

DOCUMENT TRANSMITTAL FORM 22770
FOR DOCUMENTS TRANSMITTED TO DC DESK (NRC)*

DATE: 15 JAN 1990
BATCH: 140

50-302

DOCUMENT NUMBER SHEET NUMBER REVISION NUMBER COPY NUMBER

AR 602

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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- ☒ (3) DESTROY DOCUMENTS OR PORTIONS OF DOCUMENTS SUPERSEDED BY THE ABOVE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~~X~~ FLA. POWER CORP., P.O. BOX 219 CRYSTAL RIVER FLA. 32629

SIGNATURE OF ADDRESSEE

DATE

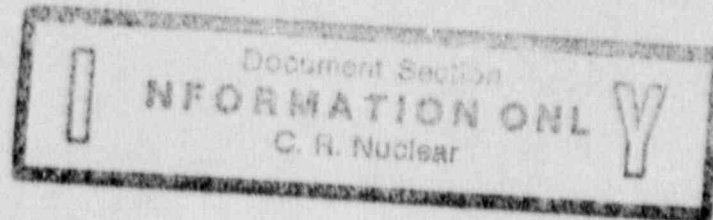
INDEPENDENT VERIFICATION

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ANNUNCIATOR RESPONSE

AR-602

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

TGF N ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall
Date 1/13/90

INTERPRETATION CONTACT: Nuclear Operations Superintendent

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 8

N-1-1				
CONDENSER VAC PUMP TRIP	<ol style="list-style-type: none"> 1. a) Condenser vacuum pump A or B breaker open and control switch in normal after start. 2. a) Condenser vacuum pump A or B breaker indication. 	<ol style="list-style-type: none"> 1. a) Standby pump starts at 26" Hg condenser vacuum decreasing. 2. a) Ensure standby vacuum pump starts. b) Monitor condenser vacuum. c) Maintain: <ul style="list-style-type: none"> o Hotwell temp 130 < F o Exhaust hood temp < 165°F 	26" Hg	SWITCHGEAR
N-1-2				
CONDENSER VAC PUMP TROUBLE	<ol style="list-style-type: none"> i. a) Condenser vacuum pump A or B breaker closed and control switch in Normal After Start. b) Thermal overload on condenser vacuum pump A or B. c) Thermal overload on condenser vacuum seal pump A or B. 2. e) Pump breaker indication. 	<ol style="list-style-type: none"> 1. a) Standby vacuum pump starts at 26" Hg condenser vacuum decreasing. 2. a) IF HP Turbine steam seal pressure is Low AND GSV-63, gland steam dump regulator, is open, THEN throttle GSV-62, steam dump regulator inlet. b) IF LP Turbine steam pressure is Low, THEN open: <div style="display: flex; justify-content: space-around;"> <div>LPT-3A GSV-34 GSV-40</div> <div>LPT-3B GSV-26 GSV-61</div> </div> c) Start standby vacuum pump if not running. d) If seal pump trips, ensure associated vacuum pump is not running. 	26" Hg	SWITCHGEAR
N-1-3				
N-1-4				
HOTWELL LEVEL HIGH/LOW	<ol style="list-style-type: none"> 1. a) Hotwell A or B level $\geq 103' 8 \frac{1}{2}"$. (8' 8 1/2") b) Hotwell A or B level $\leq 103' 2 \frac{1}{2}"$. (8' 2 1/2") 2. a) Hotwell level indication. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Drastic changes in hotwell level are the result of abnormal changes in plant conditions or the result of a failure in the hotwell level control system. Both should be corrected if they occur. 	103'8 1/2" (8'8 1/2") 103'2 1/2" (8'2 1/2") 103'8 1/2" (8'8 1/2") 103'2 1/2" (8'2 1/2")	CD-1-LS CD-2-LS CD-3-LS CD-4-LS
N-1-5				

ANNUNCIATOR PANEL LOCATION T5F-AX2 _____ VERTICAL COLUMN _____ 1
 ANNUNCIATOR PANEL _____ N _____
 WINDOW TITLE 1. INDICATED CONDITION 1. AUTO ACTION
 2. CONTROL ROOM INDICATION WHICH VERIFY OR 2. OPERATOR ACTION - VALID ALARM
 PINPOINT TROUBLE

