 2
OFF-NOMINAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL F VENTILATION

MINI-TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FOLLOWING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING EQUIPMENT NUMBER & LOCATION	REFERENCE
FIRE PUMP RUNNING	(LATER)	(LATER)	(LATER)	52 R Unit 1, 400/400, HIC 1A2 & 2B2	QAD-852 Unit 1 SN 852 8770-b-327
TRANSFORMER HELIX OPERATING	(LATER)	(LATER)	(LATER)	UHS/1 Poln 307R 2A & 2L UHS/2 Am. 307R 2A & 2B UHS/2 S/L 307R 1A & 1B	
INSTR AIR ISOL. HCV-1B-1 CLAS CLOSE OVERRIDE	1. CLAS signal has been overridden to opes. Inst. Air Isol HCV-1B-1 2. HCV-1B-1 open with a CLAS signal present as indicated on RTU-206	1. N/A 2. Acknowledge alarm and presence of open flow path through the containment and shield bldgs. while a CLAS is present	CLAS Signal present with RTU-206 Gnt S4 take to close over- ride & then to open	3A/9A RTU-206 (LATER)	QAD-317
H ₂ SEAL OIL FIRE/ DEFICE OVER/ ICL ALARM OFF	(LATER)	(LATER)	(LATER)	2R, CS/855-5 Turb hibe oil/reservoir & Conditioner/H ₂ seal oil/fire prot., local cont., panel	QAD-855
LIFE OIL 850R/ PIPING FIVE/ DEFICE OVER/ ICL ALARM OFF	(LATER)	(LATER)	(LATER)	1-3R, CS/855-4-6 Turb hibe oil/reservoir & Conditioner/H ₂ seal oil/fire prot., local cont., panel	QAD-855
FW/OTRD/ PTR DFN PIS FIRE SYS OVER	(LATER)	(LATER)	(LATER)	(LATER)	QAD-856

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0010131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 1

W/NAME TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHEN VERIFY OK PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SIGNAL HI - 852 (increasing) Lo - 562 (decreasing)	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SC 2A LEVEL HI/LO	1. 2A steam generator level high or low (alarm only) 2.(A) Compare indications on all channels of indicators & recorders. (B) Check condensate pumps, MW pumps, etc. (C) Check feed reg flow rates & controls.	1. None, unless LVL continues to increase or decrease. 2.(A) Take Man. control of affected part of PW system, to control level. (B) If losing level; follow loss of S/C level Emergency Procedure 2-0700040. 1. None, unless level continues to increase or decrease. 2.(A) Take manual control of affected part of PW system, to control level. (B) If losing level; follow loss of S/C level Emergency Procedure #2-0700040.	HI - 852 (increasing) Lo - 562 (decreasing)	LIA - 905 S/C Level SLOW Indicators A, E, C, & D Channels (Safety) RTUB - 202	QAD-619 PS1D (later)
SC 2F IFV/L HI/LO	1. 2F S/C level high or low (alarm only) 2.(A) Compare indications on all channels of indicators & recorders. (B) Check condensate pumps, MW pump etc. (C) Check feed reg flow rates & controls.	1. None 2. Check PW PHS OIS parameters, noise, amps, temp., press., two operator check for excessive recirc. to condenser. leak or break in discharge line.	HI - 852 (increasing) Lo - 562 (decreasing)	LIA - 906 S/C Level SLOW Indicators A, E, C, & D Channels (Safety) RTUB-202 ES1-09-5	QAD-624 PS1D (later)
FW PP DESCH HIR PRESS LO	1. Low feedwater pump pressure to HP #5 PW heaters. 2. (A) Feedwater Header Discharge Pressure (DSD) PS1G (B) MW pump recirc valve position.	1. None 2. Check PW PHS OIS parameters, noise, amps, temp., press., two operator check for excessive recirc. to condenser. leak or break in discharge line.	850 PS1G decreasing	RTUB-202 ES1-09-5	QAD-603 PS1D (later)
AFAS CAPDET THRUPE	(LATER)	(LATER)	(LATER)	AFAS CAP-A, E, C, D AFAS Cabinet - behind RTUB-204	QAD-163B
AFAS-1/AFAS-2 PH/SS	(LATER)	(LATER)	(LATER)	AFAS CAP - A, E, C, D AFAS Cabinet - behind RTUB-204	QAD-163B
SC 2A/2F ABM STH IFV WAS SS F/L	1. Control of MW-08-19P, and/or 18A atmospheric dump valves has been isolated from the Control Room by MW/ES/L switch. 2. Loss of control switch lights.	1. Loss of control from Control Room. 2. Return MW/ES/L switch to "NORMAL". If applicable, in cable spreading room.	MW/ES/L switch in "ISOLATE" (one or both)	SS-1/603/654 SS-2/603/654 (MW/ES/L Switches) Cable Spreading Room - Isolate Panel.	QAD-603

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUPPLEMENT

ANNUNCIATOR PANEL G 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	SEVERING ELEMENT NUMBER & LOCATION	REFERENCE
FWP 2A SECTION PRESS LO TRIP G-2	1. 2A Main feedwater pump has tripped on low suction pressure from: (A) Loss of condensate pump, or ltr drain pump. (P) Suction strainer plugged. 2. (A) MFW pump breaker indication - green. (P) Feed 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 HWP. (P) Verify RRRK to <60% power, if applicable (C) Follow loss of S/G FW Emergency Procedure 2-0700040.	350 PSIG decreasing (later - time delay)	(74-3, 62X/RRK) / 615 (42/34, IS-42-15A) / 616 ----- (later)	Gd-615 Gd-616
FW FP 2A FLO LO/ HRC OIL LP/ CP INTLK TRIP G-10	1. 2A main feedwater pump has tripped from: (A) Low feed water flow. (P) 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 RRRK to <60% power, if applicable (P) Start other MFW FP or Cond. FP if available. (C) Follow loss of S/G FW Emerg. Proc. No. 2-0700040.	(A) (B) (later) (C) (time delayed too)	74-3, 62X/RRK ----- (later)	Gd-615
FW FP 2A OVERLOD/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 or out.	1. (A) MFW pump trip (B) Turbine runback if >60% power. 2. (A) Verify RRRK to <60% power, if applicable. (B) Start other MFW FP if available (C) Follow loss of S/G FW Emerg. Proc. No. 2-0700040.	Thermal Overload or time depend- trip	74-1, 74-2 Thermal overload and time dependent O.C. relay in breaker. ----- 2-30103/2A1-6, 9KV Bus	Gd-615 ID 7 HD Sheet 1
FW FP 2A FLO LO G-26	1. 2A main feed PP recirc MVS not providing sufficient recirc flow for present pump flow. (A) Not controlling recirc flow correctly, (P) Main feed flow (C) # of feed pumps vs unit MW load.	1. Recirc MVS should open to provide at least (LATER) GIN flow through pump. 2. (A) Check # of feed pumps vs unit load. (B) Check stability of main feed flow. (C) Have operator check recirc MVS locally if not responding.	(LATER)	PS-09-1A1, 62Y ----- (LATER)	Gd-615
FW FP 2A HRC OIL PRESS LO/ RESERVE ROTN G-34	1. 2A main feed pump: (A) Low bearing oil header pressure. (P) HL HRC oil suction press. indicative of reverse pump rotation. 2. (A) Aux oil pump indicator lights - green.	1. Aux oil PP should start on lo HRC 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.	Lo Press - (LATER) Rev rotation 35 PSIG oil press.	62Y/615 63X/618 IS-09-9A3 ----- (LATER)	Gd-615 Gd-618
FW FP 2A HRC TEMP HI G-42	1. HL HRC Temp. on one or more FP or motor HRC of MFWP. 2. Check condition/alerts of TCM system.	1. None 2. Have operator locally check pump: (A) lube oil flow from bearings. (P) TCM 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-09-0-1A1/1A2 ----- Alarms from Temp. Ind. on local FP Monitor Inlet	Gd-628

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C 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
PWP 2B SUCTION PRESS LO TRIP G-3	1. 2B MFW PP has tripped on lo suction press. from: (A) Loss of running cond. or HTR Drain PP. (B) Suction Strainer plugged 2.(A) MFW PP HTR indication - green. (B) Feed pump suction pressure gauge.	1.(A) MFW pump trip. (B) Turbine runback if >60% power. 2.(A) If MFW has <u>NOT</u> tripped, start standby Cond. or HTR drain PP if available. (B) Verify runback to <60% power. (C) Follow loss of S/G FW Emer. Proc. No. 2-0700040.	350 PSIG decreasing	(74-3,62X/TUC) / 620 (52/HOC, IS-12-15B)/621	G&D-620 G&D-621
FW PP 2P FLOW LO/ HRC OIL PP/ CP INTLK TRIP G-11	1. 2B main 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) Main feed flow.	1.(A) Main feed pump trip. (B) Turbine runback if >60% power. 2.(A) Verify RHRK 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. 2-0700040.	(LATER)	74-3,62X / TDO	G&D-620
FW PP 2P OWHD/TRIP G-19	1. 2B Main 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 or out.	1.(A) MFW pump trip (B) Turbine runback if >60% power. 2.(A) Verify RHRK to <60% power, if applicable (B) Start other MFW if available (C) Follow loss of S/G FW Emer. Proc. No. 2-0700040.	Therm OVERD OR TIME Dependent TRIP	74-1, 74-2 Thermal overloads and time dependent O. C. relay in breaker 2-30203/6900N-2B1	G&D-620 PD & MD Sheet 1
FW PP 2B FLO LO G-27	1. 2B Main Feed PP recirc VMS not providing sufficient recirc flow for present pump flow. (A) Not controlling recirc flow correctly. (B) Or, large fluctuations in main feed flow. (C) Too many feed pumps on, for present unit load 2.(A) Recirc valve position indicators. (B) Main 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 main feed flow. (C) Have operator check recirc valve	(LATER)	FS-09-1B1 & 6ZY	G&D-620
FW PP 2B HRC OIL PRESS LO/ REVERSE ROTN G-35	1. 2B Main Feed pump: (A) Low bearing oil header pressure. (B) HL HRC oil Suct. press. indicative of reverse PP rotation. 2.(A) Aux oil pump indicator lights - green.	1. Aux oil PP should start on lo HRC 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.	Lo Press - (LATER) Rev Rotation 35 PSIG oil press.	62Y/620 63X/623 IS-09-0E3	G&D-620 G&D-623
FW PP 2B HRC TEMP HI G-43	1. High HRC Temp. on one or more pump or motor HRC of MFWP. 2. Check condition/alarms of TOW system.	1. None 2. Have operator locally check pump: (A) Lub oil flow from bearings. (B) TOW flow to heat exchanger (C) Local bearing temp indicators	185° F (increasing) on any bearing	TIS-09-7-1B1/1B2 TIS-09-8-1B1/1B2 TIS-09-0-1B1/1B2 Alarms from Temp. Ind. on Local PP Monitor Panel	G&D-628

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ST. LOUISE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISED FOR 1
PLANT ANNUNCIATOR SUMMARY

APPENDIX 1902. C. VERTICAL COLUMN 4

WIREMAN TITLE	1. INDICATED CONDITION 2. ORIGINAL WITH INDICATION WHICH VERIFY OR FINDING TRAP	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
PLANT 2A & 2B STRAINER Δ/P HI	1. Plugged section strainer on 2A or 2B MWP 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 50%, (C) Remove MWP from SVC, to clean strainer	(LATER)	RA-7-5/Ref flash PWS-12-51A & 51F Strainer D.P. Ind. (LATER)	QAD-660
APM TO SC 2A MWS MWP OVERLOAD / AFAS OVERLOAD	1. One or more of the following values: (A) 2A APM to 2A S/C MW-09-9 (B) 2B APM to 2A S/C MW-09-14 (C) 2C APM to 2A S/C MW-09-11 Has * tripped on OVERLOAD, * MWP 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 MWP motor BKR trips; check BKR locally to verify Elect. Dpt. If necessary (B) If AFAS override; (LATER)	Therm. OVERLOAD Trip OR 8 Amp O.C. Trip (LATER AFAS)	RA-6T-1/Ref flash Thermal overloads and O.C. trip coil in bars 2-41209/MS-215/CSHA 2-42063/MS-205/CSHA 2-60977/MS-255/ -0.90AB	QAD-1638 PD & PD Sheet 33, 40, 69
CONDUCTIVITY CURVE/SLOPE HI	1. Seawater leaking into condenser as indicated by: (A) HI-chloride (cation conductivity); from CP-12-200 behind RTD. (B) HI-sodium content in condensate; from sodium analyzer. 2. Conductivity recorder CP-12-100 behind RTD-202 room.	1. None 2.(A) Notify Quality Department immediately (B) Follow condenser tube leak O/N Proc. 2-0120061, and S/G Chem. Out-of-Limits O/N Proc. 2-0120038.	0.5 tri- cation conductivity 10 PPM sodium content	QAD ANALYZER Conductivity Recorder 625-06 sodium analyzer / rec. CP-12-100; behind RTD-202, NA analyzer Gold Lab.	QAD-600 QAD-607
APM PP 2A OVERLOAD/Trip	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 APM PP Aups, BKR indicate Lights-out or green (B) 2A APM HER, flow and pressure. 1. low sodium pressure to 2A APM pump from; (A) Momentary large increase in feed rate, (B) Or, low-level in CST. 2.(A) CST level indication (B) Feed rate	1. 2A APM pump trips. 2.(A) Use 2C APM PP to feed 2A S/G if necessary (B) Investigate cause for pump overload.	Therm. OVERLOAD OR TDE Dependent O.C. Trip	Thermal OVERLOADS and Time Dependent O.C. Relays in BKR 2-2012/2A3-416W has IS-12-17A suction pressure SH 2A APM PP Section Sides	QAD-629 PD & PD Sheet 4
APM PP 2A SUCT/HER PRESS LO	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 APM PP has been EOL from Control Room by MWS/ESOL SH. 2.(A) Failure; pump indicate Lights - green. (B) Failure; pump indicate Lights - out.	1. None 2.(A) Increase in feed; insure alarm clears momentarily, or reduce feed rate. (B) CST low; have operator start make-up	3.0 ISIG	IS-12-17A suction pressure SH 2A APM PP Section Sides	QAD-629
APM PP 2A BKR FAILURE / CS STOP/ SS EOL	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 APM PP has been EOL from Control Room by MWS/ESOL SH. 2.(A) Failure; pump indicate Lights - green. (B) Failure; pump indicate Lights - out.	1. If isolate; loss of control from control room 2.(A) Investigate BKR failure locally, contact Elect. Dept. for assistance (B) Return MWS/ESOL SH to "BKR" if applic.	Start Signal >5 sec w/ Bkr open MWS/ESOL SH In "ISOLATE"	SS/ESOL, 74-3, CS/629 FF 608 2-20217 416W has 2A3 and 4444/ESOL SH Cable Spreading Room	QAD-629

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ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 5

WIREWIRE TITLE	1. INDICATED CONDITION 2. ORIGINATOR INDICATION WHICH VERIFY OR PINPOINT TRIGGER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
APW PP 2A/P/C STRIP 2A/P/C Δ/P 111 G-5	1. One or more low feed pump suction strainers Indication dirty N4 id-o/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) HI	RA-40E-5 Reflash From PDS-12-52A, E, C Strainer D/P Switches (LATER)	QMD-644
APW PP 2B WAS MTB OMDL/ WAS OMDL	1. One or more of the following values: (A) 2B APW to 2B S/C MW-09-10 (B) 2A APW tie to 2B S/C MW-09-13 (C) 2C APW to 2B S/C MW-09-12 Has * tripped on overload, * BEK turned off, * lost control power, * or WWS (later) (WAS LATER) 2. (A) Respective valve Ind. Lights - out. (P) (WAS later)	1. None 2. (A) IF WWS motor BEK trips; check BEK locally, notify Elect. Dept. if necessary (P) IF WWS override; (LATER)	Therm. OMDL Trip OR 8 Asp O.C. Trip	RA-6T-2 Thermal overloads and O, C, trip coil in bars 2-41210/MC-2A5 2-4362/MC-2E5 2-60952/DCP-254	QMD-11639 HD & MD Sheets 33, 39, 69E
APW PP 2C LINE OIL TRIP 110 G-13	1. Low lube oil temp in 2C APW PP lube oil system (heater not functioning properly) 2. None	1. None 2. Issue operator check temp. on 2C APW PP and check ltr power supplies.	(LATER)	TS-2 Temp. Switch 2C Aux. Feed Pump Lube Oil System 74-1, 74-2	QMD-631
APW PP 2B OMDL/TRIP G-29	1. (A) 2B Aux feed pump has tripped on motor overload (P) Or, has been racked-out, (C) Or, has lost control power. 2. (A) 2B APW PP amps, BEK Ind. Lights - out or green (B) 2B APW header, flow and pressure.	1. 2A APW pump trips 2. (A) Use 2C APW PP to feed 2B S/C if necessary (P) Investigate cause for PP overload.	Therm. OMDL Trip OR Time Dependent O, C, Trip	Thermal OMDL and Time Dependent O.C, BEK In BKK 2-20412/4160N-2B3	QMD-630 PD 6 MD Sheet 5
APW PP 2B SECTION POSS 110 G-37	1. Low suction pressure to 2B APW pump from; (A) Manually 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; issue alarm clears manually, or reduce feed rate. (B) CST low; have operator start make-up to CST.	3.0 BSIC	PS-12-17B Section Pressure Switch 2B APW Pump Section Side	QMD-630
APW PP 2B PPR FAILURE/ CS STOP/ SS STOP G-45					

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMN 6

WIREWIT TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FINDING TRIGGER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ORIO PP 2C BEARING TRIP HI	1. Thrust WGT temp. hd 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 running pump	(LATER)	TIS-12-27-1C1, 1C2 (LATER)	QMD-219
SC 2A/2P TO APWP 2C VLV5 W/O CLOSE/APAS OMPH/SS ESOL	(LATER)	(LATER)	(LATER)	RA-6T-3 (LATER)	QMD-638
R CST N ₂ PLANKET 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 HIHI pressure. 2. (A) Verify N ₂ Disump (B) Insure alarm not caused by sudden increase or outflow of water. (C) Check loop seal and tank vent supply water in service.	Lo-(alarm) 1.0" h ₂ OC HI-(shut V.) 5.8" h ₂ OC HI-HI-Alarm 6.0" h ₂ OC	IS-29-4-1/Lo IS-29-4-2/HI HI Pressure switches Mounted on Concentrate Tank	QMD-743
APW PP 2C STRAI PRESS LO	1. Low STM Press. In 2C APW PP STM supply header. 2. 2A APW PP apply STM press. Indicator PI-08-5, R028-202.	1. None 2. (A) If 2A or 2B Elec. APW PIs available, switch over to elec. pumps. (B) If not available, use of 2C STM PP is acceptable, as long as STM Press > 90 PSIG	740 PSIG	IS-08-6	QMD-631 R010
APW PP 2C SUCTION PRESS LO	1. Low suction pressure to 2C APW pump from; (A) Momentary large increase in feed rate, (B) OR, low-level in CST. 2. (A) CST level indication (F) Feed Rate	1. None 2. (A) Increase in feed; Insure alarm clears immediately, or reduce feed rate. (B) CST low; have operator start make-up to CST	3.0 PSIG	IS-12-1/C Suction pressure Switch ----- 2C Aux Feed IS-43-ESOL Switch QWP-1, OR 7 2/failure	QMD-631 R010 2996-6-000 (2 of 2)
APW PP 2C TRIP FAIL/TRIP/ CS ESOL	1. (A) 2C APW pump failure/trip (later explanation of inputs) (B) OR, MML/ESOL 3d has ESOL 2C APW from Control Rm 2. (A) Failure; pump Ind. Lights - green, (B) Isolate; pump Ind. Lights - out.	1. FAILURE; 2C APW will trip. 2. (A) FAILURE; wait 3 min. for governor, then take MW-(08- K.Sa. to GISE then open, pump will react & restart. (F) ISOLATE; return MML/ESOL 3d to "TRIP" if applicable.	(LATER) failure) NPH/ESOL 3d to ESOL	2C Aux Feed Control Panel and ESOL Panel	QMD-631

ST. LUCIE UNIT NO. 2
OFF-NORMAL PROCEDURE NUMBER 2-000131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL C VERTICAL COLUMNS 7

WIREW TYPE	1. INDICATED CONDITION 2. CORREL. FROM INDICATION WHICH VERIFY OR PINPOINT TRAP/IE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
COND PP 2A/ZC CABLED/TEMP	1. The 2A or ZC Cond. PP on the 2A BRC has tripped on overload. 2. (A) Pump amps, flow, pressure. (P) Hx indicate lights - out.	1. (A) Associated 2nd feed pump trip if 2 cond. pumps running. (B) Turbine runback to 60% if Hx/PP trips 2. (A) Ensure BRC, & stabilize plant if applc. (B) Check PP out local ly-cooler supply to other 2A/ZC pump.	Therm. ON/OFF trip or Time Dependent O.C. Trip	Therm. ON/OFF & Time Dependent Relays in BRC 2-3107/416N-2A2	OM-60, PD 7 HD Sheet 3
G-7					
COND PP 2A HEARINGS TEMP	1. H temp. on 2P Cond. PP motor guide or 25-out BRC 2. None	1. None 2. (A) Have operator check BRC temps. locally check TM flow. (P) Remove PP from SWC if temp. exceeds (LATER) 90 F.	Not Determined (LATER)	TIS-12-27-1A1, 1A2 Bearing Temp. Switch 2A Condensate Pump	OMD-219
G-15					
COND PP BRC CLO WTR FLO	1. Low TM flow to Cond. PP BRC present on 2A, 2P, or ZC Cond. PP. 2. None	1. None 2. Have operator check Reflash Panel & adjust Alarming Pump's TM flow.	Not yet determined (LATER)	RA-T-6/Reflash From TM flow Switch FIS-13-21A, B, C	OMD-1007
G-23					
COND PP 2A/P/C RECIRC FLO	1. Cond. PP output flow low, and recirc. flow is insufficient on (2A, 2P and/or ZC pumps) 2. Respective pump recirc valve pos. indicator lights	1. Recirc W/V should open when PP flow is < 2500 GPM. 2. (A) Ensure recirc valve open. (B) Ensure # of Cond. PPs running constant with Cond. system load.	<80% Recirc. Flow Myle Pump In. Recirc.	2, 2-1, PS-12-66/C/A Acoustic Flow Detectors Cond. Pump Recirc Lines	OMD-604 OMD-606
G-31					
GST LEVEL HI	1. Condensate tank has been over filled. 2. CST level gauges	1. ICV - should close when level reaches 2. Have operators stop CST fill, and/or isolate ()	44" 5" CST Level High	IS-12-8 Level Switch	OMD-743
G-39					
GST LEVEL LO	1. Condensate tank level has fallen below 33 feet. 2. CST level gauges	1. ICV should regulate level normally between alarm points. 2. (A) Initiate fill to CST. (B) Consult Tech Spec to ensure adequate	33" CST Level Low	Condensate Tank IS-1-8 level Switch	OMD-743
G-47					

WHEM TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PENDING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	STATUS ELEMENT NUMBER & LOCATION	REFERENCE
COND PP 2P/2C OVERD/Trip	1. The 2P or 2C Cond. PP on 2B HX tripped on OVERD 2. (A) Pump amps, flow, pressure. (P) HX indicate lights - out	1. (A) Associated 2nd feed PP trips if 2 Cond. pumps running. (B) Turbine runback to 002 if HAP trips. 2. (A) Ensure RNR & stabilize plant if applic. (B) Check pump out locally-condenser looping to other 2B/2C pump.	Therm. OVERD Trip or Ther. Dependent O.C. Trip	Thermal overloads and time dependent relays 2-2037/416N-2B2	QMD-606 PD & MU Sheet 4
COND PP 2B BEARING TEMP HI	1. HI temp. on 2P cond. PP thrust or guide BGC. 2. None	1. None 2. (A) Have operator check BGC temps locally - check TBM flow (E) Remove pump from service if temp. reaches (LATER) O F.	Not Determined (LATER)	TES-12-27-1B1, 1B2 H8. Temp. Switch	QMD-219
COND PP 2A/P/C STRAINER Δ P HI	1. HI DIFF. Press. across 2A, 2B, or 2C Cond. PP suction strainer, indicating pluggage 2. NRE	1. NRE 2. (A) Check strainer D.P. locally. (B) Follow Cond. Sys. Operating Procedure 2-(LATER) for strainer removal from SW.	14" Water Differential Pressure	RA-T-6/Ref Lush From PDS-12-53A, B, & C Strainer D.P. SM. Condensate Pump Suction Strainer	(M)-666 P&ID 2998-6-08D (1 of 2)
PP IV SPAL LEAKOFF TK LEVEL HI/LO	1. HI or Lo level In feed PP leak-off collection tank 2. Low vacuum in Cond. could impede tank draining ability.	1. LCV-12-21 should open & close to regulate level between alarms setpoints. 2. (A) Check condenser vacuum. (B) Check OPS of drain VLV & SVS alignment locally.	Lo - 4" HI - 8" from Tank Base	LES-12-22 Tank Level SM Main PP PP Leak-Off Collection Tank	QMD-628 P&ID 2998-6-091
HOTWELL LEVEL HI/LO	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 opens if undisolated (B) Low Level - Hotwell sprays - open. (C) Lo-Low Level - Ig. Makeup VLV opens. 2. Take appropriate action to return NAL (A) Open/close NBT vacuum drag. (B) Check Hotwell sprays locally. (C) Check Hotwell sprays locally.	Lo - 25" HI - 43" From Hotwell Rise	IS-12-24/Lo IS-12-3/HI IS-12-24/Lo Level Switches (2, 3)/2B, (24)/2A Condenser Hotwell	QMD-741 P&ID 2998-6-08D (1 of 2)
COND TD HPS 2A & 2B FLO LO	1. Lo Cond. flow through SWE/GSC cond. 2. Lo vacuum, low cond. flow	1. Cond. recirc. VLV (LATER) should maintain recirc. flow >500 GPM. 2. (A) Check LCV (LATER) (B) Check VLV Inloop per Cond. Operating Procedure No. 2-(LATER)	<7500 GPM Header Flow	FS-21-1 Flow SM Off Flow RNR 12-1	QMD-1007 P&ID 2998-6-08D (1 of 2)

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
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
TM/LP SETPOINT HI/LO QNB A H-1	1. Indicates problem within core protect calculator as generated setpoint has exceeded it's operating band. 2. TM/LP setpoint meter PIA-1102 on RPB-203.	1. Could generate 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.	HI-2375 PSIA Lo- 190 PSIA	PIA-1102 TM/LP Setpoint Meter RPB-203	QND-372 Instrument List
PZR CHNL X PRESS HI-LO H-9	1. Indicates HI/Lo press. transient in excess of capability of press. control system. 2.(A) Compare all channels of PZR press. indications (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 O/N Normal Procedure No. 2-010035.	HI-2340 PSIA Lo-2100 PSIA	PA-1100R Pressure Alarm Bistables Pressure Control Circuitry (RCPB-203)	QND-97 Instrument List
PZR CHNL X LEVEL HI-LO H-17	1. Indicates HI/Low pressurizer level in excess of capability of level control system. 2.(A) Compare all channel sof PZR level indications. (B) Check charging pumps and charging/letdown flow	1.(A) PZR level controls should control PZR level to RPS setpoint. (B) All htrs will be lost if level decays to 27% actual PZR level. 2. Follow PZR press. & level O/N Proc. No.	HI > + 10% Lo < - 5% PZR Level error from RPS Setpoint	LA-11100H 63X/LA-11190EL Alarm Bistables Level Control Circuitry (RCPB-203)	QND-139 RCS Training Lesson Plan
BLANK H-25	BLANK				
BLANK H-33	BLANK				
BLANK H-41	BLANK				

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ST. LOUISE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 2

MINOR TITLE	1. INDICATED CONDITION 2. CRITICAL REPR INDICATION WHICH VERTICALLY OR PLANNING THERE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TH/LP SETPOINT HI/LO QIB-8	1. Indicates problem within core protect calculator as generated setpoint has exceeded it's normal operating band. 2. TH/LP setpoint meter PIA-102B on RT2B-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-2375 PSIA LO-1900 PSIA	TH/LP Setpoint Meter PIA-102B RT2B-203	QAD-373 Instrument List
PZR QIB-9 PRESS HI-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; Hrs and spray.	1. (A) No Hrs, full spray @ 2325 PSIA (B) All Hrs on full by 2200 PSIA Dec. 2. Follow Pressurizer Press. & Level Off Normal Procedure 2-012035.	HI-2340 PSIA LO-2100 PSIA	PA-1100Y Pressure Alarm Bistable Pressure Control Circuitry (RT2B-203)	QAD-98 Instrument List
PZR QIB-9 LEVL HI-10	1. Indicates HI/LO PZR level in excess of capability of press. control system. 2. (A) Compare all channels of PZR level indications (B) Check charging pumps and clanging/leakdown flow	1. (A) PZR level controls should control PZR level to RCS setpoint. (B) All heaters will be lost if level decays to 27% actual PZR level. 2. Follow Pressurizer Press. & Level O/H 2-012035	HI > + 10% Lo < - 5% PZR Level error from RCS Setpoint	IA-1100H 6X/1A-1100H Alarm Bistables Level Control Circuitry (RT2B-203)	QAD-139 Instrument List
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PRV 1474 LTOP QIB-10 SELECT LTOP	1. RCS temp. has decreased to a range where the RWVs required to be in LTOP position. 2. (A) RCS pressure indicators. (B) RCS T-Cold indicators.	1. None - (Informational Alarm Only) 2. Select "LTOP" position on PRV V-1474 Mode select SW, as per steps in RCS Cooldown Procedure	291°F Dec. T-Cold with PWR Mode sel. in "NORMAL"	68X/1474 6X/1476 6X/1115 CIRCUITS RT2B-203	QAD-1629 PSAR 5.2-28
PRV 1474 NEAR QIB-11 SELECT NEAR	1. RCS temp. has increased to a range where RWVs required to be in "NEAR" position. 2. (A) RCS press indicators. (B) RCS T-Cold indicators. (C) PRV Mode select switch position.	1. None - (Informational Alarm only) 2. Select "NEAR" position on PRV V-1474 Mode select SW, as per steps in RCS Heat-Up Procedure	290°F Inc. T-Cold with PWR Mode select in "LTOP"	68X/1474 6X/1476 6X/1115 CIRCUITS RT2B-203	QAD-1629 PSAR 5.2-28

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CRITICAL ROOM INDICATION WHICH VERIFY OR PENDING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TM/LP SETHPOINT HI/LO QWB, C H-3	1. Indicates problem within core protect calculator as generated setpoint has exceeded it's normal operating band. 2. TM/LP setpoint meter PIA-1102C on RCB-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-2375 PSIA LO-1900 PSIA	PIA-1102C TM/LP Setpoint Meter RCB-203	QAD-374 Instrument List
PRZR SFTY RELF V-1200 DISCH TEMP HI H-11	1. PRZR safety VLV V-1200 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 and alarm (IC-1)	1. None 2. Follow Pressurizer Safety/Relief Valve O/N Procedure No. 2-0120036.	120°F	TIA-1107 Safety Tailpipe Temp Indicator RCB-203 SIGMA	QAD-134 Instrument List
PRZR SFTY RELF V-1201 DISCH TEMP HI H-19	1. PRZR safety VLV V-1201 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 and alarm (IC-1)	1. None 2. Follow Pressurizer Safety/Relief Valve Off Normal Procedure #2-0120036.	120°F	TIA-1108 Safety Tailpipe Temp Indicator RCB-203 SIGMA	QAD-135 Instrument List
PRZR SFTY RELF V-1202 DISCH TEMP HI H-27	1. PRZR safety VLV V-1202 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. None 2. Follow Pressurizer Safety/Relief Valve Off Normal Procedure #2-0120036.	120°F	TIA-1109 Safety Tailpipe Temp Indicator RCB-203 SIGMA	QAD-135 Instrument List
FORV 1474 TEST/OVRD H-35	1. FORV 1474 is in the "TEST" or "OVERRIDE" position 2. FORV-1474 switch position.	1. FORV operation is disabled with switch out of "OFF" (normal pos.) 2. Return FORV Override/Test switch to "OFF" if applicable.	Switch out of "OFF" Position	HS-1474-2/1629 FORV Override/Test Switch RCB-203	QAD-1629 FSAR 5.2-27
LTUP CIRCUIT A TRANSPARENT H-43	1. Lo temp/hi press. transient may be occurring in RCS needing immediate attention. 2. RCS temperature & pressure indicator.	1. FORV 1474 will open IF; (A) Mode select Sw. in LTUP, (B) T-Cold < 325°F, (C) And, RCS press > 490 PSIG 2. Immediately take steps to reduce RCS press.	Tc < 280°F or Sw in "LTUP" with 1105 & 1106 pressure > 490 PSIG	6BX/1474 6X/T-1115 P-1103, P-1104 LTUP Circuitry RCB-203	QAD-1639 FSAR 5.2-28

