

DOCUMENT TRANSMITTAL FORM 21009
FOR DOCUMENTS TRANSMITTED TO DC DESK (NRC)*

DATE: 15 DEC 1989
BATCH: 108

DOCUMENT NUMBER -----	SHEET NUMBER -----	REVISION NUMBER -----	COPY NUMBER -----
AR 403		12	24

INSTRUCTIONS TO THE ADDRESSEE

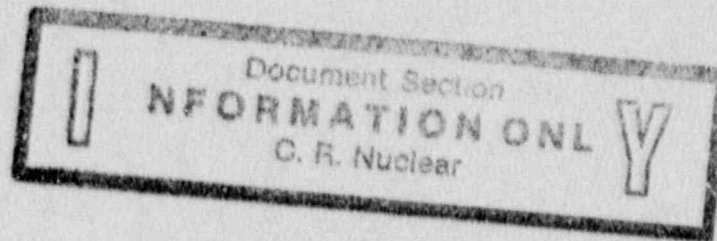
COMPLETE EACH OF THE INSTRUCTIONS BELOW WHICH ARE MARKED WITH AN " X "

- ☒ (1) VERIFY THE DOCUMENTS RECEIVED AGREE WITH THE ABOVE DESCRIPTION
- ☒ (2) INCORPORATE THE TRANSMITTED DOCUMENTS INTO YOUR FILES
- ☒ (3) DESTROY DOCUMENTS OR PORTIONS OF DOCUMENTS SUPERSEDED BY THE ABOVE
- ☒ (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
- ☒ (6) RETURN TO DOCUMENT CONTROL, CRYSTAL RIVER UNIT 3, MAC# NA1C____
NR2A ☒ FLA. POWER CORP., P.O. BOX 219 CRYSTAL RIVER FLA. 32629

SIGNATURE OF ADDRESSEE _____ DATE _____

INDEPENDENT VERIFICATION _____ DATE _____ (OPS)

A045
2/1



ANNUNCIATOR RESPONSE

AR-403

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

PSA H ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall

Date: 12/14/89

INTERPRETATION CONTACT: Nuclear Operation Superintendent

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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

GAMMA RADIATION HIGH H-1-1	1. a) Gamma Hi radiation alarm. b) See annunciator typer and note H-1-1. 2. a) Check rad monitor system as indicated.	1. a) Local alarm sounds. 2. a) Notify Chem/Rad.	SEE RAD MONITOR SETPOINT LOG BOOK	RAD MON PANEL
GAMMA MONITOR WARNING H-1-2	1. a) Gamma monitor indicate instrument failure, or radiation level in excess of warning setpoint. b) See annunciator typer and note H-1-1. 2. a) Check appropriate rad monitor.	1. a) None. 2. a) Notify Instruments and Controls Supervisor. b) Notify Chem/Rad.	SEE RAD MONITOR SETPOINT LOG BOOK	RAD MON PANEL
H-1-3				
H-1-4				
MN STM LINE A/B HIGH RAD MONITOR FAIL H-1-5	1. a) Indicates instrument failure or radiation level in excess of Alarm Setpoint. 2. a) Monitor RMA-12.	1. a) None. 2. a) Check MS Line Monitors. b) Refer to EP-390 (SGTL).		
H-1-6				
DO STOR TANK LEVEL HIGH/LOW H-1-7	1. a) High level in DO storage tank $\geq 97''$ H₂O. b) Low level in DO storage tank. 2. a) None.	1. a) None (tank should auto fill). 2. a) Notify Nuclear Auxiliary Operator if alarm persists.	$\geq 97''$ H ₂ O $\leq 33''$ H ₂ O	DO-4-LS DO-3-LS
H-1-8				