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
N-1-6				
N-1-7				
COND DEMIN PANEL TROUBLE	1. a) Any drop target alarm on condensate demineralizer regeneration panel that has not been acknowledged. 2. a) None.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator. b) Refer to AR-971.		
N-1-8				
CONSR CNTRL AIR PRESS LOW	1. a) Condensate demineralizer instrument air pressure \leq 80 psig. 2. a) Instrument air pressure indication.	1. a) None. 2. a) Start standby instrument air compressor if not running.	80 psig	AR-19-PS AR-26-PS
N-1-9				
N-1-10				

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

CDSTE PUMP A TRIP N-2-1	<ol style="list-style-type: none"> 1. a) Condensate Pump A breaker open and control switch in Normal After Start. 2. a) Deaerator level $\geq 13' 6 \frac{1}{2}"$. b) Condensate Pump A breaker indication. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Take manual control of pump. Restart and recouple when cause of problem is corrected. 	13'6 1/2"	SWITCHGEAR
CDSTE PUMP A UNCOUPLED N-2-2	<ol style="list-style-type: none"> 1. a) Normal or emergency magnetic coupling, whichever selected, is de-energized. 2. a) Zero condensate pump discharge pressure. b) No condensate flow if this is the only condensate pump running. c) Low condensate pump motor amps. 	<ol style="list-style-type: none"> 1. a) None. 2. a) If not a result of operator action, select alternate coupling to keep pump in operation. 		SWITCHGEAR
CDSTE PUMP MOTOR OVERLOAD N-2-3	<ol style="list-style-type: none"> 1. a) Condensate Pump Motor A or B $\geq 115\%$ rated power. 2. a) Motor amp indication. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Reduce flow thru pump. 	115%	SWITCHGEAR
N-2-4				
CDV 100 OPEN N-2-5	<ol style="list-style-type: none"> 1. a) CDV-100 not fully closed. 2. a) Low hotwell level. 	<ol style="list-style-type: none"> 1. a) None. 2. a) This indicates that hotwell level is decreasing at a rate not within capabilities of normal makeup. Verify hotwell levels and establish make-up if necessary. 		

CDSTE	1. a) Tank level ≥ 31 feet. b) Tank level ≤ 24 feet. 2. a) CDSTE tank level instrumentation.	1. a) None. 2. a) Fill or drain tank as necessary to return to normal level.	31" 24"	CD-58-LS CD-59-LS
STOR TANK LEVEL HIGH/LOW				
N-2-6				
N-2-7				
N-2-8				
N-2-9				
N-2-10				

ANNUNCIATOR PANEL LOCATION TGF-ANZ _____ ANNUNCIATOR PANEL _____ N _____ 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

SENSING ELEMENT NUMBER & LOCATION

COSTE PUMP B TRIP	1. a) Condensate Pump B breaker open and control switch in Normal After Start. 2. a) Deaerator level > 13' 6 1/2". b) Condensate Pump B breaker indication.	1. a) None. 2. a) Take manual control of pump. Restart and recouple when cause of problem is corrected.	13' 6 1/2"	SWITCHGEAR
N-3-1				
COSTE PUMP B UNCOUPLED	1. a) Normal or emergency magnetic coupling, whichever selected, is de-energized. 2. a) Zero condensate pump discharge pressure. b) No condensate flow if this is the only condensate pump running. c) Low condensate pump motor amps.	1. a) None. 2. a) If not a result of operator action, select alternate coupling to keep pump in operation.		SWITCHGEAR
N-3-2				
N-3-3				
N-3-4				
N-3-5				

ANNUNCIATOR PANEL LOCATION 1GF-AV2ANNUNCIATOR PANEL NVERTICAL COLUMN 3WINDOW TITLE
1. INDICATED CONDITION
2. CONTROL ROOM INDICATION WHICH VERIFY OR
PINPOINT TROUBLE1. AUTO ACTION
2. OPERATOR ACTION - VALID ALARMSETPoint
SENSING
ELEMENT
NUMBER &
LOCATION