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 4

MINIMUM TITLE	1. INDICATED CONDITION 2. OTHER REASON INDICATION WHICH VERIFY OR PENDING TRIGGER	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
TRV/LP SECTION HI/LO CHL D	H-4 1. Indicates problem within core protect calculator as generated setpoint has exceeded it's normal operating band. 2. TRV/LP setpoint meter PIA-1102D on RT2B-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-2375 PSIA LO-1900 PSIA	PIA-1102D TRV/LP Setpoint Meter RT2B-203	QAD-375 Instrument List
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PRV 1475 RELIEF LINE TEMP HI	H-12 1. PRV-1475 open or loading 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 LC-1	1. None 2. Follow PRZR Safety/Relief VLV n/n Procedure No. 2-0120036.	120°F	TIA-1306 PRV Tailpipe Temperature Indicator RT2B-203 SIGNA	QAD-134 Instrument List
PRZR SURGE LINE TEMP LO	H-20 1. PRZR surge line temp. low due to: (A) Immersion 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 RT2B-203 SIGNA	QAD-134 Instrument List
PRV 1474 RELIEF LINE TEMP HI	H-28 1. PRV-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 #2-0120036.	120°F	TIA-1110 PRV Tailpipe Temperature Indicator RT2B-203 SIGNA	QAD-135 Instrument List
BLANK	BLANK				
H-44					

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

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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
LOOP 2A HOT LEG TEMP HI 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) Assume valid alarm. (B) Reduce RCS temp. using boron addition or CEA insertion.	610°F High T-HOT	TIA-1111X 2A Hot Leg Temp. SIGMA Indicator RTCB-203	QAD-136 Instrument List
LOOP 2B1 SPRAY LINE TEMP LO H-13	1. PRZR spray line from 2B1 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-1104 (B) Pressurizer 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. >150°F.	515°F Low	TIA-1103 2A Spray Line Temp. SIGMA Ind. RTCB-203	QAD-133 Instrument List
SG 2A SNDR OIL RSVR 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	QAD-461
PRZR PROPN HTCS LO LVL TRIP/ SS ISOL H-29	1.(A) Proportional htrs have been tripped off by 27% low PRZR level, (B) Or, back-up htrs have been isolated from Control Room by Normal/Isolate Sw. 2. Back-up heater control switches indicate lights-	1. Loss of proportional heater control. 2.(A) Follow PRZR Press/Level O/N Proc. No. 2-0120035. (B) Return Norm/Isol SW to "NORM" if applic.	27% Actual PRZR Level NORM/ISOL SW IN	74-Alarm Contact in level Control Circuitry PRZR Level Controls RTCB-203	QAD-122 QAD-123
PRZR HEATERS LVL/PRESS INTLK (OVRD) H-37	1. The hi press./Lo-to lvl. htr. cut-off sys. has been partially or totally disabled by operator action 2. Backup interlock bypass keyswitch position.	1. Ability to regain & control PRZR Htrs. 2. Follow PRZR Press/Level O/N Procedure No. 2-0120035.	Backup Interlock Bypass SW Out of "LOCKED OFF" Position	HS-124 Backup Interlock Bypass Key Switch RTCB-203	QAD-122
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OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

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ANNUNCIATOR PANEL H 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 2B HOT LEG TEMP HI 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 RT2B-203	OMD-137 Instrument List
LOOP 2B2 SPRAY LINE TEMP LO H-14	1. PEZR 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) PEZR spray line temp indicator TIA-1104 (B) PEZR 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. >350°F.	515°F Low	TIA-1104 2B2 Spray Line Temp SIGMA Ind. RT2B-203	OMD-133 Instrument List
S/G 2B SNBR OIL. RESVR 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	OMD-461
PEZR B/U HTCS LO LVL. TRIP/ SS ISOL H-30	1.(A) Backup htcs. have been tripped off by 27% low PEZR level, (B) Or, back-up htcs have been isolated from Control Room by Normal/Isolate Sw. 2. Back-up htr control switches indicate lights - out	1. Loss of backup heater control 2.(A) Follow PEZR Press/Level O/N Proc. No. 2-02120035, (B) Return Norm/Isol SW to "NORMAL" if applic	27% Actual PEZR Level NORM/ISOL SW in "NORMAL"	74-Alarm Contact In Level Control Circuitry PEZR Level Controls RT2B-203	OMD-124 OMD-129
PORV 1475 LTOP CONDIN SELECT LTOP H-38	1. RCS temp. has decreased to a range where the PORVs required to be in LTOP position. 2.(A) RCS pressure indicators. (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/T1125 CIRCUITS RT2B-203	OMD-1630 FSAR 5.2-28
PORV 1475 NORM CONDIN SELECT NORM H-46	1. RCS temp. has increased to a range where PORVs required to be in "NORMAL" position. 2.(A) RCS pressure indicators. (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 T1125 CIRCUITS RT2B-203	OMD-1630 FSAR 5.2-28

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PENDING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 2A2 COLD LEG TEMP HI 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 538°F, by location of CEA insertion.	556°F HI T-Cold	63X/TIC 1111Y Temp. indicating SIGMA RIG2-203	QMD-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	PS1118 Press. Switch On Line From Rx Vessel To Switch/Gauge Outside Bio-Shield	QMD-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	LPM5 QML PNL Alarm Output Rly Loose Parts Monitor Panel Behind RIG2-202	QMD-1212
BLANK H-31	BLANK				
PORV 1475 TEST/OVERRIDE 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	IES-1475-2/1630 PORV Override/Test SW RIG2-203	QMD-1630 PSAR 5.2-27
LOOP CIRC. B TRANSIENT H-47	1. Low temp/HI press. transient may be occurring in RCS needing immediate attention. 2. RCS temperature & pressure indicators.	1. PORV 1475 will OPEN IF; (A) Mode select SW in LTOP, (B) T-Cold <125°F. (C) And, RCS press >490 PSIG 2. Immediately take steps to reduce RCS	TC <280°F OR SW in "LTOP" WITH 1105 & 1106 Pressure	63X/1475 63X/11125 PC-1105, PC-1106 LTOP Circuitry RIG2-203	QMD-1630 PSAR 5.2-28

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL H VERTICAL COLUMN 8

MINIM TITLE	1. INDICATED CONDITION 2. OPERATOR ACTION - VALID ALARM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
LOOP 202 COLD LBS TEMP HI H-8	1. Loop 202 cold leg temp. has risen above Tech Spec. T-Cold Unit. 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 HI T-Cold	63X/TIC-1121V Temp. Indicating Alarm/SIGMA RUCB-203	QAD-137 Instrument List
QUENCH TANK PRESS HI H-16	1. HI quench tank temp. (near bottom of tank) 2. Quench tank pressure indicator on RUCB-203.	1. None, unless press. increases to Q.T. Safety Pressure of 75 PSIG. 2. Follow Quench Tank Normal Operating Procedure 2- (LATER)	15 PSIG HI	TIA-116 Pressure Indicating Alarm/SIGMA RUCB-203	QAD-141 Instrument List
QUENCH TANK TEMP HI H-24	1. HI quench tank temp. (near bottom of tank) 2. Quench tank temperature indicator on RUCB.	1. No Auto Action. 2. Follow quench tank Normal Operating Procedure #2- (LATER) to reduce temp.	200°F HI	TIA-116 Temp. Indicating Alarm/SIGMA RUCB-203	QAD-135 Instrument List
QUENCH TANK LEVEL HI/LO H-32	1. Quench tank lvl out of Norm. Operating band. 2. Quench tank lvl indicator on RUCB.	1. No Auto Action. 2. Follow Quench Tank Normal Operating Procedure #2- (LATER) to return to Level	HI - 642 Lo - 442 Level	74-1, 74-2/1629 Level Indicating Alarm/SIGMA RUCB-203	QAD-140 Instrument List
1474/1475 ID: CENBRL FAILURE H-40	(LATER)				
1474/1475 ID: CENBRL FAILURE H-40	(LATER)				
STAND-BY POWER ON H-48	(Exact cause being determined)	(later)	(later)	KIA, KIB -----	

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030311, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL J VERTICAL COLUMN 1

MESSAGE TITLE	1. INDICATED CONDITION 2. CURRENT READ INDICATION WHICH VERIFY OR PLANNING TRIP/ABLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT Therm, OVERD OR Time Depend TRIP	SENSING ELEMENT NUMBER & LOCATION 74-1, 74-2 Trip Contacts RCP 2-20304 2A1 6.9KV Bus	RESPONSE
J-1 RC PP 2A1 OVERLOAD/TRIP	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) RCP will trip on low RCS flow. 2. (A) If critical, follow RCP O/N Procedure 2-0030310. (B) If critical and ALL pumps lost, follow Nat-Circ. Cool-down Brgg. Proc. 2-0120360 (C) Refer to RCP O/N Proc. 2-0120364.	Variable Setpoint Set 10% Higher Than Normal Therm, OVERD OR TIME Independent O.C. Trip	74-1, 74-2 Trip Contacts RCP 2-20304 2A1 6.9KV Bus	QAD-101
J-9 RC PP 2A1 VIBRATION III	1. Excessive vibration or axial shaft thrust movement detected on 2A1 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RCP-204.	1. (A) Check display indicators behind RCP-204 (B) Follow RCP Off-Normal Proc. 2-0120364	Variable Setpoint Set 10% Higher Than Normal Therm, OVERD OR TIME Independent O.C. Trip	74-1, 74-2 Trip Contacts RCP 2-20304 2A1 6.9KV Bus	QAD-92
J-17 RC PP 2A2 VIBRATION III	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) RCP will trip on - low RCS flow. 2. (A) If critical, follow RCP Off-Normal 2-0030310. (B) If critical and ALL pumps lost, follow Nat-Circ. Cool-down Brgg. Proc. 2-0120360 (C) Refer to RCP Off-Norm Proc. 2-0120364.	Variable Set 10% Higher Than Normal Therm, OVERD OR TIME Independent O.C. Trip	74-1, 74-2 Trip Contacts RCP 2-20304 2A1 6.9KV Bus	QAD-109
J-25 RC PP 2A2 VIBRATION III	1. Excessive vlb, or axial shaft thrust movement detected on 2A2 RCP. 2. Vibration and thrust monitor meters on vibration monitoring equipment behind RCP-204.	1. (A) Check display indicators behind RCP-204 (B) Follow RCP Off-Normal Proc. 2-0120364.	Variable Set 10% Higher Than Normal Therm, OVERD OR TIME Independent O.C. Trip	74-1, 74-2 Trip Contacts RCP 2-20304 2A1 6.9KV Bus	QAD-92
J-31 RC PPS SEAL TUBE LEAK	1. Leakage of hot RCP coolant from RCS to ODM System inside seal water IX as detected by HX IX Diff. Temp. on 2A1, 2A2, 2B1 or 2B2 RCPs 2. (A) HCV-14-11A1, A2, B1, B2 HX ISRL Valve position (B) ODM activity process RAD monitor.	1. (A) Check display indicators behind RCP-204 (B) Follow RCP Off-Normal Proc. 2-0120364. 2. Follow applic. steps in subsequent actions of RCP Off-Norm Proc 2-0120364.	203° Difference In Inlet/ outlet temp.	(T015-14-32A1, A1, A2, R2) 2X-1, 2X-2/91, 2X-1, 2X-2/94-(HX Ts) On each RCP seal tube Heat Exchanger VIB, ALPHA, VIB1A, VIB2A	QAD-93 QAD-94
J-41 RC ODM A SEAL, PARTIN II	(LATER)	(LATER)	(LATER)	(LATER)	QAD-1870

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL J VERTICAL COLUMN 2

WINDOW TITLE	1. INITIATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERTAIN TO TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2A1 SEAL J-2	1.(A) HI press; pump gasket leak detect, (B) HI-temp; lower 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 SIGMA indicator. (B) If no SIGMA ind. abnormal; alarm from PP gasket leak. (C) Follow RCP Off-Norm. Proc. #2-0120034.	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 RT28-203 PS is on RCP	Q4D-103
RC PP 2A1 OIL PRESS/FLO/LVL HI/LO R J-10	1.(A) Low HIR 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) Reflash panel RA-RAB-47 behind RT28	1. None 2.(A) Check refl. pnl. behind RT28 to determine alarm cause. (B) Follow RCP Off-Norm. Proc. #2-0120034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ±2" from Normal	RA-RAB-47 Reflash Panel Behind RT28-204	Q4D-103
RC PP 2A2 SEAL J-18	1.(A) HI-press; pump gasket leak detect, (B) HI-temp; lower 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 SIGMA indicator (B) If no SIGMA indicators abnormal; alarm is from pump gasket leak. (C) Follow RCP Off-Norm. Proce. #2-0120034	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 RT28-203, PS is on RCP	Q4D-111
RC PP 2A2 OIL PRESS/FLO/LVL HI/LO R J-26	1.(A) Low HIR 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 RT28	1. None 2.(A) Check reflash panel behind RT28 to determine alarm cause. (B) Follow RCP Off-Normal Proc. #2-0120034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ±2" from Normal	RA-RAB-49 Reflash Panel Behind RT28-204	Q4D-111
BLANK J-34	BLANK			-----	
ICC CHNL. A RX VESSEL LEVEL LO J-42	(LATER)	(LATER)	(LATER)	YTR28LIA, YPR28LIA, YSMA -----	Q4D-1370

2

WHEM TITLE	I. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR FURNISH TABLE	A. AUTO ACTION B. OPERATOR ACTION - VALID ALARM	SECTION	SIGNALING ELEMENT NUMBER & LOCATION
RC PP 2A1 THP HI	J-3 1. High temp. on 2A1 RCP; (A) Upper thrust bearing, (B) OC, lower thrust bearing. 2.(A) Upper/lower thrust BKG Temp. SIGMA Indicators (B) Thrust BKG Monitor behind RTCB-204 on Individual PP ODM return line.	1. None 2.(A) Check ODM flow to pump. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	200° HI Temp	TIA-1168, -1159 Temp Indicating Alarm SIGMA
RC PP 2A1 CIG WTR FLO LO	J-11 1. To ODM flow from 2A1 RCP, on Individual PP ODM return line. 2.(A) Individual (203) and combined (206) ODM flow, (B) Seal HS, and RCP "N" HER-valve positions. (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual PP return line to No Auto Action 2.(A) LHM; Adjust RCP ODM return IHR VLV outside Bldg-Shield. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	190 GPM Low Flow	RUCB-203 FIA-1158 Flow Sys. Indicating Alarm Sys.
RC PP 2A2 THP HI	J-19 1. High temp. on 2A2 RCP; (A) Upper thrust bearing, (B) OC, lower thrust bearing. 2.(A) Upper/lower thrust BKG Temp. SIGMA Indicators (B) Thrust BKG monitor behind RTCB-204 on Individual PP ODM return line.	1. None 2.(A) Check ODM flow to pump. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	200° F HI Ramp	FIA-1168, -1169 Temp Indicating Alarm SIGMA
RC PP 2A2 CIG WTR FLO LO	J-27 1. To ODM flow from 2A2 RCP, on Individual PP ODM return line. 2.(A) Individual (203) and combined (206) ODM flow (B) Seal HS, and RCP "N" HER-valve positions. (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual PP return line to No Auto Action 2.(A) Low; Adjust RCP ODM return IHR VLV outside Bldg-Shield. (B) Follow RCP OFF-Norm. Proc. #2-0120034.	190 GPM Low Flow	FIA-1168 Flow Indicating RUCB-203
BLANK	BLANK			
RC CDR A RX CODE EXIT THP HI	J-35 J-3	(LATER)	(LATER)	VIRIDILLA, YIPALIA, YSHA

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL J 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 2A1 REVERSE ROTATION J-4	1. 2A1 RCP rotating in reverse as detected by hi rev. oil flow thru thrust runner oil PP. PP 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 the validity of alarm. (B) On Stopped/Started Pump - Valid Alarm; STOP ALL RCPs, follow Ntt. Circ. Cooldown Emergency Proc. #2-0120040	12.7 GPM Reverse Flow	PS-1156, - 1157 2A1 RCP	OWD-103
RC PP 2A1 LIFT PP OVERLOAD J-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. OVERLOD OR or 140 Amp O.C. Trip	74A, 74B, 38X/P-2A1 62Y (A) 2-41229/2A5 MCC (B) 2-42032/2B5 MCC	OWD-103
RC PP 2A2 REVERSE ROTATION J-20	1. 2A2 RCP rotating in reverse as detected by hi reverse oil flow thru thrust runner oil PP. PP 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 the validity of alarm. (B) On Stopped/Started Pump-Valid Alarm; STOP ALL RCPs, follow Ntt. Circ. Cooldown Emergency PROC. 2-0120040.	12.7 GPM Reverse Oil Flow	PS-1166, - 1167 2A2 RCP	OWD-111
RC PP 2A2 LIFT PP OVERLOAD J-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. OVERLOD OR 140 Amp O.C. Trip	74A, 74B 38X/P-2A2, 62Y (A) 2-42134/2B6 MCC (B) 2-41327/2A6 MCC	OWD-111
BLANK J-36	BLANK				
RC CHIL A TROUBLE J-44	(later)	(later)	(later)	WJTRW-1A, YPFAILE, YSMAB	

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ANNUNCIATOR PANEL J VERTICAL COLUMN 6

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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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RC PP 281 SEAL J-6	1.(A) HI-press; pump gasket leak detect, (B) HI-temp; lower 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 SIGMA indicator. (B) If no SIGMA indicators abnormal; alarm is from pump gasket leak. (C) Follow RCP Off-Norm. Proc. #2-0120034.	A) 500 PSIG B) 170° F C) 945/55 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1170, TIA-1171, PIA-1172-1173, PS-1170 FIA, PIA, and TIA on RRB-203 and PS is on RCP	QMD-107
RC PP 281 OIL PRESS/FLO/LVL HI/LO R J-14	1.(A) Low HER 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-48 Behind RRB	1. None 2.(A) Check REFL panel behind RRB to determine alarm cause. (B) Follow RCP Off-Norm. Proc. #2-0120034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ± 2" from Normal	RA-RAB-48 Reflash Panel Behind RRB-204	QMD-107
RC PP 282 SEAL J-22	1.(A) HI-press; pump gasket leak detect, (B) HI-temp; lower 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 SIGMA indicator (B) If no SIGMA indicators abnormal; alarm is from pump gasket leak. (C) Follow RCP Off-Norm. Proc. 2-0120034.	A) 500 PSIG B) 170° F C) 945/545 PSIG D) 150/25 PSIG E) 1.25/.75 GPM	FIA-1180, TIA-1181, PIA-1182-1183 PS-1180 FIA, PIA, and TIA on RRB-203, and PS is on RCP	QMD-115
RC PP 282 OIL PRESS/FLO/LVL HI/LO R J-30	1.(A) Low HER 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- RRB	1. None 2.(A) Check reflash panel behind RRB to determine alarm cause. (B) Follow RCP Off-Norm. Proc. #2-0120034.	A) 2000 PSIG B) 7 GPM C) 7 GPM D) ± 2" from Normal	RA-RAB-50 Reflash Panel Behind RRB-204	QMD-115
BLANK J-38	BLANK				
RC CIRC B RX VESSEL LEVEL LO J-46	(LATER)	(LATER)	(LATER)		

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APPENDIX PART J VERTICAL COLUMN 7

MUNIM TITLE	1. INDICATED CONDITION 2. OFF-NORMAL FROM INDICATION WHICH VERIFY OR PURSUE TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
RC PP 261 TRIP HI	1. High temperature on 261 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing 2. (A) Upper/lower thrust bearing temperature SIGMA Indicators. (B) Thrust bearing monitor behind RCB-204, flow. 1. Low ODM flow from 261 RCP, on individual PP ODM flow. 2. (A) Individual (203) and combined (206) ODM flow, (B) Seal HX, and RCP "N" HR-valve positions, (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. None 2. (A) Check ODM flow to pump. (B) Follow RCP Off-Norm. Proc. 2-0120034, outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. 2-0120034.	200° F HI Temp	TIA-1178, 1179 Temp Indicating Alarm SIGMAS RCB-203	ODD-108
RC PP 261 CLG WTR FLO LO	1. High temperature on 262 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing 2. (A) Upper/lower thrust bearing temperature SIGMA Indicators. (B) Thrust bearing monitor behind RCB-204, flow. 1. Low ODM flow from 262 RCP, on individual PP ODM flow. 2. (A) Individual (203) and combined (206) ODM flow, (B) Seal HX, and RCP "N" HR-valve positions, (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual pump return line low - No Auto Action. 2. (A) Adjust RCP ODM return header valve outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. 2-0120034.	190 GPM Low Flow	FIA-1178 Flow Indicating Alarm System RCB-203	ODD-105
RC PP 262 TRIP HI	1. High temperature on 262 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing 2. (A) Upper/lower thrust bearing temperature SIGMA Indicators. (B) Thrust bearing monitor behind RCB-204, flow. 1. Low ODM flow from 262 RCP, on individual PP ODM flow. 2. (A) Individual (203) and combined (206) ODM flow, (B) Seal HX, and RCP "N" HR-valve positions, (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. None 2. (A) Check ODM flow to pump. (B) Follow RCP Off-Norm. Proc. 2-0120034, outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. 2-0120034.	200° F HI Temp	TIA-1189, - 1189 Temp Indicating Alarm SIGMAS RCB-203	ODD-114
RC PP 262 CLG WTR FLO LO	1. High temperature on 262 RCP; (A) Upper thrust bearing, (B) OR, lower thrust bearing 2. (A) Upper/lower thrust bearing temperature SIGMA Indicators. (B) Thrust bearing monitor behind RCB-204, flow. 1. Low ODM flow from 262 RCP, on individual PP ODM flow. 2. (A) Individual (203) and combined (206) ODM flow, (B) Seal HX, and RCP "N" HR-valve positions, (C) Pump oil and seal temperatures. (D) SIAS signal presence.	1. Individual PP return line low - No Auto Action. 2. (A) Adjust RCP ODM return header valve outside Bio-Shield. (B) Follow RCP Off-Norm. Proc. 2-0120034.	190 GPM Low Flow	FIA-1189 Flow Indicating Alarm SIGMAS RCB-203	ODD-113
BLANK	BLANK				
RC PP 261, B RE OPER EXIT TRIP HI	(LATER)	(LATER)	(LATER)		
J-47					

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ANNUNCIATOR PANEL J VERTICAL COLUMN 8

WIREM TITLE	1. INDICATED CONDITION 2. CHIME, BORN INDICATION WHICH VERIFY OR FIND OUT THE PROBLEM	1. ARO ACTION 2. OPERATOR ACTION - VALID ALARM	SEALANT 12.7 GPM Reverse Oil Flow	SENSING ELEMENT ARMER & LOCATION FS-1176, -1177 Thrust Runner Oil Pump 281 RCP	REFERENCE
RC PP 281 LIFT PP REVERSE ROTATION	1. 281 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 Rot.-Circ. Cooldown Pumping Proc. 2-0120360.	Reverse Oil Flow	FS-1176, -1177 Thrust Runner Oil Pump 281 RCP	QAD-107
RC PP 281 LIFT PP OVERLOAD	1. 281-A or 281-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OK, has been racked out. 2. Respective oil lift pump has indicated lighter-out	1. Pump trips 2. (A) Ensure 281 RCP oil lift PP running if required. (B) Check breakers (C) Notify Elect. Dept. if necessary	Thrust. OVERLOAD OR 140 Amp O.C. Trip	74A, 74B, 380/p-281, 671 RCP Contacts (A) 2-42029/285 MEC (B) 2-41230/285 MEC	QAD-107
RC PP 282 REVERSE ROTATION	1. 282 RCP rotating in reverse, as detected by high 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 the validity of alarm. (B) On Stopped/Started Pump - Valid Alarm; STOP ALL RCPs, follow Rot.-Circ. Cooldown Emergency Procedure 2-0120360.	12.7 GPM Reverse Oil Flow	FS-1186, -1187 282 RCP	QAD-115
RC PP 282 LIFT PP OVERLOAD	1. 282-A and/or 282-B oil lift pump; (A) Has tripped on overload, (B) Has lost control power, (C) OK, has been racked out. 2. Respective oil lift pump has indicated lighter-out	1. Pump trips 2. (A) Ensure 282 RCP oil lift pump running if required. (B) Check breakers locally, (C) Notify Elect. Dept. if necessary	Thrust. OVERLOAD OR 140 Amp O.C. Trip	74A, 74B, 380/p-282, 674 (A) 2-41328/286 MEC (B) 2-42133/286 MEC	QAD-115
BLANK	BLANK				
EXC CIR. B TROUBLE	(LATER)	(LATER)	(LATER)		

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ANNUNCIATOR PANEL K VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PHRENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETTING	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RX TRIP BKR TCB-2 OPEN K-1	1. Reactor trip circuit breaker #2 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RTCB (C) Tripped open from loss of control DC power (D) OR, has been racked out. 2. Breaker position lights on RPS trip SCCR Bus Minc - green	1. (A) Breaker TCB-2 opens. (B) If power is lost to CEA bus; R _x trips 2. (A) If R _x Trips; follow R _x Trip Off-Norm. Procedure #2-0030130 (B) If one breaker only; check breaker locally	Mech. Contact From Actual Breaker Position	52a Breaker Contact ----- Bkr 2-93302 CEA Trip Bus	OMD 413
RX TRIP BKR TCB-1 OPEN K-9	1. Reactor trip circuit breaker #1 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RTCB (C) Tripped open from loss of control DC power, (D) OR, has been racked out. 2. Breaker position lights on RPS trip SCCR Bus Minc - green	1. (A) Breaker TCB-1 opens. (B) If power is lost to CEA bus, R _x trips. 2. (A) If R _x Trips; follow R _x Trip Off-Norm. Procedure #2-0030130. (B) If one breaker only; check breaker locally, notify Elect. Dept. if necessary	Mech. Contact From Actual Breaker Position	52a Breaker Contact ----- Bkr 2-93301 CEA Trip Bus	OMD 411
REACTOR TAVE/TREF TEMP HI K-17	1. RCS average temperature has risen above secondary reference temperature for present turbine power level. 2. (A) AWP Annunciator - alarming (K-18). (B) TAVE/TREF Recorders/Displays (C) ODMCS 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 TAVE Greater Than TREF	RBS, RS-1100-10 Temp. Error Alarm ----- Selected Reactor RHG RTCB-204 Rear	OMD 404
REACTOR TAVE/TREF TEMP LO K-25	1. RCS average temperature has fallen below secondary reference temperature for present turbine power 2. (A) TAVE/TREF Recorders/Displays (B) ODMCS Auto-w/drawal lights illuminated. (C) RCS temperature indications	1. None (Auto-withdrawal feature disabled) 2. Match RCS TAVE with TREF by adjusting turbine load, dilution, or CEA withdrawal.	6.6° F RCS TAVE Less Than TREF	RBS, RS-1100-10 Temp. Error Alarm ----- Selected Reactor RHG RTCB-204 Rear	OMD 404
BLANK K-33	BLANK			-----	
BLANK K-41	BLANK			-----	

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ANNUNCIATOR PANEL, K 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 MESSAGE NUMBER & LOCATION	REFERENCE
RX TRIP BCU RUB-6 OPEN K-2	1. Reactor Trip Circuit Breaker #6 has; (A) Tripped opened by RPS trip signal, (B) Tripped open by manual pushbutton on RUB (C) Tripped open from loss of control DC power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SGR Bus Holic - green.	1. (A) Breaker RUB-6 opens. (B) If power is lost to CEA bus, 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 Bar Contact Bar 2-91306 CEA Trip Bus	GRD 414
RX TRIP BCU RUB-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 RUB (C) Tripped open from loss of control DC power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SGR Bus Holic - green.	1. (A) Breaker RUB-5 opens. (B) If power is lost to CEA bus, 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 Bar Contact Bar 2-91305 CEA Trip Bus	GRD 412
AUTO WITHDRAWAL PROHIBIT K-18	1. Multiple inputs indicative of HI-Reactor Power will give "AMP"; (A) HI-TOTAL RCS Temperature (B) Steam bypass demand signal (C) TAVR/DRP Deviation (D) CEA drop from (AUS) 2. Plant parameters indicating above conditions	1. Prevents automatic withdrawal of CEAS by CEAS. (NOTE: Auto Withdrawal Feature Defeated) Functions as alarm function only. 2. Determine if abnormal plant conditions exist and take action to correct	A) 556° F B) Contact from SDCS C) 6.6° F D) Rod Bottom Rod Switch	CEHCS AMP ALARM OUTPUT CEHCS	GRD 1097
CEA WITHDRAWAL PROHIBIT K-26	1. CEA withdrawal in any mode being prevented by presence of 2 of the same RPS pretrips below; (A) Local power density - high (B) Rx power-high (C) Start-up rate - high (D) Thermal margin/low pressure - low 2. Pretrip RPS indicators and respective annunciators	1. Prohibited from CEA withdrawal in any mode 2. (A) Take action to reduce respective pre- trip condition.(CEA INSERTION IS available) (B) If CEA withdrawal could aid an LPD condition, bypass capability is provided	2/4 In Any Of Listed Pre trips (see RPS setpoints)	CEHCS CNP ALARM OUTPUT Control Element DC Bus Master Control System	GRD 1097
CEA REG GROUP WITHDRAWAL PROHIBIT K-34	1. CEHCS 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 AIG screen. (B) CEA positions from DPCS.	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 100%	CEHCS "REG" Interlock RUB-204	GRD 1097
CEA S/D GROUP INSERTION PERMISSIVE K-42	1. All Reg CEAs are inserted and a CEHCS permissive now exist to insert the shutdown CEAs in a Group Mode. 2. (A) CEA positions displayed on AIG screen. (B) CEA positions from DPCS.	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 regulat- ing CEA not or below 100%	CEHCS "SRT" Interlock RUB-204	GRD 1097

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ANNUNCIATOR PANEL K VERTICAL COLUMN 3

MESSAGE TITLE	1. INDICATED CONDITION 2. CURRENT ROOM INDICATION WHICH VERIFY OR PURSUE THE ISSUE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CEA TRIP BES THE ROR TRIP-9 OPEN	1. CEA trip bus the breaker No. 9 is open 2. CEA ROR trip SARE MISC on RPS.	1. None 2. Maintain the ROR-9 closed during normal ops to ensure CEA ROR set synchronization capability	Mech. Contact From Actual Breaker Position	52a Breaker Contact ROR-9 CEA Trip Bus	QAD 419
CEA TRIP INHIBIT	1. All CEA motion in all modes has been stopped due to abnormal conditions; (A) OMRP - Interlock on Reg 6 (PL) CEAs. (B) OMRP - Interlock on shutdown (C) Group out of sequence (D) Group Deviation (E) PHL Violation 2. (A) CEA position displayed on AIS screen. (B) Individual motion inhibit annunciators	1. All CEA motion has been inhibited in all modes, by AIS generated CEA Motion Inhibit 2. (A) Determine cause for the CMI. (B) Follow PULZ OFF-normal Proc 2-0010030 (C) < 83" Sep (D) > 6" Dev (E) < PHL	(A) < 122" SH22m (B) > 10" ROR CEAs (C) < 83" Sep (D) > 6" Dev (E) < PHL	QOMCS "OMI" Interlock From Analog Read Switch Pos.	QAD 1097
GROUP OUT OF SEQUENCE (ROR)				DATA PROCESS, O.O.B	QAD 1550
GROUP OUT OF SEQUENCE (AIS)				ANALOG DISPLAY	QAD 1097
GROUPED CEA OMCS				QOMCS	QAD 1097
AIS CODING FAILURE				AIS	QAD 1097
K-41					