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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 &
ATMOSPHERIC RADIATION HIGH H-2-1	1. a) Atmospheric High radiation alarm. b) See annunciator typer and note H-2-1. 2. a) Check rad mon panel.	1. a) None. 2. a) Refer to AP-250 (RMA).	SEE RAD MONITOR SETPOINT LOG BOOK	RAD MON PANEL
ATMOSPHERIC MONITOR WARNING H-2-2	1. a) Indicates instrument failure, or radiation level in excess of warning setpoint. b) Flow High/Low. See Note H-2-2. c) See annunciator typer and Notes H-2-1 and H-2-2. 2. a) Check rad mon panel.	1. a) None. 2. a) Notify Chemistry and HP	SEE RAD MONITOR SETPOINT LOG BOOK	RAD MON PANEL
H-2-3				
H-2-4				
EDAS SYSTEM TROUBLE H-2-5	1. a) Loss of Multiplexer Power. b) Primary Met. Tower on Back-up Power. c) Primary Met. Tower Back-up Power Out of Sync. d) Primary Met. Tower Signal Failure. e) Primary met. Tower Building Temp High/Low. 2. a) EDAS Alarm Panel.	1. a) None. 2. a) Notify I&C Supervisor.		
SUMP LEVEL HIGH H-2-6	1. a) Aux. Bldg. sump level > 92.5' elevation. b) DH Pit A sump level > 74' elevation. c) DH Pit B sump level > 74' elevation. d) Condensate Pump Pit A sump level > 88.6' elevation. e) Condensate Pump Pit B sump level > 88.6' elevation. f) Nuclear Service Cooler area sump level > 96.5 elevation. g) Tendon Access Gallery sump > 72.5' elevation. 2. a) None.	1. a) None. 2. a) Dispatch personnel to determine source of determine source of flooding. b) Terminate flooding. c) Refer to AP-1050 (Flood).		WD-132-LS WD-133-LS WD-134-LS SD-31-LS SD-32-LS SD-5-LS3 SD-6-LS3

SEMI-INDICATOR PANEL LOCATION PSA-Z

ANNUNCIATOR PANEL H

VERTICAL COLUMN 2

1. INDICATED CONDITION
2. CONTROL ROOM INDICATION WHICH VERIFY OR
PINPOINT TROUBLE

1. AUTO ACTION
2. OPERATOR ACTION - VALID ALARM

ELEMENT NUMBER & LOCATION	DESCRIPTION	DATE	BY
1	...	...	...
2	...	...	...
3	...	...	...
4	...	...	...
5	...	...	...
6	...	...	...
7	...	...	...
8	...	...	...
9	...	...	...
10	...	...	...
11	...	...	...
12	...	...	...
13	...	...	...
14	...	...	...
15	...	...	...
16	...	...	...
17	...	...	...
18	...	...	...
19	...	...	...
20	...	...	...
21	...	...	...
22	...	...	...
23	...	...	...
24	...	...	...
25	...	...	...
26	...	...	...
27	...	...	...
28	...	...	...
29	...	...	...
30	...	...	...
31	...	...	...
32	...	...	...
33	...	...	...
34	...	...	...
35	...	...	...
36	...	...	...
37	...	...	...
38	...	...	...
39	...	...	...
40	...	...	...
41	...	...	...
42	...	...	...
43	...	...	...
44	...	...	...
45	...	...	...
46	...	...	...
47	...	...	...
48	...	...	...
49	...	...	...
50	...	...	...
51	...	...	...
52	...	...	...
53	...	...	...
54	...	...	...
55	...	...	...
56	...	...	...
57	...	...	...
58	...	...	...
59	...	...	...
60	...	...	...
61	...	...	...
62	...	...	...
63	...	...	...
64	...	...	...
65	...	...	...
66	...	...	...
67	...	...	...
68	...	...	...
69	...	...	...
70	...	...	...
71	...	...	...
72	...	...	...
73	...	...	...
74	...	...	...
75	...	...	...
76	...	...	...
77	...	...	...
78	...	...	...
79	...	...	...
80	...	...	...
81	...	...	...
82	...	...	...
83	...	...	...
84	...	...	...
85	...	...	...
86	...	...	...
87	...	...	...
88	...	...	...
89	...	...	...
90	...	...	...
91	...	...	...
92	...	...	...
93	...	...	...
94	...	...	...
95	...	...	...
96	...	...	...
97	...	...	...
98	...	...	...
99	...	...	...
100	...	...	...

BLDG SUMPS/ SUMP PUMP TROUBLE	1. a) Diesel generator sump level high. b) DH sump level > 74' elevation and pump not running. c) DH sump pump auto start. d) Aux. Bldg. sump pump auto start or pump trip. e) Laundry and shower sump level > 91.5' elevation or pump auto start or pump trip. f) Turbine Building sump level $\geq$ 91.5' elevation or oil/water separator trouble. g) Intake electric vault level $\geq$ 18'. h) Sewage pit level high. i) Waste Gas Comp Seal Leak DR TK Low Level 2. a) None.	1. a) Sump pump auto start. 2. a) Investigate cause of level increase. b) Return sump to normal level. c) Notify Aux Bldg Operator d) Check oil/water separator	SD-24-LS2 WD-302-LS2
H-2-7			
SEC SAMPLE SYSTEM ALARM	1. a) Alarm on secondary sample panel that has not been acknowledged within the timer setting. b) Hotwell condensate conductivity high. 2. a) Condensate conductivity recorder.	1. a) None. 2. a) Notify Chemistry. b) Refer to CP-138	SS-071-CIR

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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

LIQUID RADIATION HIGH H-3-1	1. a) Liquid Hi rad. b) See annunciator typer and note H-3-1. 2. a) Check liquid alarm monitors.	1. a) If RML-2 hi rad alarm WDV-891 closes and WDV-892 closes. 2. a) Notify Assistant Nuclear Operator and Chem/Rad. b) Determine source of contamination and isolate. c) Refer to AP-250 (RMA).		RAD MON PANEL
LIQUID MONITOR WARNING H-3-2	1. a) Indicates instrument failure, or radiation level in excess of warning setpoint. b) See annunciator typer and Note H-3-1. 2. a) Check liquid alarm monitor.	1. a) None. 2. a) Notify Instruments and Controls Supervisor and Chem Rad. b) Determine source of contamination and isolate.		RAD MON PANEL
RM-L2/7 INTERLOCK BYPASSED H-3-3 H-3-4	1. a) Defeat interlock between valve SDV-90 and RWP-3A & 3B. (Interlock does not allow opening of SDV-90 while RWP-3A & 3B are not in operation.) b) Defeat interlock between valve WDV-892 and RWP-2A & 2B. 2. a) None.	1. a) Allows opening of SDV-90 with RWP-2A & 2B running and RWP-3A & 3B idle. b) Allows opening of WDV-892 with RWP-3A or 3B running and RWP-2A & 2B idle. 2. a) None.		KEYLOCK SWITCH
FLUSH WATER SYSTEM PRESS LOW H-3-5	1. a) Decreasing header press at 75 psig. 2. a) None (loss of pump).	1. a) None. 2. a) Start flush water pump or b) Start RWP-2A or RWP-2B.	≤ 75 psig	DO-2-PS TD-LFP
FLUSH WATER PUMP AUTO STOP H-3-6	1. a) Control switch in normal after start and brk open. 2. a) Brk indicates open.	1. a) None. 2. a) Start standby pump.		CS/SC CS/O
FLUSH WATER PUMP AUTO START H-3-7	1. a) Control switch in normal after stop and brk closed. 2. a) Brk indicates closed.	1. a) None. 2. a) Match target. b) Determine cause of low pressure.		CS/SC CS/O
SW SYSTEM SUPPLYING FLUSH WATER H-3-8	1. a) DOV-238 or DOV-210 open. 2. a) DOV-238 or DOV-210 indicates open.	1. a) None. 2. a) Monitor SW Surge Tank level.		

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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
MAKEUP TANK LEVEL LOW-LOW H-4-1	1. a) Lo-Lo level $\leq 18"$. 2. a) Makeup tank level.	1. a) MUV-58 and MUV-73 open. 2. a) Restore normal level.	$\leq 18" \text{ H}_2\text{O}$	
MAKEUP TANK LEVEL HIGH/LOW H-4-2	1. a) Hi level $\geq 86"$. b) Low level $\leq 55"$. 2. a) Makeup tank level.	1. a) None. 2. a) Monitor closely and restore normal level.	$< 55" \text{ H}_2\text{O}$ $\geq 86" \text{ H}_2\text{O}$	MU-14-LS1
MAKEUP FLOW HIGH H-4-3	1. a) > 160 GPM through MUV-31 (or bypass). 2. a) Indicated makeup flow > 160 GPM.	1. a) None. 2. a) If high flow continues refer to AP-380 (ESA) or EP-390 (SGTL).	MU-60 MU-47	MU-24-FS
LETDOWN TEMP HIGH H-4-4	1. a) Inlet to prefilters $\geq 130^\circ\text{F}$. 2. a) Monitor letdown temp.	1. a) None. 2. a) If temperature continues to increase reduce flow or increase cooling water.	$\geq 130^\circ\text{F}$	MU-5-TS
RC PUMP SEAL BLEED OFF HIGH H-4-5	1. a) RCP-A control bleed off ≥ 1.75 gpm.* b) RCP-B control bleed off ≥ 1.75 gpm.* c) RCP-C control bleed off ≥ 1.75 gpm.* d) RCP-D control bleed off ≥ 1.75 gpm.* 2. a) None.	1. a) None. 2. a) Re-establish bleed off.	≥ 1.75 ≥ 1.75 ≥ 1.75 > 1.75	MU-31-FS1 MU-31-FS2 MU-31-FS3 MU-31-FS4
MAKEUP TANK PRESS HIGH/LOW H-4-6	1. a) Hi press ≥ 15 psig. b) Lo press ≤ 3 psig. 2. a) MU tank press/level.	1. a) None. 2. a) Add Hydrogen as necessary.	≥ 15 psig ≤ 3 psig	MU-17-PS
RC PUMP SEAL RTN (MUV-253) NOT FULL OPEN H-4-7	1. a) MUV-253 less than full open. 2. a) MUV-253 limit switch lights.	1. a) None. 2. a) Reopen MUV-253.		Relay AF-3MUV- 2530
MAKEUP VALVES AIR FAILURE H-4-8	1. a) Control air tank MUV-51, 31, 16 & 253 low press. 2. a) Air fail back lite pushbutton for associated valve is illuminated.	1. a) Valve(s) lock as is. 2. a) To operate valve until air pressure restored, depress air fail pushbutton.		RELAY RACK