N-3-6						
N-3-7						
N-3-8						
N-3-9						
N-3-10						

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

CDSTE HTR 1A/B LEVEL HIGH N-4-1	1. a) Heater 1A or 1B level $\geq 8.3''$ above "NML" 2. a) None.	1. a) HDV-102 or HDV-104 open. 2. a) Monitor level, check for LP heaters 1A/B valves not closed alarm.	8.3" above "NML"	HD-20-LS HD-22-LS
CDSTE HTR 1A/B DUMP VALVES NOT FULL CLOSED N-4-2	1. a) HDV-102 or HDV-104 not fully closed. 2. a) Turbine trip causes valves to open.	1. a) None. 2. a) Monitor heater level. b) Check valve lineup.	8.3" above "NML"	HDV-102 HDV-104
DEAERATOR LEVEL HIGH/LOW N-4-3	1. a) Deaerator level $> 12' 9 \frac{1}{2}''$ b) Deaerator level $< 7' 0''$. 2. a) Deaerator level indication.	1. a) HDV-53 and HDV-54 closes at $13' 2 \frac{1}{2}''$ increasing. b) HDV-83 opens at $13' 3 \frac{9}{16}''$ increasing. c) The condensate pumps trip at $13' 6 \frac{1}{2}''$ increasing. 2. a) Increase, decrease or recirc condensate flow as necessary to maintain proper deaerator level.	$12' 9 \frac{1}{2}''$ $7' 0''$	FW-4-LS FW-6-LS
N-4-4				
FW HEATER 3/5/6 LEVEL HIGH N-4-5	1. a) Heater 3A or 3B level $\geq 8.3''$ above "NML" b) Heater 5A or 5B level $\geq 8.3''$ above "NML" c) Heater 6A or 6B level $\geq 8.3''$ above "NML" 2. a) None.	1. a) HDV-123 or HDV-124 open. b) HDV-55 or HDV-56 open. c) HDV-63 or HDV-64 open. 2. a) Monitor level, check for LP heaters valves not closed alarm.	8.3" above "NML" 8.3" above "NML" 8.3" above "NML"	HD-28-LS HD-30-LS HD-69-LS HD-70-LS HD-71-LS HD-72-LS

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

N-4-6				
REHEATER SHELL LEVEL HIGH N-4-7	<ol style="list-style-type: none"> 1. a) Reheater Shell A, B, C, D level $\geq 6''$ above "NML". 2. a) None. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Monitor heater level. b) Check valve lineup. 	6" above "NML"	HD-98-LS HD-101-LS HD-104-LS HD-107-LS
RTHR DRN ANG FLASH TANK LVL HIGH N-4-8	<ol style="list-style-type: none"> 1. a) Reheater A, B, C, D HP flash tank level $\geq 4''$ above "NML". b) Reheater A, B, C, D LP flash tank level $\geq 135' 5/8''$. 2. a) None. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Ensure HP dump valves operate at 150'3". 	4" above "NML" 135' 5/8"	HD-43-LS thru HD-50-LS
N-4-9				
N-4-10				

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

CDSTE HTR 2A/B LEVEL HIGH N-5-1	1. a) Heater 2A or 2B level \geq 8.3" above "NML". 2. a) None.	1. a) HDV-113 or HDV-114 open. 2. a) Monitor level, check for LP heaters 2A/B valves not closed alarm.	8.3" above "NML"	HD-24-LS HD-26-LS
CDSTE HTR 2A/B DUMP VALVES NOT FULL CLOSED N-5-2	1. a) HDV-111 or HDV-114 not fully closed. 2. a) Turbine trip causes valves to open.	1. a) None. 2. a) Monitor heater level. b) Check valve lineup.	8.3" above "NML"	HDV-111 HDV-114
DEAERATOR LEVEL HIGH/HIGH N-5-3	1. a) HDV-83 not full closed. 2. a) Deaerator level indication.	1. a) Dump valve HDV-83 opens. 2. a) Reduce CD flow. b) Monitor deaerator level.	13" 3 9/16"	HDV-83
N-5-4				
FW HEATER 3/5/6 LEVEL LOW N-5-5	1. a) Heater 3A or 3B level \leq 1 1/2" below "NML". b) Heater 5A or 5B level \leq 2 1/2" below "NML". c) Heater 6A or 6B level \leq 2" below "NML". 2. a) None.	1. a) None. 2. a) Check heater valves not closed alarm.	1 1/2" below "NML" 2 1/2" below "NML" 2" below "NML"	HD-175-LS thru HD-180-LS

