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BATCH 100

DOCUMENT NUMBER	SHEET NUMBER	REVISION NUMBER	COPY NUMBER
AR 921		04	24
AR 952		04	24

INSTRUCTIONS TO THE ADDRESSEE

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

_X_ (1) VERIFY THE DOCUMENTS RECEIVED AGREE WITH THE ABOVE DESCRIPTION
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_X_ (4) SIGN AND DATE IN THE SPACES BELOW INDICATING THAT YOU COMPLETED THESE INSTRUCTIONS
___ (5) SIGN BELOW INDICATING THAT YOU HAVE READ AND UNDERSTOOD THE CHANGES AS IDENTIFIED
_X_ (6) RETURN TO DOCUMENT CONTROL, CRYSTAL RIVER UNIT 3, MAC# NA1C___
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CRYSTAL RIVER FLA. 34423-0219
___ (7) QUALITY PROGRAMS PERSONNEL HAVE READ AND UNDERSTOOD THE CHANGES TO THE AFFECTED QAP'S

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300059

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Rev. 4 08/27/92

Effective Date 9/2/92

ANNUNCIATOR RESPONSE

AR-921

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

HYDROGEN PANEL ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall

DATE: 9/2/92

INTERPRETATION CONTACT: Nuclear Operations Superintendent

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1.0 PURPOSE

1.1 Establish a reference document for each Annunciator Window on the Hydrogen Panel Lampbox.

1.2 Establish operator actions for valid Annunciator alarms on the Hydrogen Panel Lampbox.

1.3 Establish a reference to other procedures which address operator actions for valid Annunciator alarms on the Hydrogen Panel Lampbox.

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

None

2.2 DEVELOPMENTAL REFERENCES

2.2.1 INPO 90-021, Good Practice OP-217, Alarm Response Procedures

3.0 PERSONNEL INDOCTRINATION

None

4.0 INSTRUCTIONS

4.1 Respond to alarms on the Hydrogen Panel Lampbox as indicated on Enclosure 1, Annunciator Response.

5.0 FOLLOW-UP ACTIONS

None

ANNUNCIATOR PANEL LOCATION HYDROGEN PANEL

ANNUNCIATOR PANEL A

HORIZONTAL ROW 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
HYDROGEN PURITY HIGH OR LOW A-1-1	1. a) Low purity alarm sounds when purity is < 90%. b) High purity alarm sounds when purity meter pointer is > 100%. 2. a) None.	1. a) None. 2. a) If low purity condition causes alarm, this should be corrected through purging small amounts of hydrogen to the generator b) If high purity causes alarm, have Maintenance Department correct problem.	< 90% > 100%	TB-328-CT	TB-17
HYDROGEN PRESSURE HIGH OR LOW A-1-2	1. a) Machine gas pressure > 65 PSIG b) Machine gas pressure < 45 PSIG 2. a) None.	1. a) None. 2. a) On high press alarm check gas feed system. b) If low press alarm check for leaks, also check gas feed system. c) Low press alarm may be normal on large load changes.	65 PSIG 45 PSIG	TB-160-PS	TB-17
HYDROGEN SUPPLY PRESSURE LOW A-1-3	1. a) Alarm sounds when supply press decreases to 75 PSIG. 2. a) None.	1. a) None. 2. a) Check hydrogen system and correct reason for low pressure.	75 PSIG	TB-312-PS	TB-17
WATER DETECTOR HIGH A-1-4	1. a) Alarm occurs when any one of the three water detectors fills with either water or oil. 2. a) None.	1. a) None. 2. a) Check each detector by draining the detector into a container and determine content (oil or water, or both). b) If leak is observed, prepare to shutdown and investigate cause of leak. c) If leak is small, continue to operate while monitoring leakage.		TB-177-LS TB-178-LS TB-179-LS	TB-17
HYDROGEN TEMPERATURE HIGH A-1-5	1. a) High temp alarm actuates when temp increases a few degrees above max. normal operating temp. 2. a) Generator overloading.	1. a) None. 2. a) Check hydrogen purity. b) Check hydrogen cooler cooling water flow and temp. c) Check for possible overloading conditions.	55 C	TB-187-TS	TB-17
DEFOAMING TANK LEVEL HIGH A-1-6	1. a) Alarm is actuated when the level in either defoaming tank is high above the overflow connection. 2. a) None.	1. a) None. 2. a) Check level in defoaming tank. b) If the float valve is stuck, jack the valve open manually to control level in tank. c) If the float valve cannot be operated the defoaming tank can be drained through the drain valve with caution.		TB-180-LS1 TB-180-LS2	TB-17
AIR SIDE SEAL OIL PUMP OFF A-1-7	1. a) Alarm actuates when differential pressure across pump decreases to 5 psi. 2. a) None.	1. a) Starts backup air side seal oil pump. 2. a) Ensure backup air side seal oil pump running. b) Investigate cause of loss of air side seal oil pump.	5 psid	TB-298-PS	TB-07