*These points have been disabled by TMAR-89-06-14-01

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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

STM GEN A MAIN STEAM ISO ACTUATED H-5-1	1. a) EFIC CH. A or CH. B Main Steam Isolation Actuation. b) Half trip on EFIC CH A or CH B.	1. a) MSIV on affected DTSG closes. 2. a) Refer to AP-460 (SGIA). b) Notify I&C of EFIC half trip (Refer to SP-146).		
STM GEN A FEEDWATER ISO ACTUATED H-5-2	1. a) EFIC CH. A or CH. B Main Feed Isolation Actuation. b) Half trip on EFIC CH A or CH B.	1. a) Main FW Block valve closes. b) LO Load FW Block valve closes. c) SU Block valve closes. d) FWP Suction valve closes. 2. a) Refer to AP-460 (SGIA). b) Notify I&C of EFIC half trip (Refer to SP-146).		
MAIN STEAM ISO VLV AIR FAILURE H-5-3	1. a) Air supply pressure low for MSV-411, MSV-412. b) Air supply pressure low for MSV-413, MSV-414. 2. a) Instrument air pressure.	1. a) Possible closure of 2 MSIV's. 2. a) IF 2 MSIV's close, <u>THEN</u> trip reactor. b) IF reactor tripped, <u>THEN</u> refer to AP-580 (RT).	< 80 psig	MS-98-PS MS-99-PS
LETDOWN PRESS HIGH H-5-4	1. a) Outlet of block orifice $\geq$ 145 psig. 1. a) None.	1. a) None. 2. a) IF alarm does not clear, <u>THEN</u> shut MUV-49. b) Determine cause of Hi press before reopening MUV-49.	$\geq$ 145 psig	MU-6-PS
MAKEUP FILTERS Δ PRESS HIGH H-5-5	1. a) Makeup Postfilter DP $\geq$ 25 psid. b) Makeup Prefilters DP $\geq$ 12 psid. 2. a) Control Board Indication.	1. a) None. 2. a) Shift to clean filter if available. b) If not reduce letdown flow.	$\geq$ 25 psid $\geq$ 12 psid	MU-18-DPS MU-81-PS
MAKEUP DEMIN Δ PRESS HIGH H-5-6	1. a) DP $\geq$ 14 psid. 2. a) Indication $\geq$ 14 psid.	1. a) None. 2. a) Shift to standby demin or bypass. (Reducing letdown flow will lower DP).	$\geq$ 14 psid	MU-75-PS
RC PUMP SEAL FLOWS HIGH/LOW H-5-7	1. a) Total seal flow high/low. b) RCP-A seal flow low. c) RCP-B seal flow low. d) RCP-C seal flow low. e) RCP-D seal flow low. 2. a) Indicated seal flow low.	1. a) None. 2. a) Re-establish normal seal flow as soon as cause is found. Refer to OP-302.	$\geq$ 42 gpm $\leq$ 22 gpm $\leq$ 3 gpm $\leq$ 3 gpm $\leq$ 3 gpm $\leq$ 3 gpm	MU-27-FS MU-7-FS1 MU-7-FS2 MU-7-FS3 MU-7-FS4
BWST VLV INTERLOCK BYPASS H-5-8	1. a) MUT Low Low Level interlock defeat. 2. a) None.	1. a) No automatic line up of suction flow path for running makeup pump or Low MUT level. 2. a) If switch not indicated by operators, then investigate cause of switch misposition.		In 'B' RSP Cab.

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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

STM GEN B MAIN STEAM ISO ACTUATED H-6-1	1. a) EFIC CH. A or CH. B Main Steam Isolation Actuation. b) Half trip on EFIC CH A or CH B.	1. a) MSIV on affected OTSG closes. 2. a) Refer to AP-460 (SGIA). b) Notify I&C of EFIC half trip (Refer to SP-146).		
STM GEN B FEEDWATER ISO ACTUATED H-6-2	1. a) EFIC CH. A or CH. B Main Feed Isolation Actuation. b) Half trip on EFIC CH A or CH B.	1. a) Main FW Block valve closes. b) LO Load FW Block valve closes. c) SU Block valve closes. d) FWP Suction valve closes. 2. a) Refer to AP-450 (SGIA). b) Notify I&C of EFIC half trip (Refer to SP-146).		
EMERG FW ACTUATION H-6-3	1. a) EFIC CH A or CH B EFW Actuation. b) Half trip on EFIC CH A or CH B.	1. a) EFP-1 and 2 Start EFV-55, 56, 57, 58 Control OTSG Level. 2. a) Refer to AP-450 (EFA). b) Notify I&C of EFIC half trip (Refer to SP-146).		
H-6-4				
H-6-5				
EFIC BYPASS H-6-6	1. a) EFIC CH. A, B, C or D in Maintenance Bypass. b) RPS Ch. A, B, C or D in Ch. Bypass. c) Any EFIC Test Switch in other than normal position.	1. a) Bypass of other EFIC or RPS channels IS blocked. 2. a) Return Bypass switches to normal position when not testing.		
EFIC SHUTDOWN BYPASS H-6-7	1. a) EFIC CH. A or B, or CH. C or D Main Steam Isolation Actuation Bypassed. 2. a) None.	1. a) Low Pressure Isolation of OTSG's IS blocked. 2. a) Reset channel when OTSG pressure > 600 psi and increasing.		
EFIC AH SYSTEM TROUBLE H-6-8	1. a) AHF-54A or 54B Low Flow - control switch in Norm after start. b) EFIC Room Temp High/Low. c) EFIC Room AHF 54A or 54B Duct temp high. d) EFIC Room AHF 54A or 54B smoke.	1. a) None. 2. a) Investigate.	70% of design flow ≥ 85°F ≤ 65°F	

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL 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

EF TANK LEVEL LOW-LOW H-7-1	1. a) EF tank level $\leq$ 8'8" (39,900 gal). 2. a) EF tank level indication.	1. a) None. 2. a) Refer to AP-450 (EFA).	8'8"	
EF PUMP 1 AUTO START H-7-2	1. a) Control switch in "Normal After Stop" and auto start signal present. 2. a) Red indicating light on control switch. b) Flow indication on emergency flow meters.	1. a) Pump start on loss of both main FW pumps. b) Pump start on low level of both OTSG's. 2. a) Verify pump start.		
EF PUMP 1 START FAILURE H-7-3	1. a) Alarms when EFP breaker is open with breaker racked in and control switch is in the "Normal After Start" position. b) Switch in "Normal After Start" with discharge pressure $<$ 1100 psig. 2. a) Flow indication. b) EFP-1 control switch lights.	1. a) None. 2. a) Verify that turbine-driven EFW pump is running. b) Attempt to start pump manually. c) Have Operator check breaker at ES bus.		
EF PUMP 1 TRIP H-7-4	1. a) Control switch in normal after start and brk open. 2. a) Pump brk indicates open.	1. a) None. 2. a) If required start steam driven pump.		SWITCHGEAR
EF PUMP 1 OUT OF SERVICE H-7-5	1. a) Loss of DC control power, brk not fully racked in. 2. a) Control switch indicating lites not on.	1. a) None. 2. a) Rack in breaker. b) Close DC knife switch.		SWITCHGEAR
EF PUMP 1 MOTOR OVERLOAD H-7-6	1. a) Motor overcurrent. 2. a) Motor brk open.	1. a) Pump brk trips. 2. a) If required, start steam driven pump. b) Place control switch in normal after stop. c) Notify Electrical Supervisor.		SWITCHGEAR
H-7-7				
H-7-8				

ANNUNCIATOR PANEL LOCATION PSA-ZANNUNCIATOR PANEL HVERTICAL COLUMN 8

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

EF TANK LEVEL HIGH/LOW H-8-1	1. a) EF tank level high $\geq 37'2"$ (174,600 gal). b) EF tank level low $\leq 34'7"$ (160,800 gal). 2. a) EF tank level indication.	1. a) None. 2. a) Check for proper nitrogen overpressure. b) Check for proper valve line up. c) Fill/drain tank.	37'2" 34'7"	
EF PUMP 2 AUTO START H-8-2	1. a) ASV-5 in "Auto" and 50 seconds after auto start signal with discharge pressure > 1100 psig. b) ASV-204 in "Auto" and 50 seconds after auto start signal with discharge pressure > 1100 psig. 2. a) Flow indication.	1. a) Auto start on loss of both main FWP's. b) Auto start on both OTSG low levels. 2. a) Verify pump start.		
EF PUMP 2 START FAILURE H-8-3	1. a) ASV-5 in "Auto" and 50 seconds after auto start signal with discharge pressure < 1100 psig. b) ASV-204 in "Auto" and 50 seconds after auto start signal with discharge pressure < 1100 psig. 2. a) Flow indication.	1. a) None. 2. a) Check ASV-5 for full open and OTSG pressure.		
EF PUMP 2 TRIP H-8-4	1. a) ASV-50 closed. 2. a) ASV-50 indicates closed.	1. a) None. 2. a) Notify NAO to relatch and open ASV-50.		ASV-50
EF PUMP 2 OUT OF SERVICE H-8-5	1. a) MSV-55 or 56 fully closed. b) ASV-5 or ASV-204 fully closed and auto open signal present for 5 seconds. 2. a) MSV-55 and MSV-56 position lights. b) ASV-5 and ASV-204 position lights.	1. a) None. 2. a) Insure valve lineup is normal for present operating condition.		
EMERG FW VALVE NOT FULL OPEN H-8-6	1. a) EFV-3, 4, 7, 8, 11, 14, 32, or 33 not fully open. 2. a) Valves position indication.	1. a) None. 2. a) IF valves required open and will not open, <u>THEN</u> open manually <u>AND</u> initiate a work request.		
H-8-7				
H-8-8				

ANNUNCIATOR
PANEL
LOCATION

NOTES

H-1-1 1. Any one or more of the following monitors:

- a) RM-G1
- b) RM-G2
- c) RM-G3
- d) RM-G4
- e) RM-G5
- f) RM-G6
- g) RM-G7
- h) RM-G8
- i) RM-G9
- j) RM-G10
- k) RM-G11
- l) RM-G12
- m) RM-G13
- n) RM-G14
- o) RM-G15
- p) RM-G16
- q) RM-G17
- r) RM-G18

H-2-1 1. Any one or more of the following monitors:

- a) RM-A1 (PART)
- b) RM-A1 (GAS)
- c) RM-A1 (IODINE)
- d) RM-A2 (PART)
- e) RM-A2 (GAS)
- f) RM-A2 (IODINE)
- g) RM-A3 (GAS)
- h) RM-A4 (GAS)
- i) RM-A5 (GAS)
- j) RM-A5 (IODINE)
- k) RM-A6 (GAS)
- l) RM-A6 (IODINE)
- m) RM-A7 (GAS)
- n) RM-A8 (GAS)
- o) RM-A11 (GAS)
- p) RM-A12 (GAS)
- q) RM-A13 (GAS)
- r) RM-A14 (GAS)
- s) RM-A15 (GAS)

ANNUNCIATOR
PANEL
LOCATION

NOTES

H-2-2 Air flow to one or more of the following above normal or ≤ 5
SCFM:

- a) RM-A1
- b) RM-A2
- c) RM-A3
- d) RM-A4
- e) RM-A5
- f) RM-A6
- g) RM-A7
- h) RM-A8
- i) RM-A14
- j) RM-A15

H-3-1 1. Any one or more of the following monitors:

- a) RM-L1
- b) RM-L2
- c) RM-L3
- d) RM-L5
- e) RM-L6
- f) RM-L7

(LAST PAGE)