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AR 603		05	24

INSTRUCTIONS TO THE ADDRESSEE

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