...TOR PANEL LOCATION HYDROGEN PANEL ANNUNCIATOR PANEL 2 HORIZONTAL ROW 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
SEAL OIL PRESSURE LOW A-2-1	1. a) Alarm is received when pressure at the seals decreases to 5 psi above hydrogen pressure. 2. a) None.	1. a) Starts backup seal oil pump. 2. a) Investigate reason for loss of seal oil pressure. b) Check operation of turbine backup regulator.	5 PSIG ABOVE H_2 PRESS	TB-303-PS	TB-13
HYDROGEN SIDE LEVEL LOW A-2-2	1. a) Level switch in hydrogen side drain regulator. 2. a) None.	1. a) Drain valve opens. 2. a) Check level to ensure drain valve operation, if necessary, jack drain valve open.		TB-305-LS	TB-17
SEAL OIL TURBINE BACKUP PRESSURE LOW A-2-3	1. a) Pressure switches closes when turbine oil backup pressure decreases to < 70 PSIG at the seals. 2. a) Possible loss of main lube oil pressure.	1. a) None. 2. a) Start high pressure seal oil backup pump if available (18P-8).	≤ 70 PSIG	TB-299-PS	TB-17
HYDROGEN SIDE SEAL OIL PUMP OFF A-2-4	1. a) Differential press switch across pump decreases to 5 psi. 2. a) None.	1. a) None. 2. a) Investigate cause of loss of hydrogen side seal oil pump. b) Ensure purity of hydrogen is maintained with limits by purging with small amounts of hydrogen when necessary.	5 psid	TB-294-PS	TB-07
AIR SIDE SEAL OIL BACKUP PUMP RUNNING A-2-5	1. a) Any time the starting relay is energized. 2. a) None.	1. a) None. 2. a) Ensure pump is operating properly.		1CR	TB-13
A-2-6					
A-2-7					

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ANNUNCIATOR RESPONSE

AR-952

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

WDB ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall

DATE: 9/2/92

INTERPRETATION CONTACT: Nuclear Operations Superintendent

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1.0 PURPOSE

1.1 Establish a reference document for each Annunciator Window on the WD-WP Lampbox.

1.2 Establish operator actions for valid Annunciator alarms on the WD-WP Lampbox.

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

2.0 REFERENCES

2.1 IMPLEMENTING REFERENCES

None

2.2 DEVELOPMENTAL REFERENCES

2.2.1 INPO 90-021, Good Practice OP-217, Alarm Response Procedures

2.2.2 Annunciator Window Engraving Drawing E-224-050.

3.0 PERSONNEL INDOCTRINATION

None

4.0 INSTRUCTIONS

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

5.0 FOLLOW-UP ACTIONS

None

ANNUNCIATOR PANEL LOCATION RADWASTE DISPOSAL CUBICLE

ANNUNCIATOR PANEL WD-WP (B)