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ANNUNCIATOR PANEL K VERTICAL CRIBIN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
RX TRIP RCR TCB-3 OPEN K-4	1. Reactor trip circuit breaker #3 has; (A) Tripped opened by manual pushbutton on RUCB, (B) Tripped open by manual pushbutton on RUCB (C) Tripped open from loss of control DC power (D) OR, has been racked out 2. Breaker position lights on RPS Trip SRR Bus Music - green.	1. (A) Breaker TCB-3 opens. (B) If power is lost to CEA bus, R _x trips 2. (A) If R _x Trips; follow R _x 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 Breaker Contact ----- Bkr 2-93304 CEA Trip Bus	QAD 415
RX TRIP RCR TCB-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 RUCB (C) Tripped open from loss of control DC power, (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SRR Bus Music - green.	1. (A) Breaker TCB-4 opens (B) If power is lost to CEA bus, R _x trips 2. (A) If R _x Trips; follow R _x 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 Breaker Contact ----- Bkr 2-93304 CEA Trip Bus	QAD 417
CEA PRE-PWR DEPENDENT INSERTION (DDPS) K-20	1. Indicates one or more CEAs is about to exceed acceptable insertion limits for existing T power level as determined by the DDPS. 2. (A) CEA pulse counter position indicators (B) DDPS; CEA Position Log and T power. (C) CEA positions as displayed on AIS screen.	1. None 2. (A) Stop CEA insertion prior to reaching PDL Limit, if possible. (B) If dropped CEA, follow PLCEA-Off-Normal Procedure #2-0110030. (C) Ensure CEA position meets Tech Spec Insertion Limits.	5" Above PDL Variable Setpoint	Data Process, PDL Alarm Output ----- DDPS Computer	QAD 1550
CEA PRE-PWR DEPENDENT INSERTION (AIS) K-28	1. Indicates one or more CEAs is about to exceed acceptable insertion limits for existing Q-Power as determined by AIS display. 2. (A) CEA positions & PPI alarm on AIS display (B) RPS highest Q-Power level. (C) Back-up display system readout	1. None 2. (A) Stop insertion prior to reaching PDL Limit, if possible. (B) If dropped CEA, follow PLCEA Off-Norm. Procedure #2-00110030. (C) Ensure CEA positions meet Tech Spec Insertion Limits	Variable as Function of Q-Power	Analog Display Alarm Output ----- AIS Micro-Computer Behind RUCB-204	QAD 1097
CONTINUOUS CRIPPER VOLT HI K-36	(later)	(later)	(later)	CEMES Alarm Output -----	QAD 1097
CEA MOTION CONTINUOUS K-44	1. One or more CEAs has been inserting or with- drawing for greater than 30 seconds. 2. (A) CEA position display on AIS screen, (B) DDPS pulse counter CEA position displays (C) CEMES Control Panel Displays	1. None 2. Ensure CEA motion is under operator control	30 Seconds of continuous CEA motion	CEMES Alarm Output ----- AIS Micro-Computer Behind RUCB-204	QAD 1097

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 5

WIREMATIC TITLE	1. INDICATED CONDITION 2. OFF-NORMAL INDICATION WHICH VERIFY OR PLUMING TABLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENDING ELEMENT NUMBER & LOCATION	REFERENCE
RY TRIP BOX T2B-7 OPEN	1. Reactor trip circuit breaker #7 has; (A) Tripped open by RPS Trip Signal (B) Tripped open by manual pushbutton on RIB (C) Tripped open from loss of control IC power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip Sagr Bus Hmatic - green.	1. (A) Breaker T2B-7 opens. (B) If power is lost to OEA Bus, Rr Trips 2. (A) If Rr Trips; follow Rr Trip Off-Normal Procedure #2-0030130. (B) If on breaker only; check breaker locally, notify Elect. Dept. If necessary	High Contact From Actual Breaker Position	52a Breaker Contact Rr 2-91307 OEA Trip Bus	QAD 416
RY TRIP BOX T2B-8 OPEN	1. Reactor trip circuit breaker #8 has; (A) Tripped open by RPS Trip Signal (B) Tripped open by manual pushbutton on RIB (C) Tripped open from loss of control IC power (D) OR, has been racked out. 2. Breaker position lights on RPS Trip SAGR Bus Hmatic - green.	1. (A) Breaker T2B-8 opens. (B) If power is lost to OEA Bus, Rr Trips 2. (A) If Rr Trips; follow Rr Trip Off-Normal Procedure #2-0030130. (B) If on breaker only; check breaker locally, notify Elect. Dept. If necessary	High Contact From Actual Breaker Position	52a Breaker Contact Rr 2-91308 OEA Trip Bus	QAD 418
OEA POWER DEPENDENT INSERTION (DIPS)	1. One or more OEA is inserted to or below the RPS Power dependent Insertion Limit for existing T Power Level. 2. (A) DIPS; OEA positions, and T Power. (B) OEA positions on RPS screens.	1. No Auto function on PUIL from RPS. 2. (A) Ensure OEA Insertion has ceased. (B) If dropped OEA, follow FLCEA Off-Normal Procedure #2-010030.	Variable as Function of Delta-T Power	Data Process, PUIL Alarm Output DIPS Computer Behind RIB-204	QAD 1550
OEA POWER DEPENDENT INSERTION (AIS)	1. One or more OEA is inserted to or below the AIS Power dependent Insertion Limit existing Q-Power Level. 2. (A) OEA positions on AIS screen. (B) RPS highest Q-Power Level. (C) Back-up display system read-out	1. OEA Motion Interlock is generated stopping all OEA Motion, except in manual individual of OEA to above PUIL. (B) If dropped OEA; follow FLCEA Off-Normal Procedure #2-010030. (C) Ensure OEA Insertion within Tech Specs	Variable as Function of RPS Q-Power	Analog Display Alarm Out AIS Micro-Computer Behind RIB-204	QAD 1097
BLANK	BLANK				
BLANK	BLANK				
BLANK	BLANK				

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 6

WIRING TITLE	1. INDICATED CONDITION 2. OPERATOR ROOM INDICATION WHICH VERIFY OR PRIORITY THEREOF	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT	REFERENCE
CEA AUTO ACTION LIM POWER INHIBIT	1. Automatic CEA motion signals from RBS have been prohibited, due to low power level. 2. Nuclear Linear range power on 9 & 10 Power Recorder JR-09/1010 on RT2B-204	1. No Automatic CEA 2. (A) Ensure proper power level for prohibit (B) Operate CEA in manual mode.	Below 11% Decreasing, Up to 15% Increasing (Linear [9/10] power)	NUMBER 6 LOCATION RBS, IS-1100-10 Low Power Motion Interlock Selected Reactor Regulating System RT2B-204 Rear	QAD 403 RBS Tech Manual 2998-12819
RBS SELECTED SYS INTERPACTIVE	1. The selected reactor RBS System; (A) Has lost one or more power supplies, (B) OR, RBS in Test, as sensed by one more Oper/Cal switch out of operate. 2. (A) Unexplained CEA motion or DAVE/DEP Abnormal (B) RBS drawer "TEST" and "POWER" indicator lights	1. None (later) 2. (A) Swap reactor RBS systems with select Switch. (B) Stabilize plant; take manual control of SICS, CDPCS, and Pressurizer Level Controls if necessary.	Selected RBS A) Loss of power B) In Test Mode	RBS, IS-1100-10 Interoperative Alarm Output Selected Reactor Regulating System RT2B-204 Rear	QAD 403 RBS Tech Manual 2998-12819
CEA POSITION +/- 4 INCH DEVIATION (DIPS)	1. A deviation exist of $\geq 4"$ in CEA within a Group as sensed by pulse counter position, from CDPM Coil Power Programmers. 2. (A) DIPS CEA Position Log. (B) Read switch position on AIB screen or back-up display system.	1. None - (DIPS Dev. - alarm only) 2. (A) Check Read Switch positions (B) Check DIPS Log of CEA positions (C) Correct DIPS pulse counter CEA positions if applicable (D) Follow PLCEA Off-Normal Proc. 2-0110030	+/- 4" Highest to Lowest CEA DIA Group	Data Process, Dev (Deviation Alarm) DIPS Computer Behind RT2B-204	QAD 432
CEA POSITION +/- 4 INCH DEVIATION (AIB)	1. A deviation exist of $\geq 4"$ in CEA within a Group, as sensed by ANALOG Read Switch Position from the AIB. 2. (A) AIB Read Switch CEA positions. (B) Back-up display system read-out.	1. Off-CEA motion inhibit, preventing CEA motion in any mode. 2. (A) Follow PLCEA Off-Normal Proc. 2-0110030 (B) Off may be bypassed to allow HI mode ability, to realign CEA.	+/- 4" Highest to Lowest CEA in a Group	ANALOG DISPLAY "PM" Alarm CEA Micro-Computer Behind RT2B-204	QAD 1097
CEA POSITION +/- 8 INCH DEVIATION (DIPS)	1. A deviation exist of $\geq 8"$ in CEA within a Group as sensed by pulse counter position, from CDPM Coil Power Programmers. 2. (A) DIPS CEA Position Log. (B) Read switch position on AIB screen or back-up display system read-out.	1. None - (DIPS Dev. - alarm only) 2. (A) Check Read Switch Positions (B) Check DIPS Log of CEA positions (C) Correct DIPS pulse counter CEA positions if applicable. (D) Follow PLCEA Off-Normal Proc 2-0110030	+/- 8" Highest to Lowest CEA in a Group	DATA PROCESS (Deviation Alarm) DIPS Computer Behind RT2B-204	QAD 432
ISOL CAB POWER FAIL / GROUND DET	1. (A) Loss of 120V DC power to, (B) OR, DC ground detected in; PB, MB, MC, MD, 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 Detected Relay) In each Safety Isolation Cabinet In	QAD 1014

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHEN VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETTING	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CEA DRIVE MG SET 2A OVERCURRENT TRIP K-7	1. Indicates 2A CEA MG set has tripped on overload. 2. (A) MG set output breaker indication - Green on CEA trip bus Mimic. (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 2-0030130. (B) Check MG set locally	(later)	t,r (later) ----- (later)	QMD 401
CEA DRIVE MG SET 2A LOCAL ALARM K-15	1. Indicates local Alarm Annunciator at the 2B MG set control cabinet. (later - list) 2. None	1. (later) 2. Have operator check MG set locally.	(list later)	CONTROL CAB. (Alarm Output) ----- 2A MG SET	QMD 409
CEMCS TROUBLE K-23	1. CEMCS timer 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	Fall-Over Transfer to Clock "B"	CEMCS "Trouble Alarm" ----- CEMCS Cable Spread Room	QMD 1097
CEMCS ABNORMAL K-31	1. Indicates removal of any rack-mounted circuit card in CEMCS System. 2. Abnormal functions of CEMCS System.	1. None 2. Notify I & C Department	Circuit Card Removal From Contacts in	CEMCS "Card Removal" ----- CEMCS in Control Room and Cable Spread Room	QMD 1097
BLANK K-39	BLANK			-----	
ANNUNCIATOR POWER SUPPLY FAILURE K-47	(LATER)	(LATER)		-----	

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL K VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENDING ELEMENT NUMBER & LOCATION	RESPONSE
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 alarm (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 #2-0030130. (B) Check MG set locally	(later)	t,r (later) ----- (later)	QAD 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	QAD 410
ANALOG DISP. 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)	QAD 1097
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)	QAD 1097
BLANK K-40	BLANK			-----	
ANNUNCIATOR GROUND DETECTED K-48	(LATER)	(LATER)		-----	

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 - VERTICAL COLUMN 1

WINDOW TITLE	1. INDICATED CONDITION 2. CORREL. WITH INDICATION WHICH VERIFY OR FURTHER TENDS	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
REACTOR NORMAL TRIP	1. Reactor has been tripped by depressing Rx Trip buttons on RTEB-204 or 201. 2. (A) Reactor trip circuit breakers open (F) Sequence-of-Events Recorder Print-Out	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip Off-Normal Proc. 2-0030131.	Reactor Trip Depressed (Takes 2)	PL/MGT-1, -2 PE/MGT-1, -2 Rx Trip Pushbuttons RTEB-204 and RTEB-201	QAD 411, 413, 415, 417
REACTOR RAR 1ML HI CIR. TRIP	1. RPS has tripped the reactor from a 2/4 HI reactor power condition. 2. (A) Reactor Trip Circuit Breakers - open (P) O-Power meters, prior to trip	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip Off-Normal Proc. 2-0030131	2/4 Logic 9.61 Last Reset (10/2 Hrs)	RPS TB(4) 5-2 Trip Hysteresis Reactor Protection System	QAD 406
REACTOR RAR 1ML HI CIR. PRE-TRIP	1. Reactor O-Power is within 2% of Trip Setpoint on at least one of the RPS Trip Hysteresis. 2. (A) O-Power meters on RTEB (B) Illuminated HI-Power reset pushbuttons (C) Channel Pretrip Indicator(s) - illuminated	1. OMP, withdrawal prohibit on 2/4 pretrips. 2. (A) Depress the MPT reset buttons. (F) Reduce reactor power by GEA insertion and/or boration if necessary	1/4 Logic 7.612 Last Reset	RPS TB(4) 5-5 Trip Hysteresis Reactor Protection System	QAD 408
REACTOR START-UP RATE HI CIR. TRIP	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) Hysteresis trip indicators - illuminated.	1. (A) Rx trip breakers open (P) Turbine trip 2. Follow Rx Trip Off-Normal Proc. 2-0030131	2/4 Logic ≥ 2.49 IHH	RPS TB(4) 5-4 Trip Hysteresis Reactor Protection System	QAD 406
REACTOR START-UP RATE HI CIR. PRE-TRIP	1. Start-up rate is high, and close to Trip setpoint 2. (A) Start-up rate meters (B) Positive reactivity addition rate. (C) Hysteresis pretrip indicator(s) - illuminated.	1. OMP, withdrawal prohibit on 2/4 pretrips. 2. (A) Ensure GEA withdrawal, or positive reactivity additions have been allowed to within Addin SIR limit of 1.4 IHH.	1/4 Logic SIR > 1.3 IHH	RPS TB(4) 5-50 Trip Hysteresis Reactor Protection System	QAD 408
REACTOR START-UP RATE TRIP BYPASSED	1. (LATER) HI-Start Up Rate Trip Hysteresis Trips have been automatically bypassed by reactor power level not in range for trip. 2. Wide/Linear Range displayed power levels.	1. SIR Trip will be disabled 2. Ensure proper operation of bypass (NOTE: Normal Alarm-Information Only)	Bypassed <10-42 and >152 Power	RPS TB (4) 5-44 "Linear 1" & "LOG" Hysteresis RPS Safety NI Drawers	QAD 408

ST. LUCIE UNIT NO. 2
LWF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL L 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CEMS RIS UNDERVOLTAGE L-2	1. One or more undervoltage relays on the CEM Trip Bus have de-energized, probably due to reactor 2. CEA Trip Bus Mimic - Breaker, MC set, and undervoltage relay status indicators.	1. (A) Turbine trip from (2/4) under voltage coils. (B) Steam Bypass Control System may Quick-open from (4/4) undervoltage coils. 2. Follow Rx Trip Off-Normal Proc. 2-0030130	(later)	UV 1, -2, -3, -4 Under Voltage Relays ----- CEM Control Cabinets in C.S. Room	QND 419
REACTOR COOLANT LOW FLOW CHNL TRIP L-10	1. RCS low Flow has caused RIS 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-Normal Procedure #2-0030130 (B) Follow Nat-Circ/Loss Flow Emergency Procedure if all RCHs are lost.	95% of Rated F.S. Flow	RIS TB (4) 5-6 Trip Bistables ----- Reactor Protection System	QND 406
REACTOR COOLANT LOW FLOW CHNL. HSE-TRIP L-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 pre-trip indicator(s) illuminated	1. None 2. If reactor trips; follow Rx Trip Off-Normal Procedure #2-0030130	97% of Rated RCS Flow	RIS TB (4) 5-61 Trip Bistables ----- Reactor Protection System	QND 420
BLANK L-26	BLANK			-----	
REACTOR NUCLEAR/ Δ T RMR CHNL. DEV L-34	1. A deviation exist of greater than (LATER) % between Delta-T and nuclear power on one or more channels. 2. PPS nuclear and thermal power as displayed on RIS CIP panel	1. Alarm only - none. 2. Perform Nuclear/Delta-T	(Later)	RIS TB(4) 5-32 NUC/ T Indicator ----- RIS RUSCIP PANEL	QND 408
RX ZERO PWR MODE CHNL. BYP L-42	1. Anyone of 4 ZHPP keyswitches in bypass, and block actuation. 2. Zero power mode bypass keyswitch positions on RIS.	1. Bypassing of low RCS flow and thermal margin low pressure trips. 2. None; Normal during testing	Any ZHPP Block Action	PPS TB (4) 5-40 Auxiliary Relays ----- Reactor Protection System	QND 408

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUPPLY

APPENDIX 1. VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. GENERAL ROOM DESCRIPTION WHICH VERIFY OR PURSUING TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING ELEMENT NUMBER & LOCATION	REFERENCE
SYM GEN MTR LVL LO CHRG. TRIP	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 indicators low (C) Pistable Trip Indicators illuminated.	1. (A) Rx Trip breakers open (B) Turbine trip, A/RAS actuation 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130.	2/4 on Auctioneer Low S/G, # 392 Level (Dec)	RIS TB (4) 5-8 Trip Master Reactor Protection System	Q40 406
SYM GEN MTR LVL LO CHRG. PRE-TRIP	1. S/G level in one or both Steam Generators has decreased to near the RIS Trip Setpoint 2. (A) S/G water level indicators (202) (206) (B) Feedwater system parameters (C) Establish pre-trip indicator(s) - illuminated	1. None until reaches trip setpoint. 2. (A) Increase feedwater to Steam Generator (B) Follow loss of S/G level & Flow Emergency Procedure #2-0030140	1 Channel Low 422 Level (Narrow Range)	RIS TB (4) 5-63 Trip Master Reactor Protection System	Q40 420
SYM GEN PRESS LO CHRG. TRIP	1. S/G pressure has fallen to RIS tripset point and has tripped reactor 2. (A) Reactor trip circuit breakers - open (B) S/G pressures low (206) MCS Tave low. (C) Pistable trip indicators illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130 (B) Follow Main Steam Line Break Emergency Procedure 2-0810040	2/4 Auctioneer Low @ 60° PSIA	RIS TB (4) 5-10 Trip Master Reactor Protection System	Q40 406
SYM GEN PRESS LO CHRG. PRE-TRIP	1. S/G pressure is decreasing and is close to RIS trip setpoint. 2. (A) Steam Generator pressures (206) (B) Condition of steam damp systems (C) Channel pre-trip indicator(s) illuminated	1. None 2. (A) Check all possible sources of steam leakage, such as A/RAS SRS valves etc. (B) Reduce turbine load to inc. steam pressure	Any On Low 700 PSIA	RIS TB (4) 5-65 Reactor Protection System	Q40 420
SYM GEN PRESS LO CHRG. TRIP BYPASS	1. Steam Generator low pressure trip has been by- passed with keyswitch on FTRB 2. Bypass lights and keyswitch positions on RIS channels.	1. S/G low pressure trip has been disabled. 2. (A) Manual during testing (B) If not tested; remove keys	S/G low Press Trip keyswitch(s) In bypass	RIS TB (4) 5-38 Auxiliary Relays Reactor Protection System	Q40 408
REACTOR RATIO CALCULATION DEVIATION	(Later)	(Later)	(Later)	RIS TB (4) 5-79 Auxiliary Relays Reactor Protection System	Q40 420

ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL L 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
STM PYP SYS UNAVAILABLE L-4	1. (A) SYSTEM TEST switch not in OPERATE (F) VALVE SELECTOR switch not in NORMAL (C) Condenser vacuum interlock (D) SBCS EMERGENCY OFF 2. (A) Observation of SBCS valve test panel. (B) Condenser vacuum indications	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)	RCS-2 Alarm Contact Steam Bypass RUCB-204 Rear	Q&D 748 SBCS Tech. Man. 2998-12810
STEAM BYPASS INWARD AMP L-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, Rr and turbine power, and steam bypass valves & system.	1. Steam Bypass MAY actuate & open 2. Take actions to balance reactor and turbine power.	O.O. or modulation signal preset	RCS-2 Alarm Contact Steam Bypass Control System RUCB-204 Rear	Q&D 748 SBCS Tech Man. 2998-12810
PWR PRESS HI CIRCUIT TRIP L-20	1. High RCS Pressurizer Pressure has caused the PIS to trip the reactor. 2. (A) Pressurizer Pressure High (203)(206) (B) Hystable Trip Indicators-illuminated	1. (A) Rr Trip Breakers open (E) Turbine Trip 2. (A) Follow Rr Trip Off-Normal Procedure #2-0030130. (B) Follow Pressure & Level Off-Normal Procedure #2-0120035.	2/4 High Trip 2375 PSIA	RIS TB (4) 5-12 Trip Hystables Reactor Protection System	Q&D 406
PWR PRESS HI CIRCUIT PRE-TRIP L-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) Hystable Pretrip Indicator(s)-illuminated	1. Pressure Control System should have no back-up, minimum prop. htres, and full PZR spray 2. Follow Pressurizer Pressure and Level Off- Normal #2-0120035	2350 PSIA	RIS TB (4) 5-67 Trip Hystables Reactor Protection System	Q&D 420
DM/LP CIRCUIT TRIP L-36	1. RIS has tripped the reactor on low pressurizer pressure, to maintain acceptable DNBR 2. (A) Reactor Trip Circuit Breakers-Open (B) Pressurizer pressure - low (C) Hystable Trip Indicators - illuminated	1. (A) Rr Trip Breakers open (E) Turbine Trip 2. (A) Follow Rr Trip Off-Normal Procedure #2-0030130. (E) Take actions to increase DNBR and RCS subcooling.	2/4 variable with ASI, Tcold, Pwr (Min. of 1900 PSIA)	RIS TB (4) 5-14 Trip Hystables Reactor Protection System	Q&D 406
DM/LP CIRCUIT PRE-TRIP L-44	1. Pressurizer Pressure is insufficient to maintain acceptable DNBR margin and is close to causing a reactor trip. 2. (A) DNBR parameters; Rr Power, ASI, hystable pre- trip indicator(s) - illuminated.	1. OPI-withdrawal prohibit on 2/4 pretrips. 2. (A) Check all available DNBR displayed parameters, and take actions to increase DNBR and subcooling	Variable 50 PSI> than TRIP Setpoint	RIS TB (5) 5-69 Trip Hystables Reactor Protection System	Q&D 420

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ST. LOUISE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUAL/OTHER PAGE 1. VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERMANENT TRAFFIC	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CHMT PRESS HI CHMT TRIP	1. High containment pressure has caused the RIS to Trip the reactor. 2. (A) Containment pressure safety indicators. (B) RCS pressure/temperature indicators. (C) Pistable Trip Indicators - illuminated	1. (A) Rx Trip Breakers - open (B) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030131 (F) Follow applicable LICA/SELB Emergency Procedure	HI Trip - 4.0 PSIG	RIS TB (4) 5-18 Trip Ristables Reactor Protection System	Q40 406
L-5					
CHMT PRESS HI CHMT TRIP	1. Pressure in containment has risen to ≥ 2.5 PSIG, and is close to trip setpoint 2. (A) Containment pressure safety indicators (B) RCS pressure/temperature indicators. (C) Pistable pretrip indicator(s) - illuminated	1. N/A 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	RIS TB (4) 5-71 Trip Ristables Reactor Protection System	Q40 420
L-13					
LOSS OF LOAD CHMT TRIP	1. Turbine Trip has tripped the reactor by loss of load trip sensed from low EH header pressure 2. (A) EH header pressure - low (20) (F) Pistable Trip Indicators - illuminated	1. (A) Rx Trip Breakers open (B) Turbine Trip 2. Follow Rx Trip Off-Normal Procedure #2-0030131	(later)	RIS TB (4) 5-1 Trip Ristables Reactor Protection System	Q40 406
L-21					
LOSS OF LOAD/ I.C. PAR HWS CHMT TRIP PRESS	1. Reactor power has fallen to below 15% and loss of load, and LHO Trips have been automatically 2. O-Power Level indicators.	1. Loss of load and local power density trips are automatically bypassed. 2. N/A; normal alarm on power reduction	<15% RIS O-Power	RIS TB (4) 5-42 Auxiliary Relays Reactor Protection System	Q40 408
L-29					
MARK	MARK				
L-37					
MARK	MARK				
L-45					

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL 1 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
RCP CW FLD TO TRIP L-6	1. RPS has tripped the reactor due to low CW return header flow from the RCPs 2. (A) Reactor Trip Circuit Breakers - open (F) RCP return header flow/valve indicators (206) (C) Individual RCP CW return flow indicators (203) (D) Bistable Trip Indicators - Illuminated	1. (A) Rx Trip Breakers open (F) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130. (F) Also follow RCP-Off-Normal Procedure #2-0120034.	2/4 <636 GPM CW Return Header Flow > 10 min.	RPS TB (4) 5-22 Trip Bistables ----- Reactor Protection System	OWD 406
RCP CW FLD TO 10 MIN TRIP L-14	1. One or more of the RCP-CW return headers is below minimum flow trip setpoint. 2. (A) RCP return header flow/valve indications (206) (F) Individual RCP CW return flow indications (203) (C) CW system parameters (206)	1. None for 10 minutes 2. (A) Follow RCP-Off Normal Procedure 2-0120034 to restore CW to RCPs expeditiously. (F) If CW cannot be restored; reduce unit load as low as possible prior to automatic reactor trip	<636 GPM CW Return Hdr Flow	BOX A, B, C, D C/S-206-1, 2, 3, & 4 Time delay trip/test Sw ----- Inside RCU-B-206	OWD 206
LOCAL POWER DENSITY CHNL TRIP L-22	1. Reactor ASI has exceeded the RPS ASI Trip Setpoint, and has generated a reactor trip. 2. (A) Reactor Trip Circuit Breakers - open (F) ASI recorded prior to trip on JR-012 (204) (C) Bistable Trip indicators - Illuminated	1. (A) Rx Trip Breakers open (F) Turbine Trip 2. (A) Follow Rx Trip Off-Normal Procedure #2-0030130 (F) Notify Reactor Engineering	Variable with ASI exceeding Trip-Setpt	RPS TB (4) 5-20 Trip Bistables ----- Reactor Protection System	OWD 406
LOCAL POWER DENSITY CHNL PRE-TRIP L-30	1. Reactor ASI has exceeded the RPS ASI pretrip alarm setpoints, on one or more channels 2. (A) ASI and Trip Setpoint Indicators (206) (F) ASI and Trip Setpoint on RPS. (C) Channel Pre-Trip Indicator(s) Illuminated	1. GWP - withdrawal prohibit on 2/4 Pretrips. 2. Follow ASI Control Operating Procedure #2-3200021	Variable with ASI exceeding Pretrip-Setpt	RPS TB (4) 5-73 Trip Bistables ----- Reactor Protection System	OWD 420
RCP FLD SETPOINT ERROR L-38	1. Flow dependent setpoint selector switches on RISCIP Panel are selected to other than proper number of pumps running (4 pump) 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 TB (4) 5-34 Select Switch -vs- pump bkr pos. ----- RPS Aux Relays	OWD 406
BLANK L-46	BLANK			-----	

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ANNUNCIATOR PANEL 1 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/U RANGE NI-1 CIS HI L-7	(later)	(later)	(later)	RY-005/107	
THERMAL POWER CHANGE > 15% PER HOUR L-15	1. Rate of Thermal Power change has exceeded 15% per hour, and Specific Activity Surveillance Requirements now apply. 2. DDIS Power History Record	1. NONE 2. Notify Chemistry to take required Tech Spec required Iodine Samples.	>15% delta T Power Change per Hour	DDIS Power Alarm ----- DDIS Computer Behind RTG2-204	OWD 1550
REG CEA LONG TERM STEADY STATE INSERT LIMIT L-23	1. CEAs have been inserted into the Tech Spec long term insertion limit area. 2. (A) CEA positions on AIS screen, and DDIS, (F) O-Power on RIS and RTG3 displays	1. NONE 2. Consult Technical Specifications for Action Requirements	Insertion Below (later)	DDIS Insertion Alarm ----- DDIS Computer Behind RTG2-204	OWD 1550
BLANK L-31	BLANK			-----	
BLANK L-39	BLANK			-----	
BLANK L-47	BLANK			-----	

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ANNUNCIATOR PANEL 1 VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING ELEMENT NUMBER & LOCATION	REFERENCE
S/U RANGE NI-2 CIS HI L-8	(later)	(later)	(later)	RY-006/008	QAD 57
NOVATE INCORE QUITE TUNES PRESS HI/ LEAK L-16	(later)	(later)	(later)	63X/82 63X/83 DORS	QAD 1550
RFC CEA SHUT DOWN STEADY STATE INSERT LIMIT L-24	1. CEAs have been inserted into the Tech Spec Short Term Insertion Limit Area 2. (A) CEA positions on AFS screen and DORS. (P) O-Power on RPS, and RTGB displays	1. NONE 2. Consult Technical Specifications for Action Requirements	Insertion below (later)	DORS Short Term Alarm DORS Computer Behind RTGB-204	QAD 1550
BLANK L-32	BLANK				
NI CHANNEL INOPERATIVE L-40	1. One or more NI Channel Drawers has; (A) OPER/CAL Switches - out of operate. (P) 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) 5-30 (later)	QAD 408
BLANK L-48	BLANK				

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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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PURIFICATION FILTER 2A Δ/P HI M-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 (E) Bypass filter and clean/replace element	20 psid	PD1-2202 Pressure Differential Indicator ----- CUCS/VCT Area Room	OWD 152
BORON CONC HI/LO M-9	1. Off-Normal Boron Concentration 2. (A) Boronometer range lights (P) Check boron concentration recorder AR-2203 on RTCP 205 (C) Check last chemistry sample	1. No Auto Action 2. (A) If abnormal: Verify boron concentration by analysis. (E) If due to normal operation at power, reset alarm set points.	Present Boron Con- centration + 50 ppm	AT-2203 Boronometer Alarm ----- Boronometer Control Panel Behind KICB-204	OWD 191
BORONMETER/ PPOC RAD MON FLOW LO M-17	1. Low flow to boronometer and process monitor 2. (A) Check letdown flow (P) Check letdown temperature	1. No Auto Action 2. (A) Check for proper valve line-up (E) Check for auto closure of V-2468 on high letdown temperature	0.5 GPM	FIA - 2203 Flow Indicating Alarm ----- (later)	OWD 152
BORON LOAD CONTROL V-2525 OVERLOAD M-25	1. V-2525 will not operate electrically due to: (A) Breaker trip on overcurrent or, (P) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-2B5 or, (D) Control power fuse blown 2. Loss of position indication lights	1. No Auto Action 2. (A) Operate valve locally if necessary (E) 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-2B5	OWD 190 PD & MD Sh. 38
BA GRAVITY V-2508 OVERLOAD/ SS ISOL M-33	1. V-2508 will not operate electrically due to: (A) Breaker trip on overcurrent or, (P) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-2B5 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 (E) 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-2B5	OWD 165 PD 7 MD Sh. 38
BA GRAVITY V-2509 OVERLOAD/ SS ISOL M-41	1. V-2509 will not operate electrically due to: (A) Breaker trip on overcurrent or, (P) Breaker trip on thermal overload or, (C) Breaker turned off on MCC-2B5 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 (E) Operate valve locally if necessary (C) Return Normal/Isolate switch to NORMAL as soon as permissible	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-2B5 and Normal Isolate Switch	OWD 166 PD & MD Sh. 39

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ANNUNCIATOR PANEL M VERTICAL COLUMN 2

ALARM TITLE	1. INDICATED CONDITION 2. GENERAL WITH INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SFTPOINT	ISSUING ELEMENT NUMBER & LOCATION	REFERENCE
HYDRATION FILTER 2B Δ/P HI	M-2 1. High differential pressure across filter 2. Check letdown flow indicator FIA-2202 on RTCB 205 for proper flow.	1. No Auto Action 2. (A) Verify alarm (B) Bypass filter and clean/replace element	20 psid	Pressure Differential Indicator FIA-2210	QAD 152
IX PPHSS THAP HI	M-2 1. Indicates a high letdown temp. due to excessive letdown flow or low QM flow to letdown lk. 2. (A) Check region lk outlet trip. & compare with letdown lk outlet temp. (B) Check letdown flow and pressure (C) Check letdown control valves positions	1. Bypass valve diverts at 145° F 2. (A) Refer to Charging & letdown Off-Normal Procedure #2-0210030.	140° F HI	Temp. Indicating Controller TE-2224 RTCB-205	QAD 152
PLANK	M-10 1. PLANK				
DEMIN WATER PABE UP FLO HI/LO	M-18 1. Desulfurizer flow excessively high or low. 2. Chart indicator FRC-2210X on RTCB-205 indicates + 10 GPM from setpoint.	1. No Auto Action 2. (A) Check PAB tank level & PAB pump operation. (B) Check valve lineup to ensure flow path	+ 10 GPM from present set point	FA-2210X, IE-2210 62X-2512 Make-up water flow Flow Reactor RTCB-205	QAD 192
AUX SW VMS 1-6E 02-03/ 1-6F 02-04 OPEN/SS EOL	M-26 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 1-6E 02-03 or 1-6E 02-04 on RTCB-203	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/ESOL, CS-189 -3, -4 ----- Later	QAD 189
EMERG BYPASS V-251A OVERLOAD/ SS EOL	M-34 1. Emergency borate valve V-251A will not operate electrically from the RTCB because: (A) Breaker tripped on electrical fault or, (B) Breaker turned 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 lkr 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	Overload or 42 Amp O.C. trip ----- Normal / Isolate switch is in ISOLATE	S/ESOL, 74 ----- Thermal overload & O.C. trip coil are in lkr. 2-41214/MCC-2A5	QAD 167 ----- PD & MD Sh 31
	M-42				