ANNUNCIATOR PANEL LOCATION TGF-AX2 ANNUNCIATOR PANEL N 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

N-5-6	MS VLV TO AS/DEATR NOT FULL OPEN	1. a) MSV-179 or MSV-180 not full open. 2. a) Position indication MSV-180 or MSV-179.	1. a) None. 2. a) Open valves if plant condition require.			WHI. CAB
N-5-7						
N-5-8						
N-5-9						
N-5-10						

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

EH FLUID PUMP TRIP N-6-1	<ol style="list-style-type: none"> 1. a) EH Pump A or B breaker open and control switch in Normal After Start. 2. a) Breaker position indication. 	<ol style="list-style-type: none"> 1. a) None. 2. a) Reset EH pump lockout relay. b) Place standby pump in run if not running. 		SWITCHGEAR
EH FLUID SUPPLY PRESS LOW N-6-2	<ol style="list-style-type: none"> 1. a) EH Fluid supply press \leq 1600 psig. 2. a) None. 	<ol style="list-style-type: none"> 1. a) EH pump auto start at 1350 psig. 2. a) Place standby pump in service. b) Notify Nuclear Auxiliary Operator. 	1600 psig	TB-243-PS
EH FLUID TANK LEVEL LOW N-6-3	<ol style="list-style-type: none"> 1. a) EH fluid tank level \leq 17 1/4". b) EH fluid tank level \leq 11 5/8". c) EH fluid tank level \leq 7 5/8". 2. a) EH fluid pump trip \leq 7 5/8". 	<ol style="list-style-type: none"> 1. a) EH pumps trip at 7 5/8". 2. a) Notify Nuclear Auxiliary Operator to restore tank level. b) Reset EH pump lockout relay. 	17 1/4" 11 5/8" 7 5/8"	TB-236-LS TB-235-LS 86 LFT
TURB EHC ON MANUAL N-6-4	<ol style="list-style-type: none"> 1. a) EHC system not in normal automatic control mode. 2. a) Turbine control panel indication. b) > 50 PSI header pressure error. 	<ol style="list-style-type: none"> 1. a) ICS cannot control turbine. 2. a) Return unit to full ICS auto control. 		
EH FLUID PUMP AUTO START N-6-5	<ol style="list-style-type: none"> 1. a) EH Pump A or B breaker closed and control switch in Normal After Start. 2. a) Breaker position indication. b) EH fluid pressure \leq 1350 psig. 	<ol style="list-style-type: none"> 1. a) EH pump auto starts at 1350 psig. 2. a) Notify Nuclear Auxiliary Operator if cause of auto start not apparent. 	1350 psig	SWITCHGEAR TB-242-PS

WINDOW TITLE 1. INDICATED CONDITION 2. CONTROL ROOM INDICATION WHICH VERIFY OR PINPOINT TROUBLE 1. AUTO ACTION 2. OPERATOR ACTION - VALID ALARM SENSING ELEMENT NUMBER & LOCATION

EH FLUID SYSTEM TROUBLE	1. a) EH fluid tank level $\geq 22"$ b) EA fluid supply press ≥ 2200 psig c) EH fluid drain fluid return press $30 \geq$ psig d) EH fluid filter A or B ≥ 100 psid 2. a) None.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator. b) Check for clogged filters or dirty cooler. c) Shift to standby EH pump and filter.	22" 2200 psig 30 psig 100 psid	TB-235-LS TB-239-PS TB-237-PS TB-231-PS TB-232-PS
N-6-6				
N-6-7				
N-6-8				
N-6-9				
N-6-10				