HORIZONTAL ROW 1

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM/AUX BLDG. INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING REFERENCE ELEMENT NUMBER & LOCATION	
WP-1-1					
DECAY HEAT PIT SUMP LEVEL EXTRA HIGH WP-1-2	1. a) Indicates that level of DH sump 3B > 3.0'. 2. a) DH pit sump pump 3B (WDP-3B) auto-start alarm. b) DH pit sump pump 3B run indicating lamps. c) Sump level indication on WD panel.	1. a) None (DH pit sump pump 3B should cycle on/off at sump level of 2'/1.5') 2. a) Check that DH sump pump 3B is running. b) Check DH sump pump 3B valve lineup. c) Investigate drains to DH pit sump for abnormal drainage.		WD-134-LS	WD-10
AUX BLDG SUMP PUMP 3A AUTO-START WP-1-3	1. a) Aux Bldg sump level > 2.5' and, b) Aux Bldg sump pump 3A (WDP-4A) is selected. 2. a) Pump run indicating lamps on WD panel. b) Possible Aux Bldg sump level extra high alarm. c) Pump discharge pressure on WD panel. d) Sump level indicator on WD panel.	1. a) Aux Bldg sump pump 3A auto-start. b) Aux Bldg sump pump 3B auto-starts if level > 5.5'. 2. a) Normal function alarm-if frequency of auto-starts is excessive, check valve lineup of systems draining to sump and determine source.		WD-132-LS	WD-11
AUX BLDG SUMP PUMP 3A TRIP WP-1-4	1. a) Pump auto-stops if Aux Bldg sump level < 1.5'. 2. a) Pump run indicating lamps on WD panel. b) Sump level indicator on WD panel.	1. a) Pump trips. 2. a) Normal function alarm investigate valve lineup/pump switch position if Aux Bldg level extra high alarm exists.		WD-132-LS	WD-11
WASTE GAS COMP SEAL LEAK DR TK LOW LEVEL WP-1-5	1. a) Indicates low level of 8 inches. 2. a) Possible RMA-2(G) or RMA-3 alarm.	1. a) Auto drain valve (WDV-1032) closes. 2. a) Bleed air off WDV-1030 to close.	8 in.	WD-357-LS2	WD-135
AUX BLDG SUMP PUMP 3B AUTO-START WP-1-6	1. a) Aux Bldg sump level > 2.5' and, b) Aux Bldg sump pump 3B (WDP-4B) is selected. 2. a) Pump run indicating lamps on WD panel. b) Possible Aux Bldg sump level extra high alarm. c) Pump discharge pressure on WD panel. d) Sump level indicator on WD panel.	1. a) Aux Bldg sump pump 3B auto-starts. b) Aux Bldg sump pump 3A auto-starts if level > 5.5'. 2. a) Normal function alarm-if frequency of auto-starts is excessive, check valve lineup of systems draining to sump and determine source.		WD-132-LS	WD-12
AUX BLDG SUMP PUMP 3B TRIP WP-1-7	1. a) Pump auto-stops if Aux Bldg sump level < 1.5'. 2. a) Pump run indicating lamps on WD panel. b) Sump level indicator on WD panel.	1. a) Pump trips. 2. a) Normal function alarm-investigate valve lineup/pump switch position of Aux Bldg level extra high alarm exists.		WD-132-LS	WD-12
WASTE GAS SAMPLING ANALYZER PANEL IN ALARM WP-1-8	1. a) Loss of 120 VAC power to Hays Gas Analyzer Panel. 2. a) Power indicating lamp on Hays Panel is 'out'. b) Gas flow < 10 CFH	1. a) None. 2. a) Check panel power supply switch. b) Check 480 VAC supply breaker on reactor MCC 382. c) Check pump operation and valve alignment.		PF RELAY WD-21-FIS	WD-131 WD-131, 135

ANNUNCIATOR PANEL LOCATION RADWASTE DISPOSAL CUBILLE

ANNUNCIATOR PANEL WD-WP (8)