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ANNUNCIATOR PAGE 102 M 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
VCT LEVEL HI/LO M-3	1. (A) Possible leak in RCS (F) Charging/letdown flows are unbalanced (C) Auto makeup system is malfunctioning (D) Level control system is malfunctioning 2. Check level indicator on RTCB-205	1. (A) Contacts close to stop automatic make-up 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 - <35% Level	IA-2226 Level Alarm ----- Local on VCT	Qd 154
VCT LEVEL LO-HI M-11	1. (A) Possible leak in RCS (F) Charging/letdown flows are unbalanced (C) Auto makeup system is malfunctioning (D) Level control system is malfunctioning 2. Check level indicator on RTCB-205.	1. At 5% VCT level, valve V-2504 (BWT to charging pump section) will open and valve V-2501 (VCT Discharge) will shut. 2. Refer to Boron Concentration Control Off-Normal Procedure #2-0250031.	5% Level	IA-2227 Level Alarm ----- Local on VCT	Qd 154
VCT TEMP HI M-19	1. High temperature in VCT 2. Check temperature indicator TIA-2225 on RTCB-205	1. No Auto Action 2. Refer to charging and letdown Off-Normal Procedure #2-0210030.	HI-130° F	TIA-2225 Temp Indicating Alarm ----- RTCB-205	Qd 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) Flow control power fuse or, (F) Breaker has tripped on thermal overload or, (C) Breaker has tripped on over-current 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 #2-0210030 (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	Qd 161 PD & MD Sh. 31
REFUEL WTR V-2504 OVERLOAD / SS ISOL M-43	1. (A) Normal/Isolate Switch is in ISOLATE position or (B) V-2504 will not operate electrically due to: 1. Flow 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 light are off.	1. No Auto Action 2. (A) Valve may be operated manually if (B) Return Normal/Isolate switch to Normal position when permissible (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	Qd 162 PD & MD Sh. 38

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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 (F) A leak exists in the VCT 2. Check pressure indicator PIA-2225 on KRGB-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 N ₂ & H ₂ gas regulators	HI > 65 psig LO < 4 psig	PIA-2225 Pressure Indicating Alarm KRGB-205	GD 154
BLANK M-17	BLANK			-----	
RCP CONTROLLED BLEED OFF ISOL VALVES CES OVERRIDE M-20	1. With a CES 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) in- dicate not full shut by limit switch with CES present	3-1, 3-2 ----- Later	GD 159
REFIN IX OUTLET TEMP HI M-28	1. Low charging flow or high letdown flow 2. Check temperatures on temperature indicators TIC-2221 and T1-2229	1. Letdown stop valve V-2515 will shut if temp. exceeds 475° F. 2. Refer to charging & letdown Off-Normal Procedure #2-0210000	460° F	TIC-2221 -----	GD 150
CHE LINES 2A2/2B1 VALS 1-6E-02-01/02 SS ISOL M-36	1. Capability of operating either valve from KRGB - 205 has been removed. 2. (A) Loop charging valve indicate lights - out (B) Inability to open or shut either valve with the KRGB control switches	1. No Auto Action 2. Return Normal/Isolate switch to Normal when permissible	Normal / Isolate Switch is in Isolate	SS-1,2/ISOL -----	GD 176
CONTAIN ISOL V-2516 SS-ISOL M-44	1. Containment Isolation valve V-2516 cannot be operated from KRGB-205 2. Inability to open or shut V-2516 with its control on KRGB-205	1. No Auto Action 2. Return Normal/Isolate switch to Normal when permissible.	Normal / Isolate Switch is in Isolate Position	SS-ISOL -----	GD 157

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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	SETTING ELEMENT NUMBER & LOCATION	REFERENCE
LETDOWN PRESS HI/LO M-5	1. (A) Letdown control valves LCV-2110 P or Q mal- function or (E) Pressure control valves PCV-2101 P or Q mal- function 2. (A) Check letdown flow indicator FIA-2202 on RTGB- 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	QdD 151
LETDOWN FLO HI M-13	1. (A) Failure of letdown level controller (F) Failure of pressurizer level controller 2. (A) Check pressurizer level deviation (F) Check letdown flow indicator FIA-2202 on RTGB-205	1. No Auto Action 2. (A) Return letdown flow to normal by taking manual control of letdown control valves. (C) If letdown is lost refer to charging and letdown Off-Normal Proc. 2-0210030.	>135 GPM	FIA-2202	QdD 152
LETDOWN ISOL V-2522 SS-ISOL M-21	1. Control of letdown isolation valve V-2522 has been removed from RTGB-205. 2. Inability to open or shut V-2522 from RTGB-205.	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position when permissible.	Normal / Isolate Switch in Isolate Position	SS-1/ISOL	QdD 154
LETDOWN STRAINER Δ/P HI M-29	1. Indicates dirty strainer or excessive letdown flow 2. Check letdown flow indicator FIA-2202 on RTGB-205.	1. No Auto Action 2. (A) Check strainer diff. press indication locally (F) 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	FIA-2204	QdD 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 RTGB-205	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position as soon as permissible.	Normal / Isolate Switch is in Isolate Position	SS/ISOL	QdD 157
LETDOWN LCV-2110 P/Q LIMITER BYPASSED M-45	1. (A) Letdown Control valves LCV-2112 P/Q can be fully opened or shut. (F) Position Limiter bypass switch is in bypass position.	1. No Auto Action 2. (A) When initiating letdown flow - move (F) During normal operation - return position Limiter bypass switch to Normal	Position Limiter Bypass Switch in BYPASS	SS-2/158	QdD 158

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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	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
CHG LINE ISOL V-2523 SS ISOL M-6	1. Charging line isolation valve V-2523 cannot be operated from RICH-205. 2. Inability to open or shut V-2523 from RICH-205	1. No Auto Action 2. Return Normal/Isolate switch to the Normal position as soon as permissible.	Normal / Isolate Switch is in Isolate Position	SS-2/ISOL	Qd 196
CHG PUMPS FLOW LOW M-14	1. Inadequate flow from operating charging pumps. 2. (A) Check charging flow indicator FIA-2212 on RICH-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	Qd 150
CHG IP 2A SUCTION PRESS LO/ OVERLOAD/TRIP M-22	1. (A) Suction pressure available to pump is too low (B) Charging pump has tripped due to: 1) Overcurrent 2) Breaker racked out at load center 2. (A) Check flow indicator FIA-2212 on RICH-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 Depen- dent O.C. Trip	2X-1, r, t IS-2224 X ----- Time dependent O.C. Trip is in breaker: 2-40217/L.C. 2A2	Qd 150 FD & MD Sh. 16
CHG IP 2A OIL IP TRIP / OIL LVL LO / STPG RX LVL LO M-30	1. (A) Insufficient oil pressure to pump brags. (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: Oil in pump ----- STPG RX LVL LO < 10"	6X, 2X, 7IX, LIA-2233X ----- IS-2234X	C-9 177
PLANE M-38	PLANE				
CHG IP 2A RECIRC V-2555 OVERLOAD SS ISOL M-46	1. Charging pump recirc to VCT valve V-2555 (A) Will not operate from RICH-205 (B) Breaker has tripped on overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off on REC - 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 permissible	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 blk 2-41261/REC-2A5	Qd 196, 177 FD & MD Sh. 33

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ANNUNCIATOR PANEL M 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
CLOSED BLowdown IN TEMP HI M-7	1. High temp from closed blowdown fix 2. Loss of blowdown flow as indicated on FIA-23-12 FIA-23-14 on back of RUCP-203	1. High temp Isolation valve 2-TUV-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)	QAD 1350
CHG PUMP BREAK PRESS LO M-15	1. Charging pump(s) discharge pressure has dropped below 2000 psig. 2. (A) Check discharge pressure on PIA-2212 on RUCP- 205. (B) Check pump running lights	1. No Auto Action 2. (A) Start backup pump (P) If charging is not regained, refer to charging and letdown Off-Normal Procedure 2-0210030	<2000 psig	PIA-2212	QAD 130
CHG HP 2P SUCTION PRESS LO/ OVERID/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 load center 2. (A) Check flow indicator FIA-2212 on RUCP-205 (P) Charging pump running indicating lights	1. Pump breaker opens 2. Refer to Charging & letdown Off-Normal Procedure #2-0210030.	< 10 psig Time Depen- dent O.C. Trip	2Y-1, 1, 1 PS-2224 Y Time dependent O.C. Trip is in breaker 2-40508/L.C. 2E2	QAD 178
CHG HP 2P OIL LP TRIP / OIL LM LO / STPG EX LM LO M-31	1. (A) Insufficient oil pressure to pump brings (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 LM: LO: <7 Gal in pump STPG EX LM: LO < 10"	6N, 2Y, 71Y LIA-223N IS-2234 Y	QAD 178
PLANK M-39	PLANK				
CHG HP 2P RECIRC V-2554 OVERID/WD SS ISOL M-47	1. Charging pump recir to WCT valve V-2554 (A) Will not operate from RUCP-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; cal Electrical Dept. for assistance. (B) Return Normal/Isolate switch to the Normal position as soon as permissible.	Thermal Overload or O.C. Trip at 28 Amps Isolated / Isolate Switch is in Isolate	SS/ESOL/178 J4/197 Thermal overload and O.C. Trip coils in Bar. 2-42014/MCC-205	QAD 178 197 10 & 11 Sh. 40

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APPENDIX PAGE: H VERTICAL COLUMN: 8

WINDUP TITLE	1. INDICATED CONDITION 2. CORRELATE WITH INDICATION WHICH VERIFY OR FINDING TRAFFIC	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM 1. No Auto Action 2. Refer to reactor coolant pump Off-Normal Procedure #2-0120034	SETPOINT > 250 psig	SENSING ELEMENT NUMBER & LOCATION PIA-2215	REFERENCE Q40 150
PCP CIRCUIT DIFF PRESS HI-III	1. Possible PCP seal failure 2. (A) Check bleedoff pressure at PIA-2215 on RTCB - 205 (B) Check PCP seal pressures on RTCB-203 (C) Check controlled bleedoff flow indicators on RTCB-203	1. No Auto Action 2. Refer to reactor coolant pump Off-Normal Procedure #2-0120034	> 250 psig	PIA-2215	Q40 150
PCP CIRCUIT DIFF PRESS HI	1. Possible PCP seal failure 2. (A) Check bleedoff pressure at PIA-2215 on RTCB - 205 (B) Check PCP seal pressures on RTCB-203 (C) Check controlled bleedoff flow indicators on RTCB-203	1. No Auto Action 2. Refer to reactor coolant pump Off-Normal Procedure #2-0120034	> 120 psig	PIA-2215	Q40 150
CHC HP ZC SUCT PRESS LO / OVERLO/THIP	1. (A) Suction pressure available to pump is too low (B) Charging pump has tripped due to: 1) Overcurrent 2) Breaker racked out at load center 2. (A) Check flow indicator PIA-2212 on RTCB-205 (B) Charging pump reading indicating lights	1. Pump breaker open 2. Refer to Charging & Lockdown Off-Normal Procedure 2-0210030	< 10 psig Time Dependent O.C. Trip	ZI-1, r, t IS-22242 Time dependent O.C. Trip is in Breaker 2-40307/12-C, 2AB	Q40 179 FD & MD Sh. 16
CHC HP ZC OIL LP TRIP / OIL. DR. LO / STFC PR LM. LO	1. (A) Insufficient oil pressure to pump brags (B) Insufficient oil in pump (C) Insufficient level in stuffing box 2. N/A	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 LM LDC < 7 OIL in pump STFC DR LM LO < 10"	63, ZI, 712 LIA-22332 IS-22342	Q40 179
THANK	THANK				
CHC HP ZC RH/DC V-2553 OVRD/MD SS ESOL	1. Charging pump recirc to VCT valve V-2553 (A) M11 not operate from RTCB-205 (B) Breaker has tripped on overload or, (C) Breaker has tripped on overcurrent or, (D) Breaker has been turned off on MCE- 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 permissible	Thermal Overload or O.C. Trip at 28 Amps Normal / Isolate Switch is in Isolate	SS/ESOL/179, 74/198 Thermal overload and O.C. Trip coils in Bkr. 2-42446/103-2AB	Q40 179 198 FD & MD Sh. 44

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ANNUNCIATOR PANEL N VERTICAL COLUMN 1

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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	SETRPOINT	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 & Hose up another tank to receive degassed liquid. If low, secure discharge lineup.	HI-97X LO-4Z	LIA-6610 LIA RTGB-205	QAD 538 P&ID 2998-G160
H/U TK 2A PRESS PI/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	QAD 540 P&ID 2998-G160
RDT LEVEL HI/LO N-17	1. High or low level in reactor 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 HRT's. If low, stop or verify stopped RDT pumps.	HI-82Z LO-21Z	LIA-6601 LIA RTGB-205	QAD 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 HRT'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	QAD 540 P&ID 2998-G160
PRIMARY COOL SAMPLE VALS CIS OVERRIDE N-33	1. Primary Coolant Sample valves open with CIS present 2. CIS Actuation indicating lights, CIS annunciation & 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 IS-5200 IS-5203 RTGB-206	QAD 578
WASTE 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 Annunciator Waste Concentrator Control Panel	QAD 568 P & ID 2998-G167

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ANNUNCIATOR PANEL N VERTICAL COLUMN 2

ALARM TITLE	1. INDICATED CONDITION 2. CONDENSED MESSAGE WHICH VERIFY OR FINDS THE PROBLEM	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
H ₂ O TK 2B LEVEL HI/LO	N-2 1. High or low level in 2B Holdup Tank. 2. Holdup Tank 2B Level Indicator (11A-6609)	1. Stops holdup drain pump on low level. 2. Check tank level. If high, secure tank & blow up another tank to receive degassed liquid. If low, secure discharge lineup.	HI-97% LO-42	11A-6609 11A-6609-205	QAD 536 FALD 2998-G160
H ₂ O TK 2B PRESS HI/LO	N-2 1. High or low press. in 2B Holdup Tank. 2. Holdup Tank 2B Pressure Indicator (PS-6609)	1. NRE 2. If press. high, check level. If full, secure tank for processing & place another tank in service. If level normal, ck h ₂ regulator. If press. low, ck regulator for proper setting. Adjust as necessary.	HI-10 psig LO-5 psig	PS-6609 Holdup Tank 2B	QAD 561 FALD 2998-G160
H ₂ N ₂ SUPPLY PRESS HI/LO	N-10 1. High or low h ₂ supply pressure. 2. NRE	1. NRE 2. Check h ₂ DEMAR, press., regulator, and system lineup. If low, place standby h ₂ bottles in service. If high, adjust reg. to proper setting.	HI - 660 psig LO - 600 psig	PS-6662 h ₂ supply manifold	QAD 566 FALD 2998-G163
H ₂ N ₂ SUPPLY PRESS HI/LO	N-18 1. High or low h ₂ supply pressure. 2. NRE	1. NRE 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	QAD 566 FALD 2998-G163
GAS ANALYZER TROUBLE	N-26 1. Alarm condition on gas analyzer 2. NRE	1. NRE 2. Notify Chemistry Dept. to check gas analyzer and take action as indicated by alarm condition.	N/A	N/A Gas Analyzer	QAD 564 FALD 2998-G164
BA CTR 2A CONTROL PNL	N-34 1. E/A concentrator 2A trouble 2. Local control panel 2A	1. NRE 2. Check N/A concentrator control panel 2A for alarm & take necessary action.	N/A	Local Annunciator 2A BA CTR. Control Panel	QAD 560 FALD 2998-G165
N-42					

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ANNUNCIATOR PANEL N VERTICAL COLUMN 3

SYMBOLOGY	INDICATED CONDITION	AUTO ACTION	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
N-3 H/O TK 2C PRESS HI/LO	1. HIGH OR LOW PRESS. IN 2C HOLDUP TANK 2. HOLDUP TANK 2C PRESSURE INDICATOR (LIA-6608)	1. OPERATOR ACTION - VALID ALARM 1. Stops holdup drain pump 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 - 972 LO - 42	LIA-6610 LIA RTCB 205	QAD 539 P&ID 2998-G16
N-11 H/O TK 2C PRESS HI/LO	1. High or low press. in 2C Holdup Tank 2. Holdup Tank 2C Pressure Indicator (PS-6608)	1. NRE 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-6608 Holdup Tk 2C	QAD 541 P&ID 2998-G16
N-19 FLASH TANK L/DEL HI/LO	1. High or low level in Flash Tank. 2. Flash Tank level indicator controller	1. Stops Flash Tank pps on low level. Inverts to Holdup Tanks on high. 2. If level low, chk pps secured. If level high, chk for diverting & flash tank pps running. If pps did not auto start, determine cause.	HI - 852 LO - 102	LIA-6604 LIA RTCB-205	QAD 541 P&ID 2998-G16
N-27 FLASH TANK PRESS HI/LO	1. High or low pressure in Flash Tank 2. Flash Tank Pressure Indicator (PIA-6603)	1. NRE 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	QAD 540 P&ID 2998-G16
N-35 N ₂ SUPPLY PRESS HI/LO	1. High or low N ₂ supply pressure 2. NRE	1. NRE 2. Check N ₂ IDAR, press. regulator, and system lineup. If low, place standby N ₂ bottles in service. If high, adjust reg. to proper setting.	HI - 240 psig LO - 200 psig	PS-6661 N ₂ Supply HOLDUP	QAD 566 P&ID 2998-G16.3
N-43 PA CONC. 2P CONTROL. INL.	1. E/A concentrator 2P trouble 2. Local control panel 2B	1. NRE 2. Check E/A concentrator control panel 2B for alarm & take necessary action.	N/A	Local Annunciator 2B PA CONC Control Panel	QAD 572 P&ID

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ANNUNCIATOR PANEL N 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
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. Stop 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 RIGB-205	GD 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 2D Pressure Indicator (PS-6607)	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 for proper setting. Adjust as necessary	HI - 10 psig LO - .5 psig	PS-6607 Holdup Tank 2D	GD 541 P&ID 2998-G160
FUEL HLDG BLDG WATER SPAL DEFIATED N-20	1. Low N ₂ pressure between "C" 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 Patch	GD 186
FUEL POOL PP DISCH HBR 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 PIS Discharge Hdr	GD R2 P&ID 2998-G140
WM LOCAL ALARM GROUND IE / 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	Grd Det, Pwr Fail Local WM Annunciator Panel	GD 567
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. Trip trips 2. Investigate cause of pump trip and correct.	N/A	74/180, 74/181 74/182 Ramp Bowler	GD 180 181 182

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ANNUNCIATOR PANEL N VERTICAL CHAIN 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
SCBIF LOCAL ALARM N-5	1. Local alarm or power failure at SCBIF. 2. NONE	1. NONE 2. Check local SCBIF panel for alarm condition	N/A	74 SCBIF	Gd 1435 S/C Shutdown Treatment Gd 3509-B-327
UNPROC BLDN UNIT 2 RADIATION III N-13	1. Unprocessed bldown has high radiation at SCBIF 2. NONE	1. Discharge valve to canal (2-RCV 23-1) closes and valve to Flowdown Treatment Facility (23-2) opens. 2. Verify valves 23-1 & 23-2 cycle as required Notify Chemistry Dept. for chemical sample.	(later)	74 SCBIF	Gd 1359 S/C Flowdown Treatment Gd 3509-B-327
RX CAVITY SUMP LEVEL HI-4/1 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 #2-012031.	4"8" From Top	IS 06-2 Rx Cavity Sump	Gd 574 P&ID 2998-0888
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 clear, check for pump failure or high leak rate into sump.	5'4" From Top	IS 06-2 Rx Cavity Sump	Gd 574 P&ID 2998-0888
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 alarm condition and take necessary action.	N/A	RE-301T Waste Management Local Panel	Gd 587 P&ID 2998-0992 2998-G160 thru 2998-G171

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ANNUNCIATOR PANEL N 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
WM PA HI TR SYS 2A/2B LOCAL ALARM R N-6	1. Trouble in 2A or B Waste Management for Heat Tracing System. 2. NONE	1. NONE 2. Check local control panel or reflash module RA-RAB-6 on FL 1-5 of the RAB. Take necessary action.	N/A	RA-RAB-6 WM/BA Heat Tracing Local Control Pnl	QAD 565 P&ID 2998-0192, 152, 161, 165, 166, 167
PROC FLIN TO DISCH CANAL RADIATION HI N-14	1. Processed blowdown to discharge canal has high radiation. 2. NONE	1. Blowdown discharge valve to canal (2-RCE 23-1) closes. 2. Verify 2-RCV 23-1 closes (RTG 205) as required. Notify Chemistry Dept. for chem-	(later)	74 SGR	QAD 1362 Blowdown Treatment QAD 3509-b-327
LAUN & CHEM DRAIN SUMP LEVEL HI N-22	1. Laundry and chemical drain sump has high level. 2. NONE	1. NONE 2. Check pps start for laundry and/or chem. drain sump. Check if level alarm clears as sumps pumped down. Check that pumps stop when sump is pumped down.	1 Ft. from on both sumps	IS-06-3 IS-06-4 Laun & Chem Drain Sump	QAD 534 P&ID 2998-0162
COND PTT / YARD SUMP LEVEL HI N-30	1. High level in the Condenser Ptt Sump or the Yard Sump. 2. NONE	1. NONE 2. Verify sump pumps are running. Determine leakage source and isolate.	COND PTT - 4 Ft. Yard Sump - 3'3"	IS-06-7 IS-06-8 Condenser Ptt & Yard Sump	QAD 535, 7-5 P&ID 2998-0067
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 CM into Reactor cavity sump	IS-07-12 Reactor Cavity Sump	QAD 576 P&ID 2998-0088

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ANNUNCIATOR PANEL N 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
PORIC ACID MAKEUP TK 2A LEVEL HI/LO N-7	1. High or low level in the '2A' BAW Tank. 2. BAWT '2A' Level Indication (LIA-2206)	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	QAD 155 P&ID 2998-G121
PORIC ACID MAKEUP TK 2A LEVEL LO/LO N-15	1. Low-low level in the '2A' BAW Tank. 2. BAWT '2A' Level Indication (LIA-2206)	1. NONE 2. Check level. Verify BAW 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	QAD 155 P&ID 2998-G121
CMCS BA HTC SYS 2A/2B LOCAL ALARM N-23	1. Trouble in 2A or 2B CMCS Ibric Acid Heat Tracing 2. NONE	1. NONE 2. Check local control panel or reflash modules RA-RAB-7, -8, and -9 on EI. 19.5' in the RAP. Refer to Tech Specs 3.1.2.1 & 3.1.2.2 for necessary actions.	N/A	RA-RAB-7 CMCS/BA Hot Tracing Local Control Pnl	QAD 1558 P&ID 2998-G121 2998-G122
PORIC ACID MAKEUP TK 2A TEMP HI/LO N-31	1. High or low temperature in BAW 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 BAW Tank 2A	QAD 168 169 P&ID 2998-G121
BA MAKEUP PP DISCHARGE PRESS LO N-39	1. Low BA pump 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 backup as necessary. If pump was operating, determine cause of low press. & take necessary action.	85 psig	PS-2206 PS-2208 BAW Pumps Discharge Hdr	QAD 174 P&ID 2998-G121
PORIC ACID MAKEUP PP 2A OVERLOAD / CS OFF/SS ISOL. N-47	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-BUR-2A RTGB 205	QAD 174 P&ID 2998-G121

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ANNUNCIATOR PANEL N VERTICAL COLUMN 8

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 MAKEUP TK 2B LEVEL HI/LO N-8	1. High or low level in the '2B' BAW Tank 2. BAWT '2B' Level Indication (LIA-2208)	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 and 3.1.2.8.	HI-92% LO-86%	LIA-2208 LIT/LIA-2208 LIA RTCB 205	OWD 155 P&ID 2998-G121
BORIC ACID MAKEUP TK 2P LEVEL LO/LO N-16	1. Low-low level in the '2B' BAW Tank. 2. BAWT '2B' Level Indication (LIA-2208)	1. NONE 2. Check level. Verify BAW pump off and fill tank with BA batch tank. Refer to Tech. Specs 3.1.2.7 & 3.1.2.8.	18%	LIA-2208 BAW TK 2B	OWD 155 P&ID 2998-G121
REACTOR SUMP ISOL VALVES CIS/SIAS OVERRIDE N-24	1. Rc sump isolate valves (ICV-07-11A & ICV-07-11B) open with CIS or SIAS present. 2. NONE	1. NONE 2. Close ICV-07-11A & ICV-07-11B on RTCB-205 IF NOT NEEDED.	N/A	94-1, 94-2 3-1, 3-2 ICV-07-11A ICV-07-11B RTCB-205	OWD 576 P&ID 2998-G088
BORIC ACID MAKEUP TK 2P TEMP HI/LO N-32	1. High or low temperature in BAW Tank 2P. 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 BAW TK 2B	OWD 170/171 P&ID 2998-G121
BORIC ACID FLOW HI/LO N-40	1. Deviation bet. BA flow setpoint and actual flow. 2. PRC 2210Y	1. NONE 2. Check BA flow & determine why it has changed from the desired setpoint.	1 GPM Difference bet. Setpt. & Actual Flow	FA-2210Y HS-2210/163 62X-2512 FRC 2210Y RTCB 205	OWD 192 P&ID 2998-G121
BORIC ACID MAKEUP TP 2P 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 RTCB 205	OWD 175

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ANNUNCIATOR PANEL P 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
MINIFLO ISOL V-3495/3659 RAS-FAIL OPEN/ NO RAS-CLOSED P-1	1. (A) Miniflow isolation valve(s) 3495/3659 failed to close on RAS, or (B) Valve(s) in closed position with no RAS. 2. (A) RAS actuation indicating light chnl. 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 (LATER)	OWD 1520
BLANK P-11	BLANK			-----	
MINIFLOW ISOL V-3659 OVERLOAD P-21	1. (A) Breaker trip on overload. (B) Fuse Flow 2. Valve position indication	1. NONE 2. Verify valve position/close locally if required.	(later)	74 ----- Local at Breaker	OWD 244
S/D CLC LN 2A W/O V-3536 OPEN P-31	1. SID Warmup valve train A open 2. Valve position indication	1. NONE 2. Close V-3536 unless warming up SID or equalizing boron.	N/A	33 Value Limit Switch	OWD 1510
BLANK P-41	BLANK			-----	
BLANK P-51	BLANK			-----	

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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
MINIFLO ISOL V-3496/3660 RAS-FAIL OPEN / NO RAS-CLOSED P-2	1. (A) Valve(s) failed to close on RAS. (P) Valve(s) in closed position with no RAS. 2. (A) RAS actuation indicating light chnl. A (P) Valve position indication	1. NONE 2. (A) Place valve(s) in closed position. (P) Place valve(s) in open position	RAS Present	3308, IS-3496-1/1520 IS-3660-1/245, RAS X B	OWD 1520
BLANK P-12	BLANK			-----	
MINIFLO ISOL V-3660 OVERLOAD P-22	1. (A) Breaker trip on overload (P) Fuse Flown 2. Valve position indication	1. NONE 2. Verify Valve position /close locally if required.	(later)	74	OWD 245
S/D CLF IN 2P W/U V-3539 OPEN P-32	1. SDG warmup valve train A open 2. Valve position indication	1. NONE 2. Close V-3536 unless warming up SDG or equalizing boron.	N/A	33	OWD 1511
BLANK P-42	BLANK			-----	
BLANK P-52	BLANK			-----	

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ANNUNCIATOR PANEL P 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CIS ACTUATOR CHANNEL A/P P-3	1. Containment isolation actuated 2. (A) Containment press indicators (P) Containment Rad. indicators.	1. CIS components actuate 2. (A) Carry out reactor/turbine trip procedure if not a dual malfunction and refer to LOCA/MSLE Procedures as appropriate. (P) If malfunction unisolate cont. using overrides as applicable.	5 psig or 10 R/IR	CIS-A, CIS-B ----- ESFAS Panel	OWD 330/331
CONTAINMENT PRESS HI CIS CIRCL. 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 -----	OWD 295
CONTAINMENT PRESS HI CIS CIRCL. PNE-TRIP P P-23	1. Indicates increased containment pressure. 2. ESFAS CIS press MA, MB, MC, MD	1. NONE 2. (A) Verify increased cont. pressure. (P) Insure Reactor/Turbine Trip if pressure exceeds 4 psig.	(later)	RA-RAB-17 ----- ESFAS Panel	OWD 1570
BLANK P-33	BLANK			-----	
BLANK P-43	BLANK			-----	
BLANK P-53	BLANK			-----	

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ANNUNCIATOR PANEL P VERTICAL GROUP 4

WIRE TITLE	1. INDICATED CONDITION 2. CORREL. WITH INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PLANK P-4	PLANK			---	
PLANK P-14	PLANK			---	
LINE WTR TO CW PHS ISOL. WAS OVRD/ SIAS OVRD P-24	1. Major overload or valves open with SIAS present 2. Position Indication Lights 1. Indicates increasing containment H_2 concentration 2. H_2 Panel & Recorder	1. NRE 2. (A) Check Breaker (F) Close valve(s) as applicable 1. NRE 2. Notify Chemistry Dept.	N/A 42	Limit SW at Valve(s) AHI-1 Behind RTCB	QAD 1205
H_2 ANALYZER CIRC HI P-34	1. Indicates failure of analyzer 2. Verify poor ON, valve alignment on H_2 panel	1. NRE 2. Notify Chemistry Dept.	N/A	CR2 Behind RTCB	QAD 1205
H_2 ANALYZER SYSTEM FAILURE P-44	PLANK			---	
PLANK P-54	PLANK			---	

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PLANT ANNUNCIATOR SUMMARY

ANNUNCIATOR PANEL P 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 RAD HI CIS CHNL. TRIP P-5	1. One or more CIS HI RAD bistables tripped. 2. ESFAS CIS RAD MA, MP, 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	OWD 295
CONTAINMENT RAD HI CIS CHNL. PRE-TRIP P-15	1. Indicates increased cont. radiation. 2. ESFAS CIS RAD MA, MP, MC, MD	1. NONE 2. Compare cont. RAD monitors	(later)	74 ----- ESFAS Panel	OWD 157A
BLANK P-25	BLANK			-----	
PERSONNEL/EMERG AIR LOCK 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	IS-2, IS-4, IS-6, IS-8 ----- Door Limit switches thru Sec. Computer.	OWD 514
BLANK P-45	BLANK			-----	
BLANK P-55	BLANK			-----	

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR PANEL P 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
MN FIDTR ISOL. HCV-09-1A ACCUM PRESS IO/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 IO press condition. (P) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, IS1, IS2, IS3 ----- Local Aux Feed Area	GND 655
MN FIDTR ISOL. HCV-09-1P ACCUM PRESS IO/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 IO press condition. (P) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, IS1, IS2, IS3 ----- Local Aux end Area	GND 656
MN FIDTR ISOL. HCV-09-2A ACCUM PRESS IO/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 IO press condition. (P) Check fuses for Control Pwr. (C) Notify I & C	(later)	74, IS1, IS2, IS3 ----- Local Aux Feed Area	GND 671
MN FIDTR ISOL. HCV-09-2P ACCUM PRESS IO/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 IO press condition. (P) Check fuses for Control Power (C) Notify I & C	(later)	74, IS1, IS2, IS3 ----- Local Aux Feed Area	GND 672
PLANK P-46	PLANK			-----	
PLANK P-56	PLANK			-----	