HORIZONTAL ROW 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM/AUX BLDG. INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING REFERENCE ELEMENT NUMBER & LOCATION	
AUX BLDG SUMP LEVEL EXTRA HIGH WP-2-1	1. a) Indicates that level of Aux Bldg sump > 5.5'. 2. a) Aux Bldg sump pump 3A and/or 3B auto-start alarms. b) Sump pump indicating lamps on WD panel. c) Sump level indicator on WD panel.	1. a) None. 2. a) Check that Aux Bldg sump pumps 3A and/or 3B are running. b) Check sump pump valve lineup. c) Determine source of water into sump.		WD-132-LS1	WD-11
WASTE TRANSF PUMP 3A AUTO-START FAILURE WP-2-2	1. Alarm actuates when: a) Bleed tank 3A selected on feed select switch (and pulled). b) MUV-103 open and c) Waste transfer pump 3A (WDP-5A) not running. 2. a) Pump run indicating lamps on WD panel. b) MUV-103 indicating lamps in Control Room.	1. a) None. 2. a) Check valve lineup, switch positi and feed permissive circuits for correct positions.		42b RELAY F1 3MUV-103	WD-13
WASTE TRANSF PUMP 3A TRIP WP-2-3	1. a) Pump control switch in NOR-AFT-START position and pump not running. 2. a) Pump motor overcurrent. b) Pump started locally then sel. for feed.	1. a) None. 2. a) Check for pump motor overload trip condition. b) Check valve lineup and switch position. c) Call Control Room to see if pump sel. f feed.		CS/SC-CS/9 42b	WD-13 WD-73
WASTE TRANSF PUMP 3B AUTO-START FAILURE WP-2-4	1. Alarm actuates when: a) Bleed tank 3B selected on feed select switch (and pulled). b) MUV-103 open and c) Waste transfer pump 3B (WDP-5B) not running. 2. a) Pump run indicating lamps on WD panel. b) MUV-103 indicating lamps in Control Room.	1. a) None. 2. a) Check valve lineup, switch position and feed permissive circuit indication for correct positions.		42b RELAY F2 3MUV-103	WD-14
WASTE TRANSF PUMP 3B TRIP WP-2-5	1. a) Pump control switch in NOR-AFT-START position and pump not running. 2. a) Pump motor overcurrent. b) Pump started locally then sel. for feed.	1. a) None. 2. a) Check for pump motor overload trip condition. b) Check valve lineup and switch position. c) Call Control Room to see if pump sel. for feed.		CS/SC-CS/9 42b	WD-14 WD-73

ANNUNCIATOR PANEL LOCATION RADWASTE DISPOSAL CUBICLE ANNUNCIATOR PANEL WD-WP (S) HORIZONTAL ROW 2

WINDOW TITLE	1. INDICATED CONDITION 2. CONTROL ROOM/AUX BLDG. INDICATION WHICH VERIFY OR PINPOINT TROUBLE	1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM	SETPOINT	SENSING REFERENCE ELEMENT NUMBER & LOCATION	
WASTE TRANSF PUMP 3C AUTO-START FAILURE WP-2-6	1. Alarm actuates when: a) Bleed tank 3C selected on feed select switch (and pulled). b) MUV-103 open and c) Waste transfer pump 3C (WDP-5C) not running. 2. a) Pump run indicating lamps on WD panel. b) MUV-103 indicating lamps in Control Room.	1. a) None. c. a) Check valve lineup, switch position and feed permissive circuit indication for correct positions.		42b RELAY F3 3MUV-103	WD-15
WASTE TRANSF PUMP 3C TRIP WP-2-7	1. a) Pump control switch in NOR-AFT-START position and pump not running. 2. a) Pump motor overload. b) Pump started locally then sel. for feed.	c) None. a) Check for pump motor overload trip conditions. b) Check valve lineup and switch position. c) C. . Control Room to see if pump sel. for feed.		CS/SC+CS/O 42b	WD-15 WD-74
MISC RAD WASTE TRANSF PUMP 3A TRIP WP-2-8	1. a) Pump control switch in NOR-AFT-START position and pump not running. 2. a) Pump run indicating lamps on WD panel.	1. a) None. 2. a) Check valve lineup and determine cause of pump motor overload trip conditions.		CS/SC+CS/O 42b	WD-16