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR PANEL P 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
MSIS CTRL A ACTUATION P-7	1. Main Steam Isolation A Train actuated 2. (A) "A" S/G press and actuation indicating lights (E) Cont. press indications	1. MSIS components isolated 2. (A) Verify components function in auto or perform manually (E) Carry out Reactor/Turbine Trip & refer to Main Steam Line Break Proc. 2-0810040.	600 psig S/G Press 5 psig Cont. Press	MSIS-A ----- ESFAS Panel	QWD 330
MSIS SC 2A PRESS LO CTRL TRIP P-17	1. One or more MSIS S/G "A" press bistables tripped. 2. ESFAS MSIS press S/C 2A-MA, MB, MC, MD	1. MSIS 1 of 2 of 4 2. (A) If only one channel check for malfunction (E) If 2 or more carry-out trip procedure and refer to MSIB Procedure 2-0810040.	600 psig	MSIS-MA, MB, MC, MD ----- ESFAS Panel	QWD 295
BLANK P-27	BLANK			-----	
BLANK P-37	BLANK			-----	
MSIV HEV-08-1A AIR PRESS LO/ IC FAILURE P-47	1. Low air press in accumulator or loss of D.C. Control Power. 2. (A) Local panel air pressure (E) Valve position indicating lights	1. NONE 2. (A) HEV-08-1A fails shut on total loss of air. Restore air supply to accumulator. (E) Determine cause of D.C. failure.	70 psig	74, ES-08-12A ----- (later)	QWD 312
MSIV HEV-08-1A FAIL TO CLOSE P-57	1. HEV-08-1A failed to close 2. Valve position indicating lights	1. NONE 2. Determine cause of failure	N/A	94X, 33X ----- Valve limit switches	QWD 312

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR PANEL P VERTICAL GAUGE 8

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 BLOCKED P-8	1. Channel A MSIS blocked 2. S/G press MA, MP, MC, MD	1. Blocks MSIS Chnl A 2. Verify S/G press < 700 psia	N/A	MSIS-A ----- ESFAS Panel	QAD 330
MSIS CHNL A ACTUATION BLOCK HURMESS P-18	1. "A" S/G press < 700 psia 2. S/G PRESS MA, MP, MC, MD	1. NONE 2. Verify S/G "A" press < 700 psia block MSIS "A" if shutdown in progress.	700 psia	MSIS-A ----- ESFAS Panel	QAD 330
BLANK P-28	BLANK			-----	
FW PP 2A/2B DESCH 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 over- load (P) Notify Electrical Dept.	(later)	74/621, 74/616 ----- Local at Breaker	QAD 621
BLANK P-48	BLANK			-----	
MSIV PYP 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 over- load (B) Notify Electrical Dept.	(later)	74 ----- Local at Breaker	QAD 311

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ST. LUCIE UNIT NO. 2
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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 F ACTUATION P-9	1. Main Steam Isolation B Train actuated 2. (A) "F" S/C press and actuation indicating lights (F) Cont. press indications	1. MSIS components isolate 2. (A) Verify components function in auto or perform manually (F) Carry out reactor/turbine trip & refer to MSLB 2-0810040	600 psia S/C press 5 psig Cont. Press	MSIS-B -----	QAD 331
MSIS SC 2P PRESS LO CHNL TRIP P-19	1. One or more MSIS S/C "F" press bistables tripped. 2. ESPAS MSIS press S/C 2P-1A, MB, MC, MD	1. MSIS If 20F4 2. (A) If only on channel check for malfunction (B) If 2 or more carry out trip procedure and refer to MSLB Procedure 2-0810040	600 psia	MSIS-1A, MB, MC, MD -----	QAD 295
BLANK P-29	BLANK			-----	
BLANK P-39	BLANK			-----	
MSIV HCV-08-1B AIR PRESS LO/ IC FAILURE P-49	1. Low air press in accumulator or loss of IC power 2. (A) Local panel air pressure (F) 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 IC failure	70 psig	74, FS-08-128 -----	QAD 315
MSIV HCV-08-1B FAIL TO CLOSE P-59	1. HCV-08-1B failed to closed 2. Valve position indicating lights	1. NONE 2. Determine cause of failure	N/A	94X, 33X -----	QAD 315

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ANNUNCIATOR PANEL P 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
MSIS CHNL F ACTUATION BLOCKED P-10	1. Channel F MSIS blocked 2. S/G Press MA, MP, MC, MD	1. Blocks MSIS Channel F 2. Verify S/G press < 700 psia	N/A	MSIS B ----- ESF/AS Panel	OMD 331
MSIS CHNL F ACTUATION BLOCK PERMISS P-20	1. "B" S/G press < 700 psia 2. S/G press MA, MB, MC, MD	1. NONE 2. Verify S/G "B" press < 700 psia block MSIS "F" if shutdown in progress.	700 psia	MSIS-B ----- ESF/AS PANEL	OMD 331
BLANK P-30	BLANK			-----	
RAP TRIP III/ 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) Have operator check fuses/reset over- load. (B) Notify Electrical Department	(later)	TS-08-7B(1-6) TS-16-1A(1-6) ----- Local at Breaker	OMD 751/752
BLANK P-50	BLANK			-----	
MSIV RYP 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) Have operator check fuses/reset over- load (F) Notify Electrical Department	(later)	74 ----- Local at Breaker	OMD 314

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR PANEL 0 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
ENG SPCD 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)	ESC-HA, MB, MC, MD SA, SE ----- Behind KTUB-206 or or HVAC Panel	OWD 150
PLANK 0-11				-----	
HPSI PP 2B OVERLOAD 0-21	1. Thermal overload of HPSI Pump 2B 2. (A) Ammeter High before trip. (E) 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 Pkr 2-20405 locally	(later)	74-1, 74-4 (later) ----- Breaker 2-20405/2B3- 4160V Bus	OWD 238
HPSI PP 2P START FAIL. / SIAS OVERD 0-31	1. (A) HPSI Pump 2B fail to auto start on SIAS (B) OR, HPSI Pump 2P control switch in stop 2. (A) HPSI pump 2P ammeter (E) 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	OWD 238
PLANK 0-41				-----	
HPSI WLV 3616/26/36/46 OVERLOAD / SIAS OVERD 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	OWD 258

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ANNUNCIATOR PANEL 0 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
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 undertest (P) Auto test lamp on steady on overtest	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	ESC-6A ----- ESFAS Panel behind RTUB-206	Q40 1580
BLANK 0-12	BLANK			-----	
BLANK 0-22	BLANK			-----	
BLANK 0-32	BLANK			-----	
BLANK 0-42	BLANK			-----	
BLANK 0-52	BLANK			-----	

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ANNUNCIATOR PANEL Q VERTICAL CHAIN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHPOINT	SENDING ELEMENT NUMBER & LOCATION	REFERENCE
ONDMT PRESS SIAS MEAS CONT. TRIP 0-3	1. High containment pressure 1 or more channels has exceeded trip value. 2. RTCB-206 containment pressure indication channels MA, MP, MC, or MD high pressure indication	1. 2/4 logic, SIAS actuates 2. (A) Verify high containment pressure condition (F) Verify SIAS or initiate manually (C) Verify Reactor & Turbine Trip (D) Follow LOCA Procedure #2-0120042	5 psig HI	SIAS-PA, MB, MC, MD ----- ESPAS Cabinet or SA, SE Actuation Cabinets	QWD 295
PLANK 0-13	PLANK			-----	
HPSI PP 2P DISCH V-3654 CLOSE 0-23	1. HPSI Pump 2P 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 (E) Open locally if required.	< Fully Open Limit Switch Contact	33 Valve position Limit Switch ----- V-3654 2B HPSI ROOM	QWD 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. (E) Open locally if required	< Fully Open Limit Switch Contact	33 Valve Position Limit Switch ----- V-3656 2A HPSI Room	QWD 279
PLANK 0-43	PLANK			-----	
PLANK 0-53	PLANK			-----	

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ANNUNCIATOR PANEL C VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALVE ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK O-4	BLANK			-----	
BLANK O-14	BLANK			-----	
BLANK O-24	BLANK			-----	
SI TK ISOL. V-3614/3624 CLOSE O-34	1. 2A2 and/or 2A1 SIT Isolation valve not fully open. 2. Valve position indication	1. Valves automatically open when RCS pressure > 500 psia. 2. Verify power available and open the valve(s) if RCS pressure > 500 psia	< Fully Open Limit Switch Contact	33 Open Limit switch on ----- V3614, 3624 In Containment (19.5)	OW's 269 270
SI TK ISOL. V-3614/3624 OVERLOAD O-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 MOC (24) 2-41311/2A6 MOC	OW's 269 270
BLANK O-54	BLANK			-----	

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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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PLANK 0-5	PLANK			-----	
PLANK 0-15	PLANK			-----	
PLANK 0-25	PLANK			-----	
SI TK ISOL V-3634/3644 CLOSE 0-35	1. 2B1 and/or 2B2 SIT Isolation valve(s) not fully open 2. Valve position indication	1. Valves automatically open when RCS pressure > 500 psia 2. Verify power available and open the valve(s) if RCS pressure > 500 psia	< Fully Open Limit Switch Contact	33 ----- Open Limit Switch on Valves	GD's 271 272
SI TK ISOL V-3634/3644 OVERLOAD 0-45	1. Motor operator on either 2B1 or 2B2 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) 2-42117/2B6 MCC (44) 2-42048/2B5 MCC	GD's 271 272
PLANK 0-55	PLANK			-----	

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ANNUNCIATOR PANEL Q 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
SIC SECTION CROSS TIE V-3545 OPEN Q-6	1. SIC section cross connect valve V-3545 open 2. Valve position indication	1. NONE 2. (A) Verify V-3545 HS in locked closed (B) Close manually if required	< Fully Closed Limit Switch Contact	33 Open Limit Switch V-3545 (later)	QAD 1501
HOT LEG INJECT LOOP 2A PRESS HI 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 gauge 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 RUCB-206	QAD 1512
HPSI TO HE 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	QAD'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; lights-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	QAD 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 hand switches in local 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	QAD's 233 234
S/D CLG CONT V-3306 CLOSE/CONT SIGNAL LOSS Q-56	1. SIC Heat Exchanger Bypass PCV-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 indications (B) SIC Flow Indications	1. NONE 2. NORMAL AT POWER; (A) Verify V-3306 CS in "Locked Open" position. ON SHUTDOWN COOLING; (B) Take manual control on Modutronic Controller and open. (C) Verify \geq 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 UPSI Room. PC 3306-1/Controller RUCB-206	QAD's 1516 1528

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ANNUNCIATOR PANEL Q 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
SOC Suction CROSS TIE V-3545 OVERLOAD Q-7	1. SOC suction 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	QAD 1501
HOT LEG INJECT LOOP 2B PRESS HI Q-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-3320	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-3320 Pressure Indicating Alarm SIOMA ----- RIGB-206	QAD 1513
HPSI TO HOT LG 2B V-3551/23 OVERLOAD Q-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) 2-42066/2B5 MCC (23) 2-42065/2B5 MCC	QAD's 235 236
HPSI PP 2B DISCH V-3654 OVERLOAD Q-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 2-42059/2B5 MCC	QAD 277
HOT LEG INJECT LOOP 2B V-3523/3551 OPEN Q-47	1. One or both Hot Leg Injection valves Loop 2B open 2. Valve position indications	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	QAD 235 236
S/D CLG CONT V-3301 CLOSE/CONT SIGNAL LOSS Q-57	1. SOC 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 indications (B) SOC flow indications	1. NONE 2. (A) Verify V-3301 HS in open position (B) Take manual control on Modutronic Controller and open (C) Verify ≥ 3000 GPM flow on SOC	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 LPSI Room ----- FC 3301-1 Controller RIGB-206	QAD 1517 1528

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ANNUNCIATOR PANEL Q VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERFOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/D CLG ISOL V-3651/3652 OPEN Q-8	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 SOC (B) Place hand switch to locked closed position	< Fully Closed Limit Switch Contacts	33/253, 33/254 Limit Switches V-3651, 3652	QAD's 253 254
S/D CLG ISOL V-3651/3652 OVERLOAD Q-18	1. Loop 2B Hot Leg Suction Valves V-3651/3652 over- load 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) 2-42121/286 MCC (52) 2-41243/2A5 MCC	QAD's 253 254
S/D CLG ISOL V-3664 OPEN Q-28	1. Loop 2A Hot Leg Suction Valve V-3664 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch V-3664 (later)	QAD 1502
S/D CLG HX 2A V-3456 OPEN Q-38	1. 2A SOC Heat Exchanger Return Valve V-3456 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (B) Place handswitch to local closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch V-3456 2A UPSI Room	QAD 1504
S/D CLG HX 2A V-3517 OPEN Q-48	1. 2A SOC Heat Exchanger Inlet Valve V-3517 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contacts	33/Limit Switch V-3517 2A UPSI Room	QAD 1506
S/D CLG TCV V-3657 OPEN Q-58	1. 2A SOC temperature control valve open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (B) Place handswitches to locked closed position	< Fully Closed Limit Switch Contacts	33/Limit Switch V-3657 (later)	QAD 1514

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ANNUNCIATOR PANEL Q 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	SEQUENCE	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
S/D CLG ISOL V-3480/3481 OPEN Q-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 SOC (B) Place handswitch(s) to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33/249, 33/250 Valve Limit Switch ----- V-3480/81	Q4D 249 250
S/D CLG ISOL V-3480/3481 OVERLOAD Q-19	1. Loop 2A Hot Leg Suction Valves V-3480/3481 Over- load 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	Q4D 249 250
S/D CLG ISOL V-3665 OPEN Q-29	1. Loop 2B Hot Leg Suction Valve V-3665 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (B) Place handswitch to locked closed position (C) Close manually if required	< Fully Closed Limit Switch Contact	33, Valve Limit Switch ----- V-3665 (later)	Q4D 1503
S/D CLG HX 2B V-3457 OPEN Q-39	1. 2B SOC Heat Exchanger Return Valve V-3457 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (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	Q4D 1505
S/D CLG HX 2B V-3658 OPEN Q-49	1. 2B SOC Heat Exchanger Inlet Valve V-3658 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (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	Q4D 1507
S/D CLG TCV V-3612 OPEN Q-59	1. 2B SOC Temperature Control Valve V-3612 open 2. Valve position indication	1. NONE 2. (A) None, if on SOC (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)	Q4D 1515

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ANNUNCIATOR PANEL Q VERTICAL COLUMN 10

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSISTENT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK Q-10	BLANK			-----	
S/D COOLING V-3664/3536 OVERLOAD Q-20	1. Loop 2A Hot Leg Suction Valve V-3664 and/or SDC 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)	74/1506, 74/1510 (later) ----- Breakers (64) 2-41318/2A6 MCC (36) 2-41325/2A6 MCC	QAD's 1502 1510
S/D COOLING V-3665/3539 OVERLOAD Q-30	1. Loop 2B Hot Leg Suction Valve V-3665 and/or SDC 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	QAD 1503
S/D COOLING V-3656/3517/ 3657 OVERLOAD Q-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	QAD 1504
S/D COOLING V-3657/3658/ 3512 OVERLOAD Q-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 breakers 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	QAD 1505
BLANK Q-60	BLANK			-----	

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ANNUNCIATOR PANEL P 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	SETHPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
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	GWD-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 H 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	GWD-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 Tank 2A1	GWD-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	GWD-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 LW. (C) Check SI leakage test line line-up (D) Verify tank line-up	HI-HI 92.5Z	LIA-3322 Level Indicating Alarm SIGMA Local at Tank 2A1	GWD-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 75.5Z	LIA-3322 Local at Tank 2A1	GWD-1521

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ANNUNCIATOR PANEL R 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	SETHPOINT	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. (P) 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 RTCB-206	GMD-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 (P) LIA-3311 SIT W/R level indicator	1. NONE 2.(A) Close N ₂ supply to tank (P) Vent excess N ₂ to reduce press. (C) Verify level not increasing	HI-HI 643 PSIG	PS-3313 Pressure Switch Local at Tank 2A2	GMD-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 (P) LIA-3311 SIT W/R level indicator	1. NONE 2.(A) Fill with H 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	GMD-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 (P) Verify no flow/press on SI leakage test line	1. NONE 2.(A) High level - Open fill/drain valve (P) Low level - check drain closed (C) Verify proper valve line-up (D) Verify proper level		LIA-3311 Level Indicating Alarm SIGMA RTCB-206	GMD-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 RTCB-206	GMD-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 15.5%	LIA-3312 Level Indicating Alarm SIGMA RTCB-206	GMD-1521

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ANNUNCIATOR PANEL R 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SI TK 2P1 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) Loss Press - verify vent closed - Increase N ₂ Press - Check for local leak (F) 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 SIGMA Local at Tank	QAD-282
SI TK 2P1 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 SIGMA Local at Tank	QAD-1522
SI TK 2P1 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	QAD-1522
SI TK 2P1 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 line-up (D) Verify proper level	HI - 88Z Lo - 80Z	LIA-3331 Level Indicating Alarm SIGMA Local at Tank	QAD-282
SI TK 2P1 LEVEL PI-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 line-up (D) Verify tank line-up	HI-HI 92.5Z	LIA-3332 Level Indicating Alarm SIGMA Local at Tank	QAD-1521
SI TK 2P1 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 line-up (C) Restore normal level	Lo-Lo 75.5Z	LIA-3332 Level Indicating Alarm SIGMA Local at Tank	QAD-1521

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ANNUNCIATOR PANEL R 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SI TK 2P2 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 RTGB-206	QWD-1583
SI TK 2P2 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	QWD-1522
SI TK 2P2 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	QWD-1522
SI TK 2P2 LEVEL HI/LO R-34	1. HI-Indicates in leakage from RCS LO-Indicates leakage from tank 2.(A) LIA-3341 and PIA-3341 (F) 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 RTGB-206	QWD-283
SI TK 2P2 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 RTGB-206	QWD-1521
SI TK 2P2 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 RTGB-206	QWD-1521

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ANNUNCIATOR PANEL R VERTICAL COLUMN 5

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

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ANNUNCIATOR PANEL 5 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	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL A/F ACTUATION R-6	1. SIAS A and/or F train actuated 2.(A) Multiple safeguards equip. start and actuation (P) Lo PRZR pressure/high containment press.	1. SIAS components actuate 2.(A) Verify reactor & turbine trip (E) Verify auto actions occur and follow LOCA Emerg. Proc. 2-0120042	5 PSIA hi Cont. Press. 1708 PSIA Low PRZR Pressure	SIAS-A, SIAS-B ESFAS Cabinet Relaid RTCB-206	OWD-280
PRZR PRESS LO SIAS MEAS CHNL TRIP R-16	1. One or more ESFAS PRZR press. Bistables has tripped 2. PIA-1102A, E, C, D PRZR safety channel press. indicators	1. SIAS if 2/4 channels trip 2.(A) Verify PRZR press (P) If channel failure bypass (C) If valid carry out action per LOCA Emergency Procedure no. 2-0120042.	1708 PSIA LOW	SIAS-PA, ME, MC, MD ESFAS Cabinet Relaid RTCB-206	OWD-295
PRZR PRESS LO SIAS CHNL ME-TRIP R-26	1. Low press on one or more PRZR press safety channels 2. PIA-1102A, E, 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-RAE-17 Reflash Panel (LATER)	OWD-1564
PLANK R-36	PLANK				
SI HEADER LOOP 2A1 PRESS HI R-46	1. SI Header 2A1 press above normal 2. PIA-3329 SI Loop press. indicator	1. NONE 2.(A) Verify header pressure (P) Verify SI Header 2A1 normal parameters (C) Verify RCS check valve integrity	HI-1000 PSIG Reset 900 PSIG	PIA-3329 Press Indicating Alarm SIOWA RTCB-206	OWD-281
SI HEADER LOOP 2A2 PRESS HI R-56	1. SI Header 2A2 press above normal 2. PIA-3319 SI Loop press. indicator	1. NONE 2.(A) Verify header pressure (B) Verify SI Header 2A2 normal parameters (C) Verify RCS check valve integrity	HI-1000 PSIG Reset 900 PSIG	PIA-3319 Press Indicating Alarm SIOWA RTCB-203	OWD-280

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ANNUNCIATOR PANEL R VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CORRELATE WITH INDICATION WHICH VERIFY OR PURSUANT THEREOF	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SIGNALING ELEMENT NUMBER & LOCATION	REFERENCE
ENC 3/3 OAP DOORS OPEN R-7	1. One or more ESC doors open 2. Visually check cabinet doors	1. NONE 2. Determine which door open & reason. Verify all doors closed except during maintenance or testing	Unit Switch Contact "OPEN"	Door Switches ESPAS Cabinet Behind RTCB-206	QAD-331
BLANK R-17	BLANK				
BLANK R-27	BLANK				
BLANK R-37	BLANK				
SI HEADER LOOP 2P1 PRESS HI R-47	1. SI header 2P1 press above normal 2. PIA-3339 SI loop press indicator	1. NONE 2.(A) Verify header press (B) Verify SIT 2B1 normal parameters (C) Verify BLS check valve integrity	HI-1000 psig Reset 900 psig	PIA-3339 Pressure Indicating Alarm SIGMA RTCB-206	QAD-282
SI HEADER LOOP 2P2 PRESS HI P-57	1. SI header 2P2 press above normal 2. PIA-3349 SI loop press indicator	1. NONE 2.(A) Verify header press (B) Verify SIT 2B2 normal parameters (C) Verify BLS check valve integrity	HI-1000 psig Reset 900 psig	PIA-3349 Pressure Indicating Alarm SIGMA RTCB-206	QAD-283

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ANNUNCIATOR PANEL B VERTICAL COLUMN 8

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETRPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SIAS CHANNEL ACTUATION BLOCK PERMISS R-8	1. Capability to manually block SIAS 2. PIA-1102 A, P, C, D, PRZR press safety channel indicators	1. NONE 2. Verify 3 of 4 PRZR press indications and block SIAS A & B if shutdown in progress	3/4 1808 ISIA Decreasing	SIAS-A, SIAS-B EFAS Cabinets Behind RTU-206	QAD-246 QAD-248
PACR/IT				-----	
LPSI PP 2A OVERLD/TRIP R-29	1. LPSI pump 2A thermal overload 2. Ammeter 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) (BREFMER)	QAD-251
LPSI PP 2A FAILURE/ SIAS OVERD/ RAS OVERD R-38	1.(A) LPSI pump 2A fail to start (F) LPSI pump 2A control switch in stop (C) LPSI pump 2A started after RAS 2.(A) LPSI pump 2A ammeter	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	QAD-251
LPSI PP 2A PUNNING/ V-3610/3611 CLOSING R-48	1. LPSI PP 2A running when hot leg suction valves have close signal 2.(A) LPSI PP 2A ammeter (B) Valve position indications	1. NONE (A) Reopen suction valves if possible (E) 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 BRK Contacts	QAD-249 QAD-250 QAD-251
LPSI VAL V-3615/3625 OVERLOAD/ SIAS OVERD R-58	1. Either V-3615/3625 LPSI Hdr. valves motor overload or control switch(s) in closed position 2.(A) Valve position indications (F) Control switch positions	1. NONE 2.(A) Place control switch(s) to auto (F) Control switch positions (C) Have operator check breaker	(LATER)	(74,3)/257, (74,3)/260, (LATER) Breakers (LATER) C.S. Contacts	QAD-257 QAD-260

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ANNUNCIATOR PANEL R VERTICAL COLUMN 9

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PIRROUNT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SEIZING 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	QAD-246
PACRYIT R-19				-----	
LPSI PP 2B OVRD/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	(LATER)	74-1, 74-2 (LATER) Breaker (LATER)	QAD-252
LPSI PP 2B FAILURE/ SIAS OVRD/ RAS OVRD R-39	1.(A) LPSI pump 2B fail to start (P) LPSI pump 2B control switch in stop (C) LPSI pump 2B started after RAS 2.(A) LPSI pump 2B ammeter (P) 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	(LATER)	74-3, 74-4, CS Rump Breaker Control Switch (LATER)	QAD-252
LPSI PP 2B RUNNING/ V-3651/3652 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 indications	1. NONE 2.(A) Reopen suction valves if possible (B) If (A) not possible stop LPSI 2B (C) Verify RCS press <275 psia	(LATER)	52/252, 42C/253, 42C/254 VW Limit Switches PP BRK Contacts (LATER)	QAD-252 QAD-253 QAD-254
LPSI VLV V-3635/3645 OVERLOAD/ SIAS OVRD R-59	1. Either V-3635/3645 LPSI HDR VLV motor overload or control switch(s) in closed position 2.(A) Valve position indications (B) Control switch positions	1. NONE 2.(A) Place control switch to Auto (B) Open manually if required	(LATER)	(74,3)/263, (74,3)/266 Local at Breaker (LATER)	QAD-263 QAD-266

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ANNUNCIATOR PANEL R VERTICAL COLUMN 10

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PLAINTEXT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETRPOINT	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 R6TB-206	QAD-248
BACKFIT R-20				-----	
HPSI PP 2A OVERLOAD/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)	QAD-237
HPSI PP 2A FAILURE/ SIAS/WRBD 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 HPSI Contacts (LATER)	QAD-237
LPSI/HPSI PP 2A/2B STRNR Δ/P HI R-50				RA-RAI-7 Ref Lash N/A	QAD-1209
AUX HPSI VAL 3617/27/37/47 OVERLOAD/ SIAS (WRBD) R-60	1.(A) Aux. HPSI valve motors overloaded (B) Aux. HPSI valve control switches in stop 2.(A) Valve position indications (B) Valve control switch positions	1. NONE 2.(A) Place control switch(es) to Auto (B) Open manually if required	(LATER)	(74,3)/259,262,265,268 Control Switch Contacts/Local At Breaker(s)	QAD-259

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ANNUNCIATOR PANEL 5 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
CDM 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. NRE 2. (A) If low, start standby pump and investigate. (B) If HI, check for isolated components (C) Refer to CDM Off-Normal #2-0310030	HI - 9500 GPM LO - 4000 GPM	FIS-14-1A (later)	ODD 217
CDM 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. NRE 2. (A) If pump failure, line up and start standby pump (B) Refer to CDM Off-Normal Proc. 2-0310030	LO - 60 psig	FIS-14-8A (later)	ODD 217
CDM NORMAL HTR ISOL HCV-14-8A/9 SIAS/ONRDD 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. NRE 2. (A) Investigate failure of valve to close. (or) reason valve was overridden open.	(later)	CS-202-1,3 RTD-206	ODD 202
CDM HP 2A OVERLOAD/TRIP S-31	1. (A) CDM pump has tripped on overcurrent, (B) OR, CDM pump has lost control power, (C) OR, CDM pump has been racked out 2. (A) Pump amps zero (B) Breaker indicator lights - green or out	1. (A) Pump trips - stops 2. (A) Lineup and start standby pump (B) Refer to CDM Off-Normal Proc. 2-0310030 (C) Notify Electrical Department	Thermal Overload or Time Dependent Over-current trip	74-1, 74-2 Bkr #2-20206 4160N Bus 2A3 In Cable Spreading Room	ODD 201
CDM HP 2A MOTOR BKG TRIP HI S-41	1. Indicates motor bearing overheating 2. NRE	1. NRE 2. (A) Have operator locally check bog, lubrication, excessive noise. (B) Lineup and start standby pump	HI - 90° F	FIS-14-28-1A1, 1A2 CDM Bldg. CDM pump 2A	ODD 219
CDM HP 2A BKR FAILURE / SS ISOL S-51	1. (A) The CDM pump has been given a start signal, but the pump has failed to start (B) OR the CDM pump has been isolated from the Control Room by H4/ISOL Switch 2. (A) Failure; pump indicate lights - green (B) ISMATE; 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 H4/ISOL switch to "normal" if applicable.	(later)	74-3, SS/ISOL Bkr #2-20206 4160N-Bus2A3 and H4/ISOL switch in cable spread room	ODD 208

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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	REFERENCE
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)	QAD 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)	QAD 218
CCW NORMAL HTR ISOL HCV-14-8B/10 SIAS/ONWARD 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)	CS-202-2,4 RIG-206	QAD 202
CCW PP 2B ON/OFF/TRIP S-32	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 or 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 over- current trip	74-1, 74-2 Bkr #2-20406 4160V-Bus 2B3 in Cable Spreading Room	QAD 205
CCW PP 2B MOTOR BRG TEMP HI S-42	1. Indicates motor bearing overheating 2. NONE	1. NONE 2. (A) Have operator locally check bgr. lubrication, excessive noise. (B) Lineup and start standby pump	HI -90° F	FIS-14-29-2B1, 2B2 CCW Bldg. CCW pump 2B	QAD 219
CCW PP 2B BRK 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 NH/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 NH/ISOL switch to "Normal" if applicable.	(later)	74-3, SS/ISOL Bkr #2-20406 4160V - Bus 2B3 and NH/ISOL switch in Cable Spreading Room.	QAD 205

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ANNUNCIATOR PANEL 5 VERTICAL COLUMN 3

WINKER TITLE	1. INDICATE CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ODM HX 2A HWP FLO HI	1. Low flow of HWP to ODM HX exchange 2A 2. (A) Verify by observing HWP 2A pump amps (B) ODM Header A press. (C) Check temperature indicator on ODM outlet on RTCP 206	1. NONE 2. (A) Check 2A HWP pump running. If not start standby pump (B) Check strainer D.P. (C) Check TCW-14-4A for proper operation (D) Refer to HWP Off-Normal Proc #2-0640030	LO - 7500 GPM	FES-21-9A ODM Bldg; outlet ODM HX 2A	OMD 217
ODM HX A/B THWP HI	1. High temperature in ODM headers 2. Read TR-25-2/2F point 17 on INWAC Control Panel	1. NONE 2. (A) Have N. O. check HWP flow (B) Strainer D.P. (C) Check proper operation of TCW-14-4A/4B (D) Refer to HWP Off-Normal #2-0640030 and ODM Off-Normal #2-0310030	HI - 150° F	TE-14-3A, 3B TR-25-2A Point 17 TR-25-2B Point 17 ODM Bldg. T.R. on INWAC Control Panel	OMD's 478 479
S/D HX 2A ODM FLO HI/LO	1. Excessive or low flow 2. Check FES-14-10A on RTCP-206	1. NONE 2. (A) Check ODM for proper operation (B) Check for proper valve lineup (C) Refer to ODM Off-Normal Proc 2-0310030	HI - 5300 GPM LO - 3850 GPM	FES-14-10A S/D Cooling HX Room 2A, RAB	OMD 217
ODM HP 2C HWP/THWP OMH/THWP	1. (A) ODM pump has tripped on overcurrent, (B) OK, ODM pump has lost control power, (C) OK, ODM pump has been racked out 2. (A) Pump amps zero (B) Breaker indicator lights - green or out	1. Pump trips - stop 2. (A) Lineup and start standby pump (B) Refer to ODM Off-Normal Proc 2-0310030 (C) Notify Electrical Department	Thermal Overload or Time Depen- dent over- current trip	74-1, 74-2 Br 2-20502 4160N-Bus 2AB Cable Spreading Rm.	OMD 209
ODM HP 2C HWP/THWP HI	1. Indicates motor bearing overheating 2. NONE	1. NONE 2. (A) Have operator locally check bkg. lubrication, excessive noise.	90° F	TES-14-29-1C1, 1C2 ODM Bldg 2C ODM pump	OMD 219
ODM HP 2C HWP FAILURE/ SS ESOL	1. (A) The ODM pump has been given a start signal but the pump has failed to start (B) OR, the ODM pump has been isolated from the Control Room by HWP/ESOL switch 2. (A) Failure; pump indicate light - green (B) Isolate; pump indicate lights - out	1. B. ESOLATE; loss of control from Control Room 2. (A) Investigate breaker failure locally, contact Electrical Dept. (B) Return HWP/ESOL switch to "NORMAL" if applicable	Fault in Br HWP/ESOL switch in Isolate	74-3, SS/ESOL Br 2-20502 4160N-Bus 2AL and HWP/ESOL switch in Cable Spreading Rm.	OMD 209

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ANNUNCIATOR PANEL S 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
BLANK S-4	BLANK			-----	
BLANK S-14	BLANK			-----	
BLANK S-24	BLANK			-----	
BLANK S-34	BLANK			-----	
ONLINE SEISMIC TRIGGER ACTUATION S-44	1. Unit 1 Seismic trigger has actuated, also indi- cating a Seismic event has occurred at St. Lucie 2. NONE	1. NONE 2. Refer to Tech Specs, Instrumentation	Alarms at 90% OFF	74-2 ----- Unit 1 Containment	GD 1209
CONTAINMENT TRIAXIAL ACCEL 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	Alarm at .01G vertical	74-1 ----- Unit 1 Containment	GD 1209

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ANNUNCIATOR PANEL S 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
CCW HX 2P BW FLO LO S-5	1. low flow of ICW to HT Exchanger 2B 2. (A) Verify by observing ICW 2P pump amps (B) ICW header P press. (C) Check temp. indicator on CCW outlet on RTCB-206	1. NONE 2. (A) Check 2P ICW pump running, if not start (B) Check strainer D.P. (C) Check TCV-14-4E for proper operation (D) Refer to ICW Off-Normal Proc 2-0640030	LO - 7500 GPM	FIS-21-9B ----- CCW Eldg., Outlet HX 2E	OWD 218
FUEL POOL HX CCW FLO HI/LO S-15	1. (A) Excessive or low CCW flow in the fuel pool HX. (B) On SIAS CCW flow is isolated 2. Check FIS-14-2 on RTCB-206	1. NONE 2. (A) If not SIAS, verify MV-14-17/19 open or open MV-14-18/20. (B) If lined up to E header shift to A header	HI - 3700 GPM LO - 2850 GPM	FIS-14-2 ----- Fuel Handling Eldg. at at HT Exch. indicates on RTCB-206.	OWD 217
S/D HX 2P CCW FLO HI/LO S-25	1. Excessive or low CCW flow in the S/D HX 2P. 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 RTCB-206	OWD 218
LETDOWN HX CCW FLO HI/LO S-35	1. Excessive or low CCW flow in the letdown HX. 2. (A) Check FIS-14-6 on RTCB-206 (B) Check TIC-2224 on RTCB-205 for increase of temperature.	1. NONE 2. (A) Check for proper operation of TCV-2223 (B) OR, loss of inst. str. (C) Refer to CCW Off-Normal #2-0310030	HI - 4100 GPM LO - 3850 GPM	FIS-14-6 ----- Letdown HX Room RAB, Indicates on RTCB-206	OWD 218
BLANK S-45	BLANK			-----	
CCW DISTR HBR 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 Hbr 2-42418 Hbr #2-42419	OWD's 204 208

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ANNUNCIATOR PANEL 5 VERTICAL COLUMN 6

MINIMUM TITLE	1. INDICATED CONDITION 2. CORREL. WITH INDICATION WHICH VERIFY OR PLUMBING TRIPBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK	BLANK				
9-6 BARGE 125 VDC 4160V - 48V AB BIEES MISALIGNED	1. All AB buses are not aligned from the same bus (A or B) 2. RTCB-201	1. NRE 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	QAD 978
9-16 COM PP 2C VALVES MISALIGNED	1. Indicates valve misalignment. 2. Check RTCB-206 valve position for: MW-14-2, MW-14-4 -- RED (OR) MW-14-1, MW-14-3 -- GREEN	1. NRE 2. Re-align valves to the B Header as soon as practical.	MW-14-2 or MW-14-4 open (or) MW-14-1 or MW-14-3 Closed	52/MIC, 33 4.16 KV-Bus 2AB Cab. Isolation Cab. SAB in Cable Spreading Room	QAD 204 208
9-26 ODM OTHERS ODM FLO LO	1.(A) Indicates possible loss of ODM flow to coolers (B) OR, N Header Isolated 2.(A) Check TR-25-3 points 7,8 for increase in temp. (B) "N" Header valve position indication 1. Indicates valves not closed w/SIAS signal present 2. Check valve position lights on RTCB-206	1. NRE 2.(A) Check for possible "N" header Isolation (B) Check for possible HIR rupture or valve misalignment	LO 450 GPM	FIS-14-13 Ex Containment Bldg. ODM Fan Coolers	QAD-218
9-36 RCP ODM ISOL MW-14-1/2/6/7 SIAS OTHERS	1. Indicates valves not closed w/SIAS signal present 2. Check valve position lights on RTCB-206	1. NRE 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)	QAD-212
9-46 COM SLET HIR MW-14-3/4 ODM/ODM/ SS ISOL	1.(A) Indicates loss of control power (B) OR, Breaker trip (C) OR, NRRV/ISOL SH in ISMATE 2.(A) Check ODM Header Press/Flow Indicators (B) Check valve position Indicator Lights	1. NRE 2.(A) Investigate RRC failure locally, contact Electrical Dept. (B) Return NRRV/ISOL SH to NORM, if applic.	Signal Thermal Overload OR NRRV/ISOL SH In ISMATE	(74, SS/ISOL) / 203 (74, SS/ISOL) / 207 480V-HV: 2AB RRC 2-42423 RRC 2-42424	QAD-203 QAD-207

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ANNUNCIATOR PANEL S VERTICAL COLUMN 7

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FINISHES TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHPOINT	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)	O&D 302 303
CONTAINMENT PRESS HI CSAS MEAS CIN. 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)	O&D 295
CONTAINMENT 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 (F) Check proper valve lineup on RTGB-206	LO - 100 psig	PIS-07-3A ----- Outside S/D HX A Room, RAP indicates on RTGB- 206	O&D 293
CONTAINMENT 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, 33X1 ----- RTGB-206	O&D 289
CONTAINMENT SPRAY PP 2A OVERID/TRIP S-47	1. (A) CS pump has tripped on overcurrent (F) 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 (F) Notify Electrical Dept.	Thermal Overload (or) Time Depen- dent over- current trip	74-1, 74-2 ----- 4160V-Bus 2A3 Breaker #-20203 in Cable Spreading Room	O&D 287
CONTAINMENT SPRAY PP 2A FAILURE CSAS OVERID 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 (F) CS HIR 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 2-20203 in Cable Spreading Room	O&D-287

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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
PLANK S-2	BLANK			-----	
PLANK S-18	BLANK			-----	
CRUDE SPRAY HEADER B PRESS LO S-28	1. Low press in CS Hdr B 2. Indicated low press PIS-07-3B on RTCB-206	1. NONE 2.(A) Check status CS pump B (B) Check proper valve lineup on RTCB-206	LO 100 PSIG	PIS-07-3B Outside S/D HX B Rm RAB Indicates on RTCB-206	QAD-294
CRUDE 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 RTCB-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, 33X2 ----- RTCB-206	QAD 289
CRUDE SPRAY PP 2B OVERID/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 or out	1. Pump trips - STOPS 2. (A) Start On pump 2A, if applicable (B) Notify Electrical Dept	Thermal Overload (or) Time Depen- dent over-	74-1, 74-2 ----- 4160V-Bus 2B3 Breaker #2-20407 in Cable Spreading Room	QAD 290
CRUDE SPRAY PP 2B FAILURE/ CSAS OVERID 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	QAD 290

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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/P 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)	Qd's 302 303
RWT LVL LO RAS MEAS CIRCUIT 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-MA, MB, MC, MD ----- (later)	Qd 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 (F) LO - RAISE level to normal level, Investigate Lo level	HI - 3'6" Lo - 29'7"	LIS-07-1 ----- at RWT	Qd 296
BLANK S-39	BLANK			-----	
RWT HV-07-1A OVERLOAD/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	Qd 297
CONTAIN SUMP MV-7-2A OPEN/OVERLOAD/RAS FAIL TO OPEN S-59	1. (A) Containment sump outlet not fully closed (E) 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 (F) 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-MCC 2A6 Breaker 2-41359 Cable Spreading Room	Qd 299

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ANNUNCIATOR PANEL S VERTICAL COLUMN 10

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PL-POINT 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	QMD 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	QMD 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	QMD 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	QMD 306
RWT-MV-07-1B OVRD/CLOSE/ RAS FAIL TO CLOSE S-50	1. (A) RWT outlet not fully open (B) RST 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	QMD 298
CONTAINT SUMP MV-7-2B OPEN/OVRD/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	QMD 300

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ANNUNCIATOR PANEL T VERTICAL COLUMN I

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 HVCE (PDIS-25-1A, B) (B) Cont. vacuum BRK VLVs (FLV-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" WC (Increasing Vacuum)	63 X A1, 63 X B1 PDIS-25-11A, 11B D/P Ind. Switches (LATER)	OWD-482
CONT. VAC RIF FCV-25-7 ACCUM 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 lost. air system or checking valve lineups	1b PSIG Decreasing	PS-25-12A Press Switch (LATER)	OWD-529
CONT. PURGE 2HVE-8A PIO 1b/OWD 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. OVRD OR Time Dependent O.C. Trip	74, 80XA Thermal OVRD and Time Dependent trip coil located in BRK No. 2-41272/MCC-2A5	OWD-509 PD & MD Sheet 31
BLANK T-19	BLANK			-----	

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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 RELF FCV-25-8 ACCUM 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-25-12B Press. Switch (later)	OWD 529
CNMT PURGE ZIME-BF FID 10/OWR1D T-14	1. (A) Low flow through "F" containment purge fan (B) The "F" 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" cont. purge fan open (B) Call Elect. Dept. for assistance if necessary	Thermal Overloads or time de- pendent O.C. trip	74, 80XB ----- Thermal overloads and time dependent O.C. trips are in breaker #2-42073/MCC-2B5	OWD 510 PD & MD 38
BLANK T-20	BLANK			-----	

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ANNUNCIATOR PANEL T VERTICAL COLUMN 3

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PURSUE TRUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENDING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR DRYER C/W WAS SS ESR T-3	1. Control of MW-14-09 and/or MW-14-13 has been isolated from the control room by HRSW/ESR switch 2. Loss of control switch lights	1. Loss of control from control room 2. Return HRSW/ESR switch to "NORMAL" if applicable, in Cable Spreading Room	HRSW/ESR switch in "Isolate" one or both	SS/ESR Switches #1 and #7 Cable Spreading Room Isolate Panel	Q40 Z81 Z24
CONTAINMENT AIR DRYER A/P TEMP 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 INCB (pts. 1-4) increasing (P) Loss of DM flow to coolers	1. NFE 2. Insure sufficient cooling water being supplied to fan cooling coils	110° F (Increasing)	TR-25-1A Points 1, 2, 3, 4	Q40 483
CONTAINMENT AIR DRYER C/W TEMP 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 INCB (pts. 1-4) increasing (B) Loss of DM flow to coolers	1. NFE 2. Insure sufficient cooling water being supplied to fan cooling coils	110° F (Increasing)	TR-25-1B Points 1, 2, 3, 4	Q40 1137
PLANK T-21	PLANK				

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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 ODW FLO 10 T-4	1. ODW supply flow to "S" containment cooler is low 2. Verify proper ODW valve alignment, pump(s) running and T-3 not on.	1. NONE 2. Return normal ODW flow to cont. air cooler, otherwise secure (if practical)	(later)	FIS-14-12A Flow ind. switch -----	OWD 218
CONTAINMENT AIR COOLER A OWHD/TRIP T-10	1. The "A" containment air cooler has tripped due to: (A) Control fuse is blown or, (F) Breaker has tripped on overcurrent (C) Breaker is open at MCC-2A9 2. (A) Air cooler "A" indicating lights are out (F) Increasing air temperature as indicated by recorder TR-25-1A	1. NONE 2. (A) Start non-running containment air cooler (if applicable) (F) Call Electrical Dept. for assistance	Time depen- dent O.C. trip or in- stantaneous trip at 2250 amps	r, c, 74F, 74 ----- Time dependent O.C. trip is in Breaker: #2-42601/MCC-2A9	OWD 285 FD & MD Sh. 102
CONTAINMENT AIR COOLER A AIR FLOW LO/ VIBRATION HI T-16	1.(A) Low air flow through air cooler or, (F) High vibration on fan motor 2.(A) Temp increasing in air cooler outlet (B) Air cooler not running (C) Decreasing vacuum in containment (if applicable)	1. NONE 2. Start non-operating cooler and secure alarmng cooler (if practical)	(LATER)	FS-25-2A, VIB. SW, 4X flow switch -----	OWD-285
CONTAINMENT AIR COOLER A SIAS OVRD CS STOP/SS ISOL T-22	1.(A) Control Room SW for "A" Cont. Cooler in "STOP" 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 "STOP" or NORM/ISOL SW in ISOLATE	42XS, SIAS Y, CS/285, SS/285 -----	OWD-285

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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 - FIELD ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
CONTAINMENT AIR COOLER B ODW FLO LO T-5	1. ODW supply flow to "S" containment cooler is low 2. Verify proper ODW valve alignment, pump(s) running and T-3 not on.	1. NONE 2. Return normal ODW flow to cont. air cooler otherwise secure (if practical)	(later)	FIS-14-12B Flow ind. switch	QAD 218
CONTAINMENT AIR COOLER B OVRID/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 depen- dent O.C. trip or in- stantaneous trip at 2250 amps	r, t, 74F, 74a ----- Time dependent O.C. trip is in Breaker: #2-42602/MCC-2A9	QAD 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 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 alarms cooler (if practical)	(LATER)	FS-25-2B, VIB. Sw, 4X flow switch -----	QAD-286
CONTAINMENT AIR COOLER B SIAS OVRID/ CS STOP/SS ISOL T-23	1.(A) Control Room SW for "B" Cont. Cooler in "STOP" position with SIAS signal present OR (B) NORM/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 NORM/ISOL switch to NORMAL (if applicable)	N/A	42SX, SIAS Y, CS/286, SS/286 -----	QAD-286

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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 FLD LO T-6	1. CCW supply flow to "S" 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)	FLS-14-12C Flow ind. switch	QAD 218
CONTAINMENT AIR COOLER C OVRID/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 depend- ent O.C. trip or in- stantaneous trip at 2250 amps	r, t, 74P, 74 ----- Time dependent O.C. trip is in Breaker: #2-42601/MCC-2A9	QAD 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 in air cooler outlet (B) Air cooler not running (C) Decreasing vacuum in containment (if applicable)	1. NONE 2. Start non-operating cooler and secure alarmed cooler (if practical)	(LATER)	PS-25-2A, VIB. SW, 4X flow switch -----	QAD-304
CONTAINMENT AIR COOLER C SIAS OVRID/ 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	42CS, SIAS Y, CS/285, SS/285 -----	QAD-384

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ANNUNCIATOR PANEL U 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 AIR CLR D CCW FLO LO U-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	QAD 218
CONTAINMENT AIR COOLER D (OVER)/TRIP U-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, 74F, 74S overcurrent trip ----- Breaker 2-42702 259 MCC	QAD 305
CONTAINMENT AIR CLR D AIR FLOW LO / VIBRATION HI U-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)	FS-25-2D VIB SW, 4X Flow Switch -----	QAD 305
CONTAINMENT AIR CLR D SIAS OVERD / SS ISOL U-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, CS/305, SS 305 ----- Breaker 2-42702 219 MCC	QAD 305

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ANNUNCIATOR PANEL U 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 U-2	BLANK			-----	
BLANK U-8	BLANK			-----	
BLANK U-14	BLANK			-----	
BLANK U-20	BLANK			-----	

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ANNUNCIATOR PANEL U 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
RX SUPPORT CHANN'L A TEMP HI U-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)	DR-25-1A Points 6, 7, 8	GRD 483
RX SUPPORT CH'L ZONE-3A FLO LO/OVRLOD U-9	1. (A) Low flow through fan measured at PS-25-5A (B) Fan motor is overloaded 2. (A) Indicating lights out (B) Reactor 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)	PS-25-5A, 7A, 2	GRD 524
RX CAVITY CHANNEL A TEMP HI U-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)	DR-25-1A Point 5	GRD 483
RX CAVITY CH'L ZONE-2A FLO LO/OVRLOD U-21	1. (A) Low flow through fan measured at PS-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)	PS-25-7A, 7A, 2	GRD 522

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ANNUNCIATOR PANEL U 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 U-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	QAD 1137
RX SUPPORT CLG ZONE-5B FLO LO/OVRD U-10	1. (A) Low flow through fan measured at PS-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)	PS-25-5B, 74, 2	QAD 525
RX CAVITY CHANNEL, B TEMP HI U-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	QAD 1137
RX CAVITY CLG ZONE-2B FLO LO/OVRD U-22	1. (A) Low flow through fan measured at PS-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)	PS-25-7B, 74, 2	QAD 523

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ANNUNCIATOR PANEL U 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 U-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 -----	OMD 478
SHLD BLDG TO OUTSIDE A D/P HI/LO U-11	1. Diff press between shield bldg and atmos. outside control hand. 2. (A) PUS-25-7A (B) Outside air intake valve position (PCV-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 -----	OMD 482
SHLD BLDG HEPA FLT VENT A D/P HI U-17	1. Diff. pressure across HEPA prefilter in SBVS "A" train is high 2. PDIS-25-8A	1. NONE 2. (A) Inspect HEPA prefilter locally and if necessary replace (B) Verify proper damper position in train	(later)	PDIS-25-8A ----- INAC	OMD 1165
SHLD BLDG VENT-A HMD HI U-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 -----	OMD 482

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ANNUNCIATOR PANEL U VERTICAL ORDER 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 U-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	QAD 479
SHLD BLDG TO OUTSIDE B D/P HI/LO U-12	1. Diff press between shield bldg and atmos. outside control band 2. (A) PDS-25-7B (B) Outside air intake valve position (PIV-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)	PDS-25-7B	QAD 482
SHLD BLDG HEPA FILTER VENT B Δ/P HI U-18	1. Diff pressure across HEPA prefilter in SBVS "B" train is high 2. PDS-25-8B	1. NONE 2. (A) Inspect HEPA prefilter locally and if necessary replace (B) Verify proper damper position in train	(later)	PDS-25-8B HVAC	QAD 485
SHLD BLDG VENT-B HUMID HI U-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)	PDS-25-2	QAD 482

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ANNUNCIATOR PANEL V 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
SBVS HTG OIL 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)	OR1, OR2, OR3 Htr Control Panel	Q4D 1150
SBVS HTG OIL 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)	OR1, OR2, OR3 Htr Control Panel	Q4D 1152
BLANK V-13	BLANK			-----	
BLANK V-19	BLANK			-----	

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ANNUNCIATOR PANEL V VERTICAL TRAIN 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TRU/BE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SBVS 2 INVE-6A OVERLOAD/ SS ISOL V-2	1. Indicates that SBVS 2INVE-6A cannot be operated from Control Room due to: (A) NHE/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-25-20A1 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	QAD 513 PD & MD Sh. 36
SBVS 2INVE-6A FLO LO/ CIS OVERD 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)	QAD 513
SHLD BLDG CLG AIR A PCV-25-11 OVERLOAD V-14	1. PCV-25-11 2. (A) PCV-25-11 indication lights (B) SBVS "A" train temperatures, D/F	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	QAD 1176 PD & MD Sh. 37A
SHLD BLDG ISOL, PCV-25-32 OVERLOAD / VALVE CLOSED V-20	1. SBVS cont. iso. valve is closed and/or motor operator is overloaded. 2. (A) PCV-25-32 indication lights (B) PDIS-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	QAD 1156 PD & MD Sh. 36

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ANNUNCIATOR PANEL V VERTICAL COLUMN 3

MESSAGE TITLE	1. INDICATED CONDITION 2. CORRELATE WITH INDICATION WITH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SEQUENCE	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SWS 2 HWE-6B OVERLOAD / SS ISN.	1. Indicates that SWS 2HWE-6A cannot be operated from Control Room due to: (A) MW/ISSA switch is in Isolate or (B) The breaker has tripped on overcurrent or overload (C) Control fuse blown or breaker open at MD-246 2. (A) Fan status indicating lights are out (B) Exhaust flow on indicator FIS-25-20B1 drops to zero if fan tripped	1. SWS-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 control switch in "Start"	Thermal Overload or O.C. trip at 80% amps	7A, SS/ISSA Isolation Switch MD: 286 ----- Thermal Overloads and O.C. trip coils are in brkr: 2-42169/MD: 286	QAD 516
V-3 SWS 2 HWE-6B FLD LOW CIS OVERD	1. Indicates the following: (A) Low flow as measured by FS-25-20B1 (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 flow condition	(later)	FIS-25-20B1, 42X, 3X Flow indicator switch ----- (later)	QAD 516
V-9 SWS CIS AIR B PCV-25-12 OVERD/D	1. PCV-25-12 motor operator is overloaded 2. (A) PCV-25-11 indication lights (B) SWS "g" train temperatures D/P	1. NONE 2. (A) Investigate cause for motor overload	(later)	7A (later) ----- Brkr: 2-4217/286 MD	QAD 1177 RD 6 MD Sh 41
V-15 SWS PCV-25-12 OVERD/D	1. SWS cont. low, valve is closed and/or motor operator is overloaded 2. (A) PCV-25-12 indication lights (B) PDIS-25-70	1. NONE 2. (A) Place other SWS train in service if applicable (B) Investigate cause for valve closure	Valve ----- > 95% shut	7A, 33 Valve Limit Switch -----	QAD 1157
V-21 SWS PCV-25-12 OVERD/D / VALVE CLOSED	1. SWS cont. low, valve is closed and/or motor operator is overloaded 2. (A) PCV-25-12 indication lights (B) PDIS-25-70	1. NONE 2. (A) Place other SWS train in service if applicable (B) Investigate cause for valve closure	Valve ----- > 95% shut	7A, 33 Valve Limit Switch -----	QAD 1157

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ANNUNCIATOR PANEL V VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TRUPLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETHOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK V-4	BLANK			-----	
BLANK V-10	BLANK			-----	
CONT RM ISOL PCV-25-15/17 OVERLOAD / CIS (MISD) 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 -----	GD 1171 1173
CONT RM ISOL PCV-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 -----	GD 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. PDIC-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 -----	QAD 1166
CONT RM EMERG FILTER DRIVE-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 brk 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	QAD 490
CONT RM EMERG FILTER FAN 13B 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 indicatin 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)	QAD 491
CONTROL ROOM EMERG FILTER 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 indications (3) 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)	QAD 490 491

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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	REFERENCE
CONT RM ISOL PCV-25-18/19 PCV-25-24/25 OVERLOAD V-6	1. Indicates blown fuse or motor operator overload conditions on either kitchen esh. fan iso. valve or toilet esh. fan iso. 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 PCV-25-18/2-41341/ MCO-2A6 PCV-25-19/later/MCO-1tr PCV-25-24/later/MCO-1tr PCV-25-25/later/MCO-1tr	Q40 1190, 1174 1191, 1175 PD & MD Sho:
CONTROL ROOM A/C 3A FAN/COMP SS ISOL V-12	1. Indicates A/C 3A cannot be operated from Cont. Rm. due to: (A) NMI/ISOL switch in Isolate (B) Fan/Compr motor overload 2. Loss of running/indication lights	1. NONE 2. Return NMI/ISOL switch to Normal	N/A	CR5, 22/ISOL CR6 CR5 fan overload CR6 compr. overload Isolation Switch ----- Local at compressor	Q40 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. PR-25-1A, 1B	1. NONE 2. Start standby A/C unit, if applicable	(later)	RA-RAB 36/V18/1574. Reflash Panel ----- (later)	Q40 1574
CONTROL ROOM A/C COMP 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 -----	Q40 492

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ANNUNCIATOR PANEL W 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 B0242 FLTR ABSORBER TEMP HI W-1	1. HI temp in charcoal absorbers on suction of emerg. filtration fans 2. TR-26-2B Points 13,14,15,16, INCB Panel	1. NONE 2. Start other emerg. filtration fan stop alarms filter fan	(laer)	TR-25-2A, 2B Pts. 14, 15 Temperature Recorder ----- HVAC Control Panel	QAD 478 479
CONTROL ROOM A/C 3B FAN/COMP SS ISOL W-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 applicable	N/A	CR5, SS ISOL, CR6 CR5 Fan Ovrid CR6 Compressor ovrid Isolation Switch ----- Local at Compressor	QAD 494
BLANK W-13	BLANK			-----	
CONTROL ROOM A/C COMP 3B FAILURE W-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 ----- INCB/Breaker: 2-42111/MCC 286	QAD 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 2420 HEPA FILTER Δ/P HI W-2	1. High differential pressure on emergency filter train 13A/13B 2. (A) Damper position indication (B) HVCB panel indication	1. NONE 2. Investigate for clogged filter/closed damper	3" WG D/P	FDLS-25-9A, 9B Pressure differential indicator switch C.R. HVAC Room HVCB Panel	QAD 1167
CONTROL ROOM A/C 3C FAN/COMP 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	QAD 496
BATT RM 2A/2B ROOF VENTS 2-RV-1/2 OVERLOAD W-14	1. Bkr. 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 MDC2A6 2B-BKR #2-42128 MDC2B6	QAD 1219 1220
CONTROL ROOM A/C COMP 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/MDC 2AB/ compressor	QAD 496 Tech Manual 2998-14183 Print No. 8772-1200

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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	SETHOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB CHARCOAL ABSORBER 2HVS-9A/9B TEMP HI W-3	1. High Temp on charcoal absorbers train 9A/9B 2. Temp. recorder on HVCB 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	OWD 478 479
RAB HEPA FLTR 2 HVE-9A/9B Δ/P HI W-9	1. High diff. press on 9A/9B HXS exhaust fans 2. P indication HVCB 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	PTIS-25-5A, 5B Pressure Differential Indicator Switch ----- HVCB	OWD 481
ENG SPGD PP RM 2A/2B PRESS HI W-15	1. High press 2A/2B safeguards pump room 2. Pump room press indication HVCB 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 ----- HVCB	OWD 487
ENG SPGD PP RM 2A/2B TEMP HI W-21	1. High temp. 2A/2B safeguards pump room 2. Pump room temp. indication HVCB	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	OWD 483 1137

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ANNUNCIATOR PANEL W VERTICAL COLUMN 4

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PENALTY TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB MAIN EXH 2 HVE-10A FLO LD/ OVRD/TRIP W-4	1. Low flow/blkr. overload on RAB Main Exhaust Fan 2IVE-10A 2. (A) Fan Indicating Lights (B) PR-25-1A/1B	1. NONE 2. (A) Start 2IVE-10B (B) Have operator check fan locally (C) Stop fan & investigate	LD Flow .03 in wg	PS-25-13A, r, 4y, t Flow switch at dis- charge of fan in HVAC Room ----- HVCB Panel Breaker #2-40211/ MCC 2A2	GD S01
RAB BARGE EXH 2IVE-9A FLO LD/OVRD/ SIAS OVRD W-10	1. (A) Low flow on BCS exhaust 2IVE-9A (B) C. S. in Stop (C) Fan tripped on overload 2. (A) C. S. position (B) Fan indicating lights	1. NONE 2. (A) Start 2IVE-9B (B) Verify C. S. in Auto (C) Have operator check fan locally (D) Stop fan & investigate	LD Flow .08" wg	PS-25-12A, 74, 2, 3 Flow switch at dis- charge of fan in HVAC Room ----- HVCB Panel Breaker #2-41348/ MCC 2A6	GD S03
RAB SUPPLY 2 HVS-4A FLO LD/OVRD/ SIAS OVRD 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	LD Flow .08" wg	PS-25-11A, 2, 3, r, t Flow switch at dis- charge of fan in HVAC Room ----- HVCB Panel Breaker #2-40358/ MCC 2A5	GD S05
BLANK W-22	BLANK			-----	

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ANNUNCIATOR PANEL W 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
RAB MAIN EXH 2HVE-10B FLO LO/ OVRD/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	PS-25-13B, r, t, 4y Flow Switch ----- HVCB Panel Bkr #2-40510/MDC 282	OMD 502
RAB EXHAUST EXH 2HVE-9B FLO LO/OVRD/ SIAS OVRD W-11	1. (A) Low flow on EXCS 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	PS-25-12B, 74, 2, 3 Flow Switch ----- HVCB Panel Bkr #2-42172 MDC 286	OMD 504
RAB SUPPLY 2HVS-4B FLO LO/OVRD/ SIAS OVRD 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	PS-25-11B, 2, 3, r,t Flow Switch ----- HVCB Panel Bkr #2-40657/LC285	OMD 506
RAB MAIN EXH HEPA FILTER Δ/PS25 HI W-23	1. High diff. prss on 2HVE-4A/4B RAB exhaust fan(s) 2. P indication(s) on HVCB 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 ----- HVCB Panel Local Indications	OMD 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	SETRPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK W-6	BLANK			-----	
BLANK W-12	BLANK			-----	
BATTERY RM A VENT AIR SPLY FLOW LD W-18	1. Low flow to 2A Battery Room (10 second time delay) 2. HVCB Indication	1. NONE 2. (A) Verify 2HVS-5A/5B running (B) Verify Flow Path	LD Flow .06" wg	FS-25-25 Flow switch on dis- charge header in 2A Battery Room ----- HVCB Panel	QAD 476
BATTERY RM B VENT AIR SPLY FLOW LD W-24	1. Low flow to 2B Battery Room (10 sec time delay) 2. HVCB Indication	1. NONE 2. (A) Verify 2HVS-5A/B running (B) Verify flow path	LD Flow .06" wg	FS-25-26 Flow switch on dis- charge header in 2B Battery Room ----- HVCB Panel	QAD 477

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ST. LUCIE UNIT NO. 2
OFF-NORMAL OPERATING PROCEDURE NUMBER 2-0030131, REVISION 1
PLANT ANNUNCIATOR SUMMARY

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
CONDNS CNMT / H2 PURGE AIR TEMP HI X-1	1. High temperature in charcoal absorber for continuous 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 - 200°F	TR-25-3 Points, 1, 2, 3, 4, 5 ----- HVCB	QAD 480
CONDNS CNMT / H2 PURGE HEPA FILTER Δ/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	QAD 1246
CONDNS CNMT / PURGE EXH PCV-25-35 OVERLOAD X-13	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	QAD 1245
CONDNS CNMT / H2 PURGE HUMIDITY HI X-19	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 ----- HVAL Room	QAD 1245 Inst. List

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ANNUNCIATOR PANEL X 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 FLOWER & LOCATION	REFERENCE
CEM COOLING AIR TEMP HI X-2	1. High temperature air out of cooling coils 2. Temperature recorder TR-25-3 on HVAC	1. NONE 2. (A) Verify COW to coils - increase flow if necessary (B) Verify COW containment isolation valves open	HI-106° F	TR-25-3 Points 7, 8 HVAC	QAD 480
CEM COOLING ZIME-21A FLO ID / OVLID/TRIP X-8	1. Low flow or motor overload trip on ZIME-21A CEM fan cooler 2. Fan Indicating lights on HVAC	1. NONE 2. (A) Start standby fan (B) Have operator check breaker (C) Notify Electrical Dept.	(later)	63X, 74-1, 74-2, 74-3 4160N-2A3	QAD 507
CEM COOLING ZIME-21B FLO ID/ OVLID/TRIP X-14	1. Low flow or motor overload trip on ZIME-21B CEM fan cooler 2. Fan Indicating lights on HVAC	1. NONE 2. (A) Start standby fan (B) Have operator check breaker (C) Notify Electrical Dept.	(later)	63X, 74-1, 74-2, 74-3 4160N-2B3	QAD 508
STATIC INVR ROOM TEMP HI X-20	1. HI temperature in Inverter Room 2. NONE	1. NONE 2. Check operation of ZIVS-SA/58 and ZIME-11/12	>105° F	TS-25-24 later	QAD 476

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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-3	1. HI temperature in fuel pool area 2. NONE	1. NONE 2. Verify operation of FIBVS	110° F	TS-25-7 ----- (later)	OMD 469
FUEL POOL EXH 2HVE-16A/16B FLO LO/OVRD X-9	1. Flow low or motor overload on FIBVS 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 MDC 2A8/2B8	OMD 526 527 Inst. List
FUEL BLDG EXH VENT FCV-25-30 OVERLOAD X-15	1. Motor overload on FIBVS to SHVS FCV-25-30 2. Position indicating lights on HVCB	1. NONE 2. (A) Have operator check breaker (B) Notify Electrical Dept.	N/A	74 ----- MDC-2A6 Motor Torque Switches	OMD 1154
FUEL BLDG VENT 2HVS-7 / 2HVE-15 FLO LO/OVRD X-21	1. Flow low or motor overload on FIBVS 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 ----- OXI Duct/Exhaust Ducts MDC-2A8	OMD 469 470 Inst. List

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ANNUNCIATOR PANEL X 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
FUEL. POOL RM TO OUTSIDE Δ/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. PDS-25-17A/17B on IMCB	1. Opens/Closes OAI FCV-25-11/12 to maintain negative pressure 2. (A) HI-verify RBVS in operation with operable flow path (B) LO-verify only one train of RBVS operating and flowpath	HI - 0" wg LO - neg. 2.25" wg	PDS-25-17A, 17B IMCB	QAD 517 Inst. List
BLANK X-10	BLANK				
FUEL. BLOC EMERG VENT FCV-25-31 OVERLOAD X-16	1. MOTOR OVERLOAD ON flwvss TO above FCV-25-31 2. Position Indicating Lights on IMCB	1. NONE 2. (A) Have operator check blr. (B) Notify Electrical Dept.	N/A	74 MTC-286 Motor Torque Switches	QAD 1155
CHIMNEY CHIMNEY H2 PURGE H2 COIL OVERHEAT/ PURGE LOSS X-22	1. HI-HI temp in filter train/loss of power to heater control panel 2. (A) TR-25-1B IMCB	1. De-energizes heater on HI-HI temp 2. (A) Have operator reset at local control panel (B) Notify Electrical	HI-HI 220°F	CR-2, ID Local Heater Control Panel	QAD 1222

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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 PCV-25-29 OVERLOAD / VLV OPEN X-5	1. (A) Motor overload on SBVS to H2 Purge PCV-25-29 (B) PCV-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 PCV-25-34 OVERLOAD/ VLV OPEN X-11	1. (A) Motor overload on SBVS to H2 purge PCV-25-34 (B) PCV-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 FTD 11/OVERLD X-17	1. 110 flow or motor overload on H2 purge fans HVE-71/7B 2. (A) FT-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,74,42X ----- HVCB, MCC 2A6, 2B6	OAD 485 486 Inst. List
CHIMES ONHMT / H2 PURGE ISOL. VLV CIS OVERD X-23	1. Valve control switch in override/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 ZBVS-5A/ ZBVE-11 FLO LO/OVRD X-6	1. Low flow or motor overload on Elec. Equip. Room supply/exhaust fans 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	OWD 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 ZBVS-5A/5B and ZBVE-11/12	110°F	TS-25-8 -----	OWD 476 Inst. List
ELEC EQUIP RM ZBVS-5B / ZBVE-12 FLO LO / OVRD X-18	1. Low flow or motor overload on Elec. Equip. Room supply/exhaust fans 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	OWD 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 ZBVS-5A/5B and ZBVE-11/12	110°F	TS-25-9 -----	OWD 477 Inst. List

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ANNUNCIATOR PANEL LA VERTICAL GROUP 1

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

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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-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 and to identify source of Inleakage	HI-HI 10'3"	LS-06-41 Ultrasonic sensor 2B HPSI Pump Room	OWD 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 source of Inleakage	HI-HI:10'3" HI: 11' 3"	LS-06-1A 2A LPSI Pump Room	OWD 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 2-0350030	Temp. 150°F Level — HI: +2 LO: -2	LS-4420 TA-4420 Fuel Pool	OWD 182 P & ID E-13172-310-140

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR LABEL LA VERTICAL ORIGIN 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 LA-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	OWD 1119 ----- P & ID 2998-G-086
DIESEL OIL DAY TANKS 2A1, 2A2 LOW-LOW LEVEL LA-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	OWD 1126 ----- P & ID 2998-G-086
VALVES I-SE-07-5A I-SE-07-5C I-SE-07-5E CLOSED LA-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 <u>only</u> 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	OWD 321 ----- P & ID 2998-G-088

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ANNUNCIATOR PANEL IA 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 IA-4	1. (A) Lube water strainer A1 or A2 HI diff. pressure (B) Possible failure of strainers to auto. back- wash at 2 PSID. 2. NONE alarm only	1. NONE 2. Dispatch operator to manually backwash strainers	3 PSIG	POIS-21-25-1A1,1A2 ----- Intake structure	OWD 839 ----- P & ID 2998-C-082
COMPONENT COOLING WDR SURGE TANK COMPARTMENT A LOW LEVEL IA-10	1. (A) Failure of auto. make up to COW surge tk. (B) Leak out of the COW 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 COW 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 COW surge tk. as sensed by LS-14-6B. This will isolate the "B" header from the "N" header 2. Refer to COW Off-Normal Proc #2-0310030	2'5" Fron Bottom	LS-14-1A ----- COW Surge Tk. Room	OWD 211 ----- P & ID 2998-G-083
BLANK IA-16	BLANK			-----	

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ANNUNCIATOR PANEL 1A 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
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 (%) Check charging/letdown flow.	1. NONE 2. Refer to PZR Press. and Level Off-Normal Procedure #2-0120035.	>60% actual pressurizer level	LA-1110K-1 ----- Inside RTGB-203	OWD 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 (LC-11110Q.) will initiate heater cut off opening 480V feeds to heater distribution banks P-2,B-4,B-5 and B-6. 2. Refer to PZR Press and Level Off-Normal Procedure #2-0120035.	<27% actual pressurizer level	LC-11110K ----- Inside RTGB-203	OWD 90 ----- 13172-310-109
BLANK 1A-17	BLANK			-----	

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ANNUNCIATOR PANEL 1A VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR 3. TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM 3. NOTE	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ATM STM DUMP ISOL VALVES MW-08-15 MW-08-17 MOTOR OVERLOAD VALVES CLOSED LA-6	1. (A) Arm Stop Dump Isolation valve MW-08-15 or MW-08-17 closed. (B) MW-08-15 or 17 has tripped on overload (C) Feeder bkr. open to MW-08-15 or 16 2. Valve position indicating lights on RWB-202 for MW-08-17 and PAC B for MW-08-15.	1. (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 AC W-254 Bkr #2-60957 Bkr #2-06958	QMD 1621 QMD 1623 P & ID 2998-G-079 Sh 2 of 2
ATM STM DUMP MW-08-18A/18B OVERLOAD / CS 14MM/SS ISOL LA-12	1. Indicates Atmospheric Stop, Dumps MW-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	QMD 1626 QMD 1628 P & ID 2998-G-079 Sh 2 of 2
BLANK LA-18	BLANK				

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ANNUNCIATOR PANEL LB VERTICAL COLUMN 1

MINIMUM TITLE	1. INDICATED CONDITION 2. OTHER, WITH INDICATION WHICH VERIFY OR PURPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	RESPONSE
INTAKE STRUCTURE WATER LEVEL 1/14	Later	1. NONE 2. Later	EL-2'1"	LS-21-5B Level Switch ----- Intake structure up- stream of travelling screens.	ODD 1007
CONCRETE STORAGE TANK 1/14-1/14 LEVEL	1. Level inadequate to provide sufficient aux. feed- water pump suction pressure. 2. (A) Level indicators on RT2B-202 (LIS-12-11 and LIS-12-11B) (B) Level recorder on plant aux. control board No. 2 (LR-12-11B)	1. NONE 2. STOP auxiliary feedwater pumps. (pump protection actpoint)	2'6"	LS-12-8 Level Switch -----	ODD 743
CONCRETE STORAGE TANK 1/14-1/14 LEVEL	1. Level inadequate to provide sufficient aux. feed- water pump suction pressure. 2. (A) Level indicators on RT2B-202, (LIS-12-11 and LIS-12-11B) (B) Level recorder on plant aux. control board No. 2, (LR-12-11B)	1. NONE 2. STOP auxiliary feedwater pumps. (pump protection actpoint)	2'6"	LIS-12-11B Level Indicating Switch RT2B-202	ODD 744

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ANNUNCIATOR PANEL LB 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
SAFEGUARD PUMP ROOM A SUMP HI-HI LEVEL LB-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	QMD 532
SAFEGUARD PUMP ROOM B SUMP HI/HI-HI LEVEL LB-8	1. Safeguards Sump Inleakage 2. Alarm only	1. (A) Sump pump 281 starts on HI level (B) Sump pump 282 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 HPST Room	QMD 533
FUEL POOL HIGH/LOW LEVEL, HIGH TEMP LB-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 2-0350030	TEMP HI 150 DEG F Lev HI +2" Lev LO -2"	LS-4421 Level Switch Temp Alarm -----	QMD 181

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ANNUNCIATOR PANEL LB 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	SETHPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIESEL OIL STORAGE TANK 2B LOW LEVEL LB-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-17-10B Level Switch ----- at 2B Diesel oil storage tank	GD 1129
DIESEL OIL DAY TANKS 2B1, 2B2 LOW-LOW LEVEL LB-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	GD 1136
VALVES I-SE-07-5B I-SE-07-5D I-SE-07-5F CLOSED LB-15	1. Containment Pressure transmitters (PT-07-2B, PT-07-2D or PT-07-4B1) containment isolation valves closed. 2. Solenoid valves I-SE-07-5B, 5D and 5F position indicating lights on PACB 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 Icon Limit Sw.	CIS-I-SE-07-5B, I-SE-07-5D I-SE-07-5F Control L.v. Switch ----- Pipe Penetration Room	GD 322

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ANNUNCIATOR PANEL 1B 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
LINE WATER SUPPLY STRAINERS HIGH DIFFERENTIAL PRESSURE 1B-4	1. (A) Line 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	QAD 879
COMPONENT COOLING WTR SURGE TANK HIGH LEVEL COMPARTMENT B LOW LEVEL 1B-10	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. makeup to CCW surge tank or leak out of CCW system. 2. (A) Abnormal header flows 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 - (1) HEV-14-8A and HEV-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) HEV-14-8B and HEV-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	HI 4'6" From Bottom ----- LO 2'5" From Bottom	LS-14-1B, LS-14-5 Level Switches ----- In CCW surge tank room	QAD 211 ----- P & ID 2998-G-083

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ANNUNCIATOR PANEL LB 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	SETRPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PRESSURIZER HI-LEVEL CHANNEL Y LB-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 RIGB-203	QMD 90 P & ID 13177-310-109
PRESSURIZER LO-LO LEVEL CHANNEL Y LB-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 4160V 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 bunks 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 RIGB-203	QMD 90 P & ID 13172-310-109

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ANNUNCIATOR PANEL LB VERTICAL COLUMN 6

MINIMUM TITLE	1. INDICATED CONDITION 2. ORIGINATOR ROOM INDICATION WHICH VERIFY OR FIREPOINT TRIP	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
ADP#6 STM TRIP ESM VALVES MV-08-14, MV-08-16 MTRR (OVERLOAD) VALVES CLOSED LB-6	1. (A) ADM STM TRIP Isolation valve MV-08-14 or MV-08-16 closed. (B) MV-08-14 or 16 has tripped on overload. (C) FIRETRIP open to MV-08-14 or 16 2. Valve position indicating lights on RICB-202 for MV-08-14 and PACH for MV-08-16	1. NRE 2. (A) Use other atmospheric dump valve if (B) Check lbr, locally (C) Contact Electrical Department	Overload Later	74, 33/1622, 1624 Overload contact/Limit switch 1250DC PP-255 MV-08-14 BCR #2-60979 MV-08-16 BCR #2-60981	OAD's 1622 1624
ADM STM TRIP MV-08-19A/19B OVERLOAD / CS MW/SS ESM, LB-12			Overload Later	74, 83, SS-1625-3 74, 83, SS-1627-3	OAD's 1625 1627

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ANNUNCIATOR PAGE 1C VERTICAL ORDER 1

ALARM TITLE	1. INDICATED CONDITION 2. OTHER ROOM INDICATION WHICH VERIFY OR PRIORITY INDICATE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SECURITY	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
PRESSURIZER PORV & SIV VALVES OPEN IC-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 RICB-203	1. Rx Trip at 23/5 psia in conjunction with PORV lifting 2. Refer to PZR Relief/Safety Valve Off-Manual #2-0120036.	Later	HE-01-1, 2, 3, 4, 5	QAD 84
REACTOR COOLANT VENT SYSTEM HIGH PRESSURE IC-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. NRE 2. Later	Later	PIA-1140 Pressure Indicator Annunciator PAB 2	QAD 1672
ESP LEAKAGE DRL RETURN TO CONTAINMENT IC-13	1. HTS sump pumps realigned to diach to Rx Cavity & Rx Cavity Pumps Realigned so still diach, back to cavity. (Valves 2-SE-07-4 & 2-SE-06-1 are open) 2. Valve status lights	1. NRE 2. Shut valves if not LCA condition	NRE	3X PAB 2	QAD 301

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ANNUNCIATOR PAGE 1C VERTICAL COLUMN 2

2

MINIMUM TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR FURNISH TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK	BLANK				
IC-2					
BLANK	BLANK				
IC-8					
REGULATOR FILTER HIGH DIFF PRESS	1. Filter is clogged 2. NRE	1. NRE 2. Call operator - have cleaned	later	PDIS-09-10 Pressure Differential Indicator Switch Turbine Deck East Side	OM 16%
IC-14					

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ANNUNCIATOR PAGE, LC VERTICAL COLUMN 3

WINDUP TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PICTURING TABLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SPRING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK LC-3	BLANK				
BLANK LC-9	BLANK				
LETMAN RELIEF VA DESCH. LINE HIGH TEMP LC-15	1. Relief valve V-2345 (on letdown line downstream of LCV's) is open or leaking by 2. letdown pressure (PIC-2201) > 650 psig.	1. NONE 2. lower letdown press and loose maintenance check relief setpoint if relieving early	Later	TIA-6660 Temperature Indicator Annunciator PAB "B"	QAD 325

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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)	QAD 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)	QAD 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	RA-FD-3 Reflash Panel ----- (later)	QAD 1845

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ANNUNCIATOR PANEL LC 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	RESPONSE
BLANK LC-5	BLANK				
BLANK LC-11	BLANK				
BLANK SP	BLANK				

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ANNUNCIATOR PANEL LC VERTICAL COLUMN 6

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR POTENTIAL TRIPBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
BLANK LC-6	BLANK			---	
BLANK LC-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	SEPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIFFERENTIAL "fw"/"nw" TRIP 1R-1	1. Trouble on West 240 KV switchyard bus 2. OCB's 1W, 2W, 3W, 4W should indicate open	1. OCB's 1W, 2W, 3W, 4W trip open 2. Notify Division Dispatcher and/or system protection			OWD 1108
DIFFERENTIAL "fe"/"ne" TRIP 1R-7	1. Trouble on East 240 KV switchyard bus 2. OCB's 1E, 2E, 3E, 4E should indicate open	1. OCB's 1E, 2E, 3E, 4E trip open 2. Notify Division Dispatchers and/or system protection			OWD 1108
DIFFERENTIAL "r1"/"m1" TRIP 1R-13	1. Trouble on line feed "A" startup transformers 2. OCB 2E, OCB 2W and associated 4160V and 6900V startup breakers should indicate open	1. OCB 2E, OCB 2W, 4160, 6900 breakers tripped open. 2. Notify Division Dispatcher and/or system protection			OWD 1108
DIFFERENTIAL "r2"/"m2" TRIP 1R-19	1. Trouble on line feeding "B" startup transformers 2. OCB 4W and associated 4160 and 6900 startup breaker should indicate open	1. OCB 4E, OCB 4W, 4160, 6900 breakers tripped open. 2. Notify Division Dispatcher and/or system protection			OWD 1108

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ANNUNCIATOR PANEL IR 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	SETOFFLINE	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
DIFFERENTIAL "I"/"P" TRIP IR-2	1. Trouble on line feeding Hutchinson Island substation 2. OCB 4W and 4M should indicate open	1. OCB 4W and 4M trip open 2. Notify Division Dispatcher and/or System Protection			Q4D 1108
LOCAL BACKUP TRIP IR-8	1. A switchyard OCB has failed to operate to properly clear a fault 2. Line repeat panel breaker indications	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			Q4D 1108
240 KV OCB AIR PRESS LO IR-14	1. Low operating air pressure on a 240 KV OCB 2. NONE	1. NONE 2. (A) Check air compressor breakers for trippol indication, reset if necessary (B) If alarm does not clear in ten (10) minutes notify Division Dispatcher and/or Walton Service Center.	<200 psi		Q4D 1108
SWITCHYARD BATT CHGR TROUBLE IR-20	1. Switchyard "A" or "B" train electrical malfunction (later) 2. NONE	1. NONE 2. (A) Check 480V IC breaker to switchyard closed (B) Check battery charges for proper operation (C) Notify Division Dispatcher and/or System Protection			Q4D 1108

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ANNUNCIATOR PANEL IR 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
OCB 1W 8433 TRIP IR-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			QAD 1108
OCB 24 8463 TRIP IR-9	1. OCB 24 is open 2. If Midway #2 has a fault OCB 24 should also indicate open	1. OCB 24 trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1108
OCB 24 8460 TRIP IR-15	1. OCB 24 is open signifies trouble on Midway #2 or startup transformer 2. NONE	1. OCB 24 trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1108
OCB 2E 8423 TRIP IR-21	1. OCB 2E is open 2. If "A" startup transformers have a fault OCB 24 and associated 4160V and 6900V startup breakers should indicate open	1. OCB 2E trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1108

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ANNUNCIATOR PANEL IR VERTICAL COLUMN 4

MINIMUM TITLE	1. INDICATED CONDITION 2. GENERAL REYN INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING ELEMENT NUMBER & LOCATION	REFERENCE
OCB 34 8455 TRIP IR-4	1. OCB 34 is open 2. If Midway 4E has a fault OCB 34 should also indicate open	1. OCB 34 trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1108
OCB 44 8467 TRIP IR-10	1. OCB 44 is open 2. If Hutchinson Island Substation has a fault OCB 44 should also indicate open	1. OCB 44 trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1108
OCB 44 8464 TRIP IR-16	1. OCB 44 is open signifies trouble on "B" startup transformers or transformer trouble in Hutchinson Island Substation 2. NONE	1. OCB 44 trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1109
OCB 4E 8461 TRIP IR-22	1. OCB 4E is open 2. If "B" startup transformers have a fault OCB 4E and associated 4160W and 6900W startup breakers should also indicate open	1. OCB 4E trips open 2. Notify Division Dispatcher and/or System Protection			QAD 1109

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ST. LUCIE UNIT NO. 2
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ANNUNCIATOR PANEL 1R VERTICAL COLUMN 5

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PERSISTENT 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			OWD 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			OWD 1109
XFER TRIP / MID LINE NO. 2 TRIP 1R-17	1. Line has been transfer tripped from Midway switching station 2. OCB 24, OCB 24 should indicate open	1. OCB 24, OCB 24 trip open 2. Notify Division Dispatcher and/or System Protection			OWD 1109
XFER 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			OWD 1109

2

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ANNUNCIATOR PANEL LR VERTICAL COLUMN 6

WINDUP TITLE	1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TRAP	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	STATUS ELEMENT NUMBER & LOCATION	RESPONSE
BLANK LR-6	BLANK			---	OLD 1109
BLANK LR-12	BLANK			---	1109
BLANK LR-18	BLANK			---	1109
BLANK LR-24	BLANK			---	1109

2

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

DOCUMENT TITLE Control Room Inaccessibility

DOCUMENT FILE NUMBER 2-0030141

DOCUMENT REVISION NUMBER 5

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141
REVISION 5

CONTROL ROOM INACCESSIBILITY
(CRI)

TOTAL NO. OF PAGES 42

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FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141
REVISION 5

2

1.0 TITLE:

CONTROL ROOM INACCESSIBILITY

2.0 SYMPTOMS:

Conditions exist such that the Control Room becomes uninhabitable and must be evacuated.

3.0 IMMEDIATE AUTOMATIC ACTION:

None

4.0 IMMEDIATE OPERATOR ACTION:

<u>ACTION</u>	<u>NOTES</u>
4.1 Manually trip the reactor and Turbine prior to leaving the Control Room, if possible.	4.1 Push buttons on RTGB-201 and 204.
4.2 Announce evacuation of the Control Room over the P.A. system.	
4.3 Implement the Emergency Plan, as necessary, in accordance with EPIP 3100021E, "Duties of the Emergency Coordinator".	
4.4 Obtain the Remote Shutdown Room Keybox Master Key from the Control Room Key Locker.	4.4 Key Number 2
4.5 Evacuate all personnel from the Control Room.	

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

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2

5.0 SUBSEQUENT ACTIONS:

5.1 Man and take control of stations as follows:

CHECK

1. Reactor Control Operator "A" - Remote Shutdown Panel

- A. Establish communications on the Sound Power Phone System (Circuit No. 1).
- B. Monitor available plant parameters on the Remote Shutdown Panel.
- C. Start motor or steam-driven Auxiliary Feedwater Pumps and feed the Steam Generators as required.
- D. Control Pressurizer pressure and level by manual control of Pressurizer heaters, auxiliary spray valves, and letdown valves.

/R5

NOTE: Only the "P" Letdown level and pressure valves are controllable from the Remote Shutdown Panel.

2. Nuclear Plant Supervisor - Electrical Equipment Room, Reactor Auxiliary Building - 43' Elev.

- A. Open or check open Reactor Trip Breakers TCB-1 through 8.
- B. Place isolation switches in the ISOLATE position on the following switchgear in the order listed: (See Appendix A)

4160V Swgr. 2A3
480V Load Center 2A3*
480V Load Center 2A2
480V Load Center 2A5
480V MCC 2A5
480V MCC 2A6
Transfer Panel 2A
480V MCC 2AB
4160V Swgr. 2B3
480V Load Center 2B3**
480V Load Center 2B2
480V Load Center 2B5
480V MCC 2B5
480V MCC 2B6
Transfer Panel 2B
Transfer Panel 2AB
Communications Isolation Panel

* Open Bkr 2-40305 (Prop. Heater Bank 1)

** Open Bkr 2-40602 (Prop. Heater Bank 2)

/R5

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

5.0 SUBSEQUENT ACTIONS: (continued)

5.1 (continued)

2. (continued)

C. Assist Reactor Control Operator "A" in monitoring unit parameters from the Remote Shutdown Panel.

3. Reactor Control Operator "B" - Turbine Operating Level

A. Locally trip or verify tripped Unit 2 Turbine.

B. Verify Turbine Stop Valves and Control Valves are shut. If not, initiate Turbine trip from Turbine front standard.

C. At the AFW Pump area, place the isolate switches for MV-08-19B, MV-08-18B, MV-08-18A, and MV-08-19A in ISOLATE.

D. Proceed to Turbine Building Switchgear Room and establish communications on the Sound Powered Phone circuit (Circuit No. 1).

E. Place isolation switches in the ISOLATE position for bus feeder breakers as follows (See Appendix A):

4160V Swgr. 2A2

4160V Swgr. 2B2

6900V Swgr. 2A1

6900V Swgr. 2B1

F. Stop 2A and 2B Main Feedwater Pumps, 2A and 2B Heater Drain Pumps, and one Condensate Pump by opening their respective breakers.

CAUTION: Ensure that one Condensate Pump remains in service.

CHECK

/R5

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

5.0 SUBSEQUENT ACTIONS: (continued)

5.1 (continued)

CHECK

2

4. Nuclear Operator - Reactor Auxiliary Building

- A. Place isolate switches in ISOLATE/LOCAL position on the following switchgear (see Appendix A):

4160V Swgr. 2AB

480V Load Center 2AB

- B. Proceed to the Diesel Generator Building and place isolation switches on 2A and 2B Diesel Control Panels in ISOLATE position (see Appendix A).

- C. Open or check open isolation valves for Letdown pressure and level control valves (V-2110P and V-2201P). Isolate V-2110Q and V-2201Q.

- D. Proceed to the Charging Pump area and establish communications on the Sound Powered Phone circuit (Circuit No. 1).

/R5

- 5.2 Maintain Pressurizer level at approximately 33% indicated level.

- 5.3 Maintain Pressurizer pressure at approximately 2100 psia.

- 5.4 Maintain Reactor Coolant System temperature at or below 532°F (2A cold leg temperature) by use of atmospheric steam dump and/or selective shutdown of Reactor Coolant Pumps.

NOTE: Stop Reactor Coolant Pumps as required by opening the Reactor Coolant Pump breakers in the Turbine Building Switchgear Room.

- 5.5 Maintain Steam Generator levels at approximately 65% indicated level by operation of the Auxiliary Feedwater Pumps and discharge valves to the Steam Generators.

- 5.6 Isolate Steam Generator blowdown by manually closing isolation valves at the Closed Blowdown Heat Exchangers.

- 5.7 When Turbine speed decreases to "0" RPM, verify that the Turning Gear Oil Pump and the turning gear are in operation.

- 5.8 Periodically check the habitability of the Control Room and when conditions permit, reoccupy the Control Room. Return isolation switches to NORMAL for switches and controls that are operational and maintain the Unit at Hot Standby until a complete evaluation has been made.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

CHECK

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 If Control Room accessibility is not possible, place the unit in a Cold Shutdown condition as follows:

1. Commence boration to Cold Shutdown conditions by manual valve lineup. Borate to 1900 ppm as shown below. Carry out boron sampling as required during cooldown.

NOTE: This concentration will ensure >5% Shutdown Margin at 201°F at any time in core life, assuming the most reactive CEA stuck full out. Use both the local boron flow meters vs. time and BAM Tank level change to determine how many gallons of boron have been added. Do not interpolate values shown, always round critical boron concentration DOWN to next lower value on table.

NOTE: If plant curves are available, they may be used to determine shutdown boron concentration requirements instead of this Table.

Boron Concentration Prior to Control Room Inaccessibility	Number of Gallons of Boron needed to reach 1900 ppm	BAM Tank level change (1 BAM Tank)
50 PPM	7223 Gallons	75%
100 PPM	7039 Gallons	73%
200 PPM	6668 Gallons	70%
300 PPM	6295 Gallons	66%
400 PPM	5919 Gallons	62%
500 PPM	5442 Gallons	57%
600 PPM	5162 Gallons	54%
700 PPM	4779 Gallons	50%
800 PPM	4395 Gallons	46%
900 PPM	4008 Gallons	42%
1000 PPM	3618 Gallons	38%
1100 PPM	3226 Gallons	34%
1200 PPM	2832 Gallons	30%
1300 PPM	2435 Gallons	25%
1400 PPM	2036 Gallons	21%
1500 PPM	1634 Gallons	17%

2. Ensure Steam Generator level is being maintained at approximately 65% by the Auxiliary Feedwater Pumps.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 (continued)

CHECK

2

3. Stop at least one Reactor Coolant Pump prior to reaching 500°F by tripping its breaker at the 2A1 or 2B1 switchgear. Additional RCPs may be stopped as desired to control cooldown rate. After pump coastdown, stop the lift pumps by opening the associated breakers in the electrical switchgear room. Re-close lift pump breakers after one minute elapses.
4. Place all Pressurizer heater switches at the Remote Shutdown Panel to OFF. Heaters may be energized to control RCS pressure as needed.
5. The highest RCS cold leg temperature (highest one with RCP running) shall be plotted every 30 minutes. The copy of the graph (Figure 1) shall be kept with this procedure. The RCS temperature and pressure shall be determined to be within the limits of Figure 3.4-3 at least once per 30 minutes during cooldown.

NOTE: Cooldown of the RCS shall be limited to $\leq 75^{\circ}\text{F}$ in any one hour period with RCS temperature $> 97^{\circ}\text{F}$.

6. The Pressurizer water phase temperature shall be plotted every 30 minutes using the Saturated Temperature vs. Pressure curve of this procedure (Figure 2). If possible, maximize letdown and minimize charging when using auxiliary spray to minimize thermal stress on spray nozzle.

NOTE: Cooldown of the Pressurizer shall be limited to $\leq 190^{\circ}\text{F}$ in any one hour period.

7. When the quantity of boron calculated in Step 5.9.1 has been added, cooldown may proceed. Verify by chemistry sample (if possible) that desired boron concentration has been obtained. Commence taking data on cooldown curve. Have the "B" Reactor Control Operator break Condenser vacuum by manually opening vacuum breaker MOVs.

CAUTION: MSIS will occur at about 475°F , and sealing steam will be lost. Condenser vacuum must be broken prior to 475°F to prevent seal damage.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 (continued)

CHECK

8. Have I & C personnel install temporary VCT level monitoring equipment. While locally monitoring and controlling VCT level, slowly open the atmospheric steam dumps and establish the desired cooldown rate.

NOTE: A makeup blend ratio to the VCT of about 9:1 is sufficient to maintain 1900 PPM boron in the RCS.

NOTE: A temperature differential of approximately 100°F between the RCS and Pressurizer should be maintained during cooldown. Cooldown of the Pressurizer must be accomplished by use of auxiliary spray and heater control.

9. When the SIAS amber permissive lights come on (1836 psia), block SIAS by turning the key operated switch on the Remote Shutdown Panel for both A and B channels.

10. At 1750 psia, isolate and bypass the following transmitters:

A. Charging header flow: close valve marked "HIGH SIDE", open valve marked "BYPASS", and close valve marked "LOW SIDE".

B. Charging header pressure: close its isolation valve.

11. Commence venting all four SITs from remote valve stations in the Electrical Penetration Room. (Valves 3733, 3734, 3735, 3736, 3737, 3738, 3739 and 3740).

NOTE: Do not vent more than one SIT to <235 psig.

12. Maintain at least two Reactor Coolant Pumps operating. If possible, two RCPs in the same loop should be left running.

13. Periodically adjust the steam dump controllers and auxiliary spray control to maintain the desired cooldown and de-pressurization rate. Verify that the Steam Generators are being maintained at approximately 65% level.

14. With RCS pressure <1700 psia, but prior to commencing SDC operations, rack out 2A and 2B Containment Spray Pump breakers (2-20203 and 2-20407).

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 (continued)

CHECK

2

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

A. Close 2-V-07145 and 2-V-07130 (Containment spray pump disch valves).

B. Close the following containment spray header manual isolation valves:

2-V-07161 (A hdr FCV upstream isol)

2-V-07164 (B hdr FCV upstream isol)

MV-07-? (A hdr FCV downstream isol)

MV-07-4 (B hdr FCV downstream isol)

/R5

/R5

16. When RCS pressure is <275 psia, rack in the breakers and then close the SIT discharge valves by placing the local control switch in the CLOSE position.

MV-3614: Bkr. 2-41219

MV-3624: Bkr. 2-41311

MV-3634: Bkr. 2-42117

MV-3644: Bkr. 2-42048

17. Rack out the SIT discharge valve breakers.

CAUTION: Prior to lowering RCS pressure below (later) psia, two RCPs in the same loop must be operating.

18. Lower RCS temperature to 325°F and RCS pressure to 275 psia.

19. Rack out one HPSI Pump prior to 280°F. Ensure the other HPSI pump remains operable.

CAUTION: With SDC in service, an increase in RCS pressure >350 psia will result in rapid RCS inventory loss due to lifting of relief valves in Hot Leg suction lines (Total capacity 4,600 gpm).

NOTE: Minimum pressure for RCP operation is (later), so it is necessary to proceed quickly to Shutdown Cooling.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2
CHECK

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 (continued)

20. Stop the operating RCPs prior to lowering pressure to (later) by tripping the breakers on 2A1 and 2B1 switchgear. After pump coastdown, stop the oil lift pumps by opening the breaker for each pump for one minute, then re-closing the breaker.
21. Reduce RCS pressure to <275 psia, then open the following valves from their local controllers:
- A. Hot Leg Suction Valves: V-3651, V-3652, V-3665, V-3480, V-3481, V-3664.
- NOTE: V-3664 and V-3665 local controllers are in Pipe Penetration Room; all others are in the Cable Spreading Room.
- NOTE: V-3545 (Hot Leg Suction Cross-Tie) is normally closed. It may be used to provide flow during off-normal conditions and must be open if both trains of SDC are in service.
- B. Open CCW from SDC Heat Exchangers: HCV-14-3A and HCV-14-3B by isolating instrument air to the HCVs and bleeding off air pressure.
- C. SDC Heat Exchanger Discharge Valves: MV-3456 and MV-3457.
- D. LPSI Header Isolation Valves: MV-3615, MV-3625, MV-3635 and MV-3645.
22. Close the following valves:
- A. RWT recirculation stop valves: V-3459, V-3463, and V-3597.
- B. Miniflow header stop valves: V-3659, V-3660, V-3495 and V-3496.
- C. V-3432 and V-3444 LPSI suction from RWT.
23. Have the Nuclear Operator establish communications on the Sound Power Phone System (Circuit No. 1) in the 2A LPSI Pump Room.

/R5

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

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2

5.0 SUBSEQUENT ACTIONS: (continued)

5.9 (continued)

CHECK

24. Establish SDC as follows:

- A. Insert keys for MV-3306 and MV-3657 (controllers located in A LPSI Room) and place switches to MODULATE position.
 - B. Using Key switches at local controllers, open MV-3517 and MV-3658.
 - C. Give MV-3306 a three second open signal, then allow switch to return to NORMAL.
 - D. Start the 2A LPSI Pump, then open MV-3306 to obtain 3000 gpm flow as indicated on FI-3306 at the Remote Shutdown Panel.
 - E. While observing SDC outlet temperature and flow on the Remote Shutdown Panel, alternately open MV-3657 and close MV-3306 to achieve desired cooldown rate and maintain 3000 gpm.
25. At 200°F RCS temperature, remove the trip and close fuses on the remaining HPSI Pump. Open the breaker for one Charging Pump so that no more than two Charging Pumps are operable.
26. Stabilize RCS temperature at approximately 100°F and RCS pressure at approximately 250 psia. Control pressure by use of Pressurizer heaters and auxiliary spray. Do not take the Pressurizer solid until Control Room access has been re-established.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

6.0 PURPOSE AND DISCUSSION:

- 6.1 This procedure provides instructions for placing the plant in a safe condition when operations cannot safely be conducted from the Control Room.
- 6.2 The reactor and turbine are manually tripped prior to leaving the Control Room, if possible, or locally from the Reactor Trip Switchgear and the Turbine front standard.
- 6.3 A heat sink is provided by automatic steam dump to the Condenser and/or to atmosphere.
- 6.4 Level is maintained in the Steam Generators by manual control of auxiliary feedwater valves with flow furnished by the Auxiliary Feedwater Pumps.
- 6.5 Pressurizer level and pressure are maintained by manual control of Pressurizer heaters, auxiliary spray valves, and letdown valves, and are monitored at the Remote Shutdown Panel.
- 6.6 Isolation switches located in the Reactor Auxiliary Building Electrical Equipment Room, Turbine Building Switchgear Room, Diesel Generator Rooms, and Reactor Auxiliary Building are manually selected to the ISOLATE position to prevent inadvertent operation of vital equipment due to possible electrical malfunction in the unattended Control Room.
- 6.7 A copy of this procedure will be posted at each manned operating station required for plant shutdown from outside the Control Room.
- 6.8 A listing of isolation switches will be posted on each of the following panels, MCCs, and distribution buses.
 1. Load Centers 2A, 2B, 2AB
 2. Transfer Panels 2A, 2B, 2AB
 3. MCC 2A5, 2A6, 2B5, 2B6
 4. 4160V Buses 2A3, 2B3, 2AB
 5. 4160V Buses 2A2, 2B2
 6. 6900V Buses 2A1, 2B1
 7. Diesel Generator 2A and 2B Control Panels
- 6.9 The Nuclear Plant Supervisor will utilize additional personnel as available to assist in required subsequent actions.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

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7.0 REFERENCES:

- 7.1 Emergency Operating Procedure 1-0030141
7.2 St. Lucie Unit 2 Technical Specifications

8.0 RECORDS:

- 8.1 A completed, initialed copy of this procedure shall be retained in the plant file.

9.0 APPROVAL:

Reviewed by Facility Review Group _____ October 26 1982
Approved by J. H. Barrow (for) _____ Plant Manager October 26 1982
Revision 5 Reviewed by FRG _____ May 11 1983
Approved by JH Barrow _____ Plant Manager May 11 1983

EP 2-0030141
Revision 5
Total No. of Pages 42

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"

ISOLATION SWITCHES

480V Load Center 2A3 - Pressurizer Heater Bus, Auxiliary Building
Electrical Equipment Room

1. Pressurizer Backup Heater Bank B-1
2. Pressurizer Backup Heater Bank B-2
3. Pressurizer Backup Heater Bank B-3

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

480V Load Center 2B3 - Pressurizer Heater Bus, Auxiliary Building
Electrical Equipment Room

1. Pressurizer Backup Heater Bank B-4
2. Pressurizer Backup Heater Bank B-5
3. Pressurizer Backup Heater Bank B-6

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V Load Center 2A2 - Auxiliary Building Electrical Equipment Room

1. Station Service Transf 2A2 Main Breaker
2. Bus Tie to 480V L.C. 2AB
3. Containment Fan Cooler 2-HVS-1A
4. Charging Pump 2A

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

480V Load Center 2A5 - Auxiliary Building Electrical Equipment Room

1. Containment Fan Cooler 2-HVS-1B

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

4160V SWGR 2A3 - Auxiliary Building Electrical Equipment Room

1. HP Safety Injection Pump No. 2A
2. LP Safety Injection Pump No. 2A
3. Containment Spray Pump No. 2A
4. Pressurizer Heater Transf No. 2A3
5. CEDM Cooling Fan 2HVE-21A
6. Component Cooling Water Pump No. 2A
7. Intake Cooling Water Pump No. 2A
8. Feeder to 4.16KV Bus No. 2AB
9. Feeder from 4.16KV Bus No. 2A2
10. Feed to 480V SS Transformer 2A2/2A5
11. Emergency Diesel Generator No. 2A
12. Auxiliary Feedwater Pump No. 2A

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V MCC 2A5 - Auxiliary Building Electrical Equipment Room

- * 1. Makeup Bypass to Charging Pumps V-2514 (Emergency Borate)
- 2. Aux. F.W. Pump 2A Discharge Valve to S/G 2A (MV-09-9 and I-SE-09-2)
- 3. S/G #2B to AFWP-2C Turbin MV-08-12
- 4. Comp Cool Wtr to Cont Cool Unit 2A Valve MV-14-9
- 5. Comp Cool Wtr from Cont Cool Unit 2A MV-14-10
- * 6. Comp Cool Wtr Cont Cool Unit 2B MV-14-11
- * 7. Comp Cool Wtr from Cont Cool Unit 2B Valve MV-14-12

*NOTE: Switch 1, 6, and 7 must be in ISOLATE to have remote control of 2A charging pump.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

480V MCC 2A6 - Auxiliary Building Electrical Equipment Room

1. Boric Acid Makeup Pump 2A
2. Boric Acid Makeup Pump 2B
3. Control Room Air Cond Unit 2HVA/ACC 3A
4. Shield Bldg. Vent Exhaust Fan 2HVE-6A
5. Control Room Emerg. Filtration Fan 2HVE-13A
6. Containment Spray Isolation Valve MV-07-161
7. 2A LPSI Pump Suction Valve V-3444

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V Load Center 2B2 - Auxiliary Building Electrical Equipment Room

1. Station Service Transf. 2B-2 Main Breaker
2. Bus Tie to 480V L.C. 2AB
3. Containment Fan Cooler 2HVS-1C
4. Charging Pump 2B

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V Load Center 2B5 - Auxiliary Building Electrical Equipment Room

1. Containment Fan Cooler 2-HVS-1D

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

4160V SWGR 2B3 - Auxiliary Building Electrical Equipment Room

1. Emergency Diesel Generator No. 2B
2. Feed to 480V SS Transformer 2B2/2B5
3. Pressurizer Heater Transf No. 2B3
4. Component Cooling Water Pump No. 2B
5. HP Safety Injection Pump No. 2B
6. LP Safety Injection Pump No. 2B
7. Containment Spray Pump No. 2B
8. CEDM Cooling Fan 2HVE-21B
9. Feeder to 4160V Bus No. 2AB
10. Intake Cooling Water Pump No. 2B
11. Incoming Feeder from 4.16KV Bus 2B2
12. Auxiliary Feedwater Pump No. 2B

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

480V MCC 2B6 - Auxiliary Building Electrical Equipment Room

1. 2HVE-13B - Control Room Booster Fan
2. Control Room Air Cond 2HVA-3B
3. Containment Spray Isolation Valve (MV-07-164)
4. Shield Bld Vent Exh Fan 2HVE-6B
5. 2B LPSI Pump Suction Valve (V-3432)

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V MCC 2B5 - Auxiliary Building Electrical Equipment Room

1. CCW to Containment Fan Cooler 2HVS-1C (MV-14-13)
2. CCW from Containment Fan Cooler 2HVS-1D (MV-14-14)
- * 3. Boric Acid Gravity Feed Valve (V-2508)
4. Boric Acid Gravity Feed Valve (V-2509)
- * 5. CCW to Containment Fan Cooler 2HVS-1D (MV-14-15)
6. CCW from Containment Fan Cooler 2HVS-1D (MV-14-16)
7. 2B AFW Pump Discharge to 2B Steam Generator (MV-09-10 and I-SE-09-3)
(Back of MCC 2B5)
8. 2A Steam Generator to 2C AFW Pump Turbine (MV-08-13)
(Back of MCC 2B5)

*NOTE: Switch 3 and 5 must be in ISOLATE to have remote control of 2B charging pump.

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

480V MCC 2AB - Auxiliary Building Electrical Equipment Room

1. Component Cooling Water Suction Valve Hdr. A (MV-14-3)
2. Component Cooling Water Suction Valve Hdr. B (MV-14-4)
3. Component Cooling Water Discharge Valve Hdr. A (MV-14-1)
- * 4. Component Cooling Water Discharge Valve Hdr. B (MV-14-2)
- * 5. Control Room Air Cond Unit 2-HVA/ACC 3C

*NOTE: Switch 4 and 5 must be in ISOLATE to have remote control of
2C charging pump.

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

Transfer Panel 2AB - Auxiliary Building Electrical Equipment Room
(2AB Battery Room)

1. 2C Aux Feed Pump Stop Valve MV-03-3

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

APPENDIX "A"
(continued)

ISOLATION SWITCHES

Transfer Panel 2A - Auxiliary Building Electrical Equipment Room

1. 2A Steam Gen Atms Steam Dump PIC-08-1A1
2. 2A Steam Gen Atms Steam Dump PIC-08-1A1
3. SS-1-157 - Letdown Cont Isol Valve (V-2516)
4. SS-1-189 - Aux Spray Valve (I-SE-02-3)
5. SS-194 - Charging Line Isol Valve (V-2523)
6. 2A Diesel Gen Watt/Volt Meter
7. SS-1-176 - Charging to Loop 2A2 (I-SE-02-02)
8. 2C AFW Pmp Discg to 2B Steam Gen (MV-09-12 and I-SE-09-5)
9. 2B Steam Generator Atms Steam Dump PIC-08-3A1

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

APPENDIX "A"
(continued)

ISOLATION SWITCHES

Transfer Panel 2B - Auxiliary Building Electrical Equipment Room

1. 2B Steam Gen Atms Steam Dump PIC-08-1B1
2. 2B Steam Gen Atms Steam Dump PIC-08-1B1
3. SS-2-157 - Letdown Stop Valve (V-2515)
4. SS-2-189 - Aux Spray Valve (I-SE-02-04)
5. SS-1-194 - Letdown Cont Isol Valve (V-2522)
6. 2B Diesel Gen Watt/Volt meter
7. SS-2-176 - Charging to Loop 2B1 (I-SE-02-01)
8. 2C AFW Pump Disch to 2A Steam Gen (MV-09-11 and I-SE-09-4)
9. 2A Steam Gen Atms Steam Dump PIC-08-3B1

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

Communications Isolation Panel - Auxiliary Building Communications Room

1. Fire Alarm/Site Evacuation - (Control Console, Isolation Switch)

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

4160 SWGR 2A2 - Turbine Building Switchgear Room

1. Feeder to 480V SWGR No. 2A1
2. Feeder to 4.16KV Bus No. 2A3
3. Incoming Feeder from 4.16KV SWGR 2A4

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

4160V SWGR 2B2 - Turbine Building Switchgear Room

1. Feeder to 480V SWGR No. 2B1
2. Feeder to 4.16KV Bus No. 2B3
3. Incoming Feeder from 4.16KV SWGR 2B4

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

6900V SWGR 2A1 - Turbine Building Switchgear Room

1. Incoming Feeder from S/U Transf No. 2A

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

6900V SWGR 2B1 - Turbine Building Switchgear Room

1. Incoming Feeder from S/U Transf No. 2B

2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

2

APPENDIX "A"
(continued)

ISOLATION SWITCHES

AFW PUMP AREA

1. MV-08-19B (Atmospheric Dump Valve)
2. MV-08-18B (Atmospheric Dump Valve)
3. MV-08-18A (Atmospheric Dump Valve)
4. MV-08-19A (Atmospheric Dump Valve)

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

4160V SWGR 2AB - Auxiliary Building Ground Floor

1. Component Cooling Water Pump No. 2C
2. Intake Cooling Water Pump No. 2C
3. Incoming Feeder from 4.16KV Bus 2A3
4. Incoming Feeder from 4.16KV Bus 2B3

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

480V Load Center 2AB - Auxiliary Building Ground Floor

1. Bus Tie to 480V L.C. 2A2 (Left End of Panel)
2. 2C Charging Pump
3. Bus Tie to 480V L.C. 2B2

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2

2A Diesel Generator Control Panel

1. Voltage Control
2. Frequency Control
3. Start Circuit

ST. LUCIE UNIT 2
EMERGENCY OPERATING PROCEDURE 2-0030141, REVISION 5
CONTROL ROOM INACCESSIBILITY

APPENDIX "A"
(continued)

ISOLATION SWITCHES

2B Diesel Generator Control Panel

1. Voltage Control
2. Frequency Control
3. Start Circuit

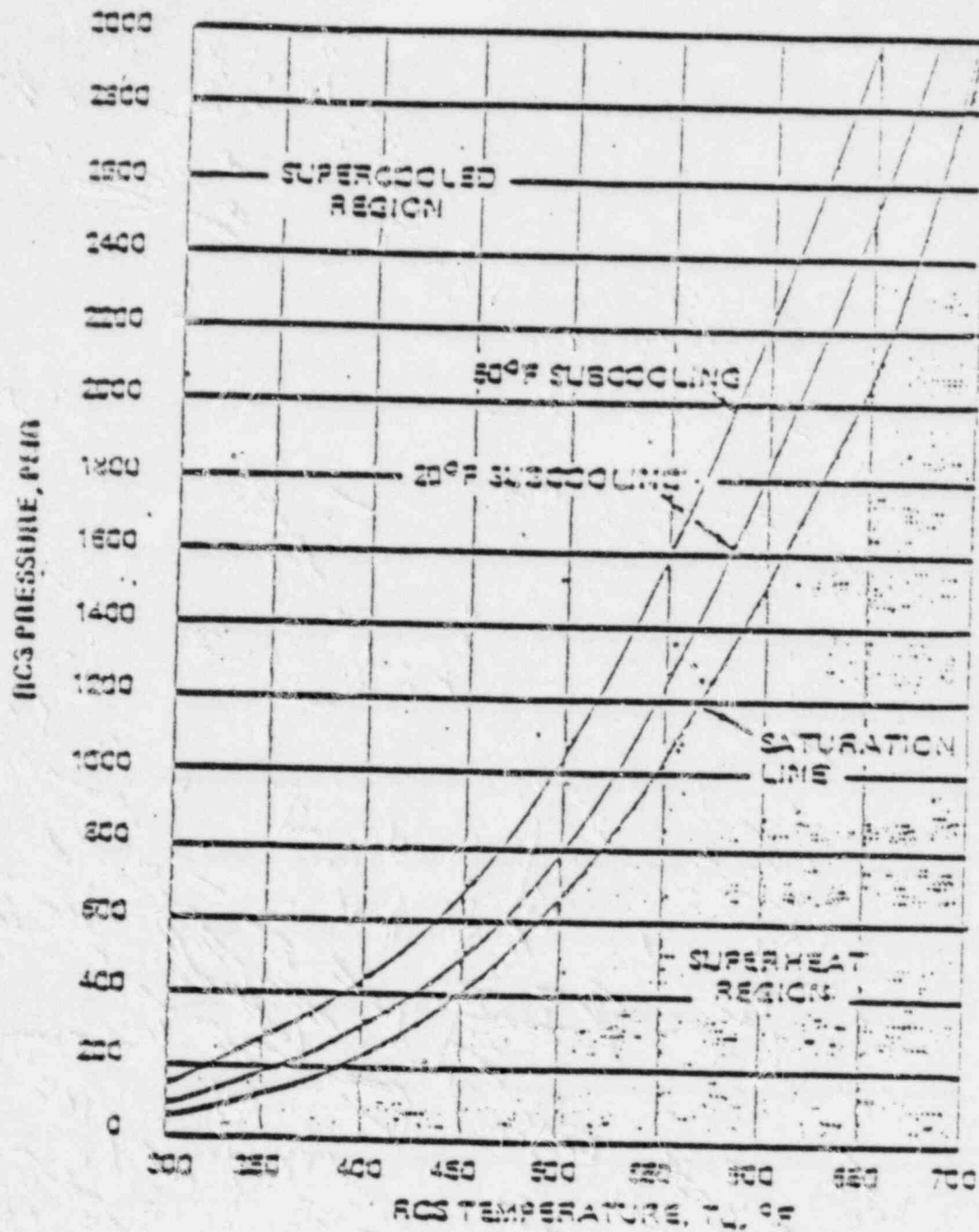
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CONTROL ROOM INACCESSIBILITY

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CONTROL ROOM INACCESSIBILITY

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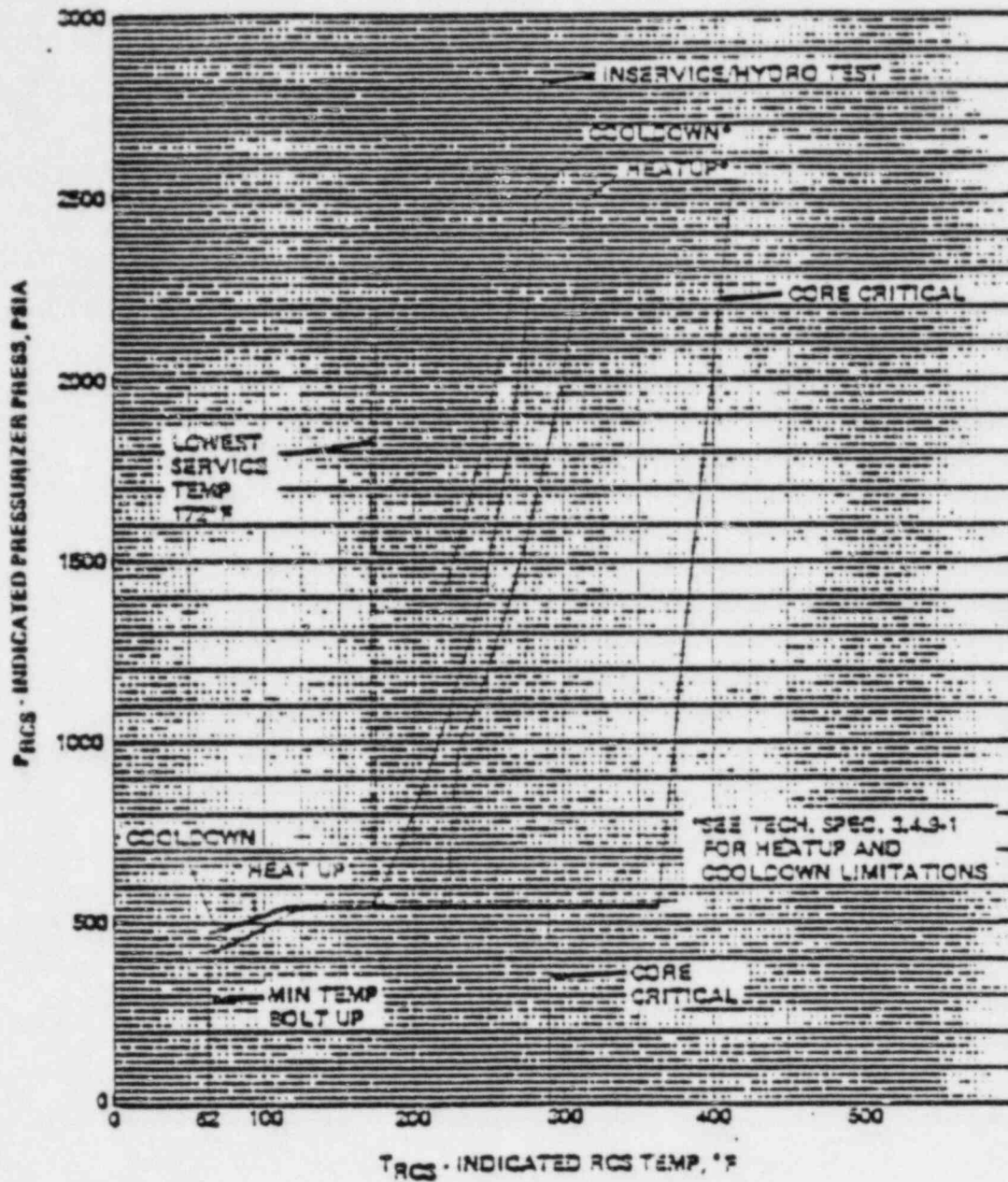


FIGURE 1.4.3

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

2

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9					
10	Control Room II			G. Regal	
11				Ugelow, Al - Backfile	
12				Training - Larry Baker ECI	
13					
14				J. Spodick	
15	Training			T. Vogan - GO	
				G. J. Boissy	
				R. R. Jennings	
				H. M. Mercer	
				R. J. Frechette	
				Resident NRC	
				NRC - IE: HQ	
				Attn: Chief, Nuclear Response Branch	
				C. Burns - CE	

PROCESSED BY: J. Haller DATE _____

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNIT 2
OFF-NORMAL OPERATING PROCEDURE NO. 2-0440030
REVISION 1

2

1.0 TITLE:

SDC/LPSI - OFF NORMAL OPERATION

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group _____ February 17 1983

Approved by J. H. Barrow (for) _____ Plant Manager February 17 1983

Revision 1 Reviewed by FRG _____ May 11 1983

Approved by J. H. Barrow (for) _____ Plant Manager May 11 1983

3.0 PURPOSE AND DISCUSSION:

3.1 Purpose:

This procedure provides instructions to be followed in the event of a component malfunction which could degrade the ability to provide shutdown cooling or safety injection flow.

3.2 Discussion:

1. No single active component failure will prevent the system from performing its design functions. However, manual action may be required to maintain maximum system effectiveness.
2. Operation with a partial system means only that the cooldown process will take a longer period of time.
3. The "A" and "B" trains of the SDC system are two separate and distinct systems. The only cross-connect between the two trains is MV-3545. This valve connects the section of piping between MV-3481 and MV-3480 on the 2A Hot Leg suction line to that section of piping between MV-3651 and MV-3652 on the 2B Hot Leg suction line.

4.0 SYMPTOMS:

4.1 The following are indications of SDC/LPSI System leakage:

1. Safeguards Room Sump High Level alarms
2. Local visual leakage indications

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4.0 SYMPTOMS: (continued)

4.2 The following are indications of a loss of shutdown cooling capacity:

1. LPSI Pump trip

2. SDC low flow as indicated by:

<u>"A" Train</u>	<u>"B" Train</u>
FI-3312	FI-3332
FI-3322	FI-3342
FR-3306	FR-3301

/R1

3. Increasing temperature on SDC Heat Exchanger outlets as indicated on:

<u>"A" Train</u>	<u>"B" Train</u>
TI-3303X	TI-3303Z
TI-3303W	TI-3303Y
TIR-3351	TIR-3352

4. LPSI Pump low discharge pressure as indicated on PI-3307 (2A LPSI Pump) or PI-3304 (2B LPSI Pump)

5. SDC High Pressure alarm A and/or B Trains

6. FCV-3306 ("A" LPSI) or FCV-3301 ("B" LPSI) failed open

7. HCV-3657 ("A" LPSI) or HCV-3512 ("B" LPSI) failed closed

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5.0 INSTRUCTIONS:

5.1 Immediate Automatic Actions:

5.1.1 SDC loop suction valves close on high pressure of 500 psig.

5.2 If System leakage is indicated:

5.2.1 Immediate Operator Action: None

5.2.2 Subsequent Operator Action:

1. Isolate affected portion of system.
2. Re-establish flow to core using remaining portion of system.
3. If leak cannot be isolated, proceed to Step 5.3.

5.3 If a loss of SDC capacity has occurred:

5.3.1 Immediate Operator Action: None

5.3.2 Subsequent Operator Action:

1. Check LPSI Pumps operating and restart if necessary.
2. Check Component Cooling Water flow to the SDC HXs. Start additional CCW Pumps as required.
3. Check Intake Cooling Water flow to be normal and if necessary increase ICW flow through the Heat Exchangers.
4. Check ICW strainer for high ΔP .
5. Verify proper valve lineup as follows:

"A" SDC TRAIN

<u>VALVE NO.</u>	<u>DESCRIPTION</u>	<u>POSITION</u>
MV-3517	2A LPSI Pump Disch to 2A SDC HX	Open
FCV-3306	2A SDC HX Bypass Flow Control	Throttled
MV-3456	SDC from 2A SDC HX	Open
HCV-3657	SDC from 2A SDC HX Flow Control	Throttled
MV-3615	LPSI Hdr Disch to Loop 2A2	Open
MV-3625	LPSI Hdr Disch to Loop 2A1	Open
MV-3480	SDC Suction from Loop 2A	Open
MV-3481	SDC Suction from Loop 2A	Open
MV-3664	SDC Suction from Loop 2A	Open

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8.0 INSTRUCTIONS: (continued)

5.3 (continued)

5.3.2 (continued)

5. (continued)

"B" SDC TRAIN

<u>VALVE NO.</u>	<u>DESCRIPTION</u>	<u>POSITION</u>
MV-3658	2B LPSI Pump Disch to 2B SDC HX	Open
FCV-3301	2B SDC HX Bypass Flow Control	Throttled
MV-3457	SDC from 2B SDC HX	Open
HCV-3512	SDC from 2B SDC HX Flow Control	Throttled
MV-3635	LPSI Hdr Disch to Loop 2B1	Open
MV-3645	LPSI Hdr Disch to Loop 2B2	Open
MV-3652	SDC Suction from Loop 2B	Open
MV-3651	SDC Suction from Loop 2B	Open
MV-3665	SDC Suction from Loop 2B	Open

6. If MV-3480 or MV-3481 ("A" SDC loop suction) or MV-3651 or MV-3652 ("B" SDC loop suction) have tripped closed due to high pressure, perform the following:
 - A. Stop both LPSI Pumps.
 - B. Reduce RCS pressure to <275 psig.
 - C. For loop "A" perform the following:
 1. Open MV-3480 and MV-3481.
 2. Close HCV-3657 (2A SDC HX Flow Control).
 3. Throttle FCV-3306 (2A SDC HX Bypass Flow Control) to 5% open.
 4. Start 2A LPSI Pump. Slowly reopen FCV-3306 to its original position and return to auto control.
 5. Slowly open HCV-3657 to obtain desired heat exchanger flow.
 - D. For loop "B" perform the following:
 1. Open MV-3651 and MV-3652.
 2. Close HCV-3512 (2B SDC HX Bypass Flow Control).
 3. Throttle FCV-3301 (2B SDC HX Bypass Flow Control) to 5% open.
 4. Start 2B LPSI Pump. Slowly reopen FCV-3301 to its original position and return to auto control.
 5. Slowly open HCV-3512 to obtain desired heat exchanger flow.

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5.0 INSTRUCTIONS: (continued)

5.4 If a plant cooldown is in progress and shutdown cooling capability cannot be restored, perform the following:

5.4.1 Immediate Operator Action: None

5.4.2 Subsequent Operator Action:

1. Isolate the Shutdown Cooling System by closing the following valves:
 - MV-3481 (SDC suction from loop 2A)
 - MV-3480 (SDC suction from loop 2A)
 - MV-3651 (SDC suction from loop 2B)
 - MV-3652 (SDC suction from loop 2B)
 - MV-3615 (LPSI hdr disch to loop 2A2)
 - MV-3625 (LPSI hdr disch to loop 2A1)
 - MV-3635 (LPSI hdr disch to loop 2B1)
 - MV-3645 (LPSI hdr disch to loop 2B2)
2. If the RCS is solid, rely on natural circulation flow and do not start Reactor Coolant Pumps.
3. If a Pressurizer bubble is still established, increase RCS pressure to 400 psia and start at least one Reactor Coolant Pump in the "B" loop.
4. Establish feedwater flow to each Steam Generator using the Auxiliary Feedwater Pumps.
5. Re-establish cooldown using the Atmospheric Steam Dumps and proceed to Cold Shutdown.

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5.0 INSTRUCTIONS: (continued)

5.5 If refueling operations are in progress and shutdown cooling capability cannot be restored, perform the following:

5.5.1 Immediate Operator Action: None

5.5.2 Subsequent Operator Action:

1. Stop refueling operations and insure Containment integrity.
2. Verify the Fuel Pool Cooling System is in operation per OP 2-0350020.
3. Line up to recirculate the refueling cavity with the Fuel Pool Purification Pump as follows:
 - A. Verify that the purification pump is stopped.
 - B. Position the following valves:

<u>VALVE NO.</u>	<u>DESCRIPTION</u>	<u>POSITION</u>	
V-4201	Fuel Pool skimmer suction	Closed	
V-4220	Purification pump low suction	Open	
V-4222	Purification pump suction	Open	
V-4226	Purification pump disch	Open	
V-4228	Purification filter inlet	Closed	
V-4229	Purification filter bypass	Open	
V-4236	Fuel Pool IX inlet	Closed	
V-4251	Fuel Pool IX bypass	Open	
V-4252	Purification loop to fuel pool	Closed	
V-7206	Purification loop to refueling cavity (outside Containment)	Open	
V-7419	Purification loop to refueling cavity (outside Containment)	Open	/R1
V-7189	Purification loop to refueling cavity (inside Containment)	Open	
V-7421	Purification loop to refueling cavity (inside Containment)	Open	/R1
V-7422	Purification loop to refueling cavity (inside Containment)	Open	/R1

- C. Start the Purification Pump and verify flow from the Spent Fuel Pool to the refueling cavity. Return flow will be via the fuel transfer tube.
- D. Continue this mode of operation until the Shutdown Cooling System can be returned to service.

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5.0 INSTRUCTIONS: (continued)

5.6 Loss of Power to FCV-3306, FCV-3301, HVC-3657, HCV-3512, FIC-3306, or FIC-3301.

5.6.1 Immediate Operator Action: None

5.6.2 Subsequent Operator Action:

1. If FCV-3306 or FCV-3301 fail open, throttle the valve manually to maintain 3000 GPM flow to the RCS.
2. If HCV-3657 or HCV-3512 fail closed, throttle the valve manually to maintain RCS temperature as required on TIR-3351 or TIR-3352.
3. If FIC-3306 fails resulting in loss of flow indication and full opening of FCV-3306, or FIC-3301 fails which results in loss of flow indication and FCV-3301 failing full open:
 - A. Throttle FCV-3306 or FCV-3301 manually.
 - B. Observe individual header flow instruments to maintain >3000 GPM.

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2A1 : FI-3322
2B2 : FI-3342
2A2 : FI-3312
2B1 : FI-3332

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5.0 INSTRUCTIONS: (continued)

5.7 If Shutdown Cooling capability is lost and the RCS level has dropped below the hot leg suction and/or the RCS has heated up excessively, reestablish shutdown cooling as follows:

5.7.1 Immediate Operator Action: None

5.7.2 Subsequent Operator Action:

1. Open MV-3536 or MV-3539 (associated warmup valve for LPSI pump to be started).
2. Crack open the LPSI pump suction valve and ensure the appropriate RWT outlet valve is open.
3. Throttle HCV-3615, HCV-3625, HCV-3635, and HCV-3645 (LPSI hdr valves).
4. Start the LPSI Pump. If the pump cavitates severely, open the suction valve further or stop the pump as necessary.

NOTE: Several start attempts (with several minutes between starts) may be required.

NOTE: During Step 5 below, reactor vessel level should be monitored closely.

5. When the pump is running satisfactorily, slowly close the LPSI suction valve and ensure suction from the RCS hot leg is adequate. Slowly close the warmup valve and open the LPSI header valves as desired.

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5.0 INSTRUCTIONS: (continued)

5.8 Loss of Power to A or B electrical trains.

5.8.1 Immediate Operator Action: None

5.8.2 Subsequent Operator Action:

NOTE: MV-3545 (Hot leg suction cross-conn) is powered from 480V MCC 2AB. It is therefore essential for the operation of MV-3545 that the proper electrical lineup be ensured from the remaining operable electrical train (see Figure 1).

1. Loss of power to "A" electrical train will cause loss of operability of MV-3652, MV-3481, and MV-3664. SDC flow suction to the 2B LPSI Pump will then have to be aligned through MV-3480, MV-3545, MV-3651, and MV-3665.
2. If MV-3545 is inoperable, ensure power is available by verifying the following breaker alignment in the given order:

<u>BREAKER</u>	<u>480V SWITCHGEAR</u>	<u>POSITION</u>
2-40702	2AB	Open
2-40220	2A2	Open
2-40706	2AB	Closed
2-40703	2AB	Closed
2-40504	2B2	Closed
2-42404	2AB MCC	Closed

3. Loss of Power to "B" electrical train will cause loss of operability of MV-3480, MV-3651, and MV-3665. SDC flow suction to the 2A LPSI Pump will then have to be aligned through MV-3652, MV-3545, MV-3481, and MV-3664.

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5.0 INSTRUCTIONS: (continued)

5.8 (Cont.)

5.8.2 (Cont.)

4. If MV-3545 is inoperable, ensure power is available by verifying the following breaker alignment in the given order:

<u>BREAKER</u>	<u>480V SWITCHGEAR</u>	<u>POSITION</u>
2-40706	2AB	Open
2-40504	2B2	Open
2-40702	2AB	Closed
2-40703	2AB	Closed
2-40220	2A2	Closed
2-42404	2AB MCC	Closed

/R1

6.0 REFERENCES:

6.1 FSAR, Chapters 6 and 9

6.2 CE P&ID 13172-310-130, 131

6.3 Ebasco P&ID 2998-G-088

7.0 RECORDS REQUIRED:

7.1 Normal log entries

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FIGURE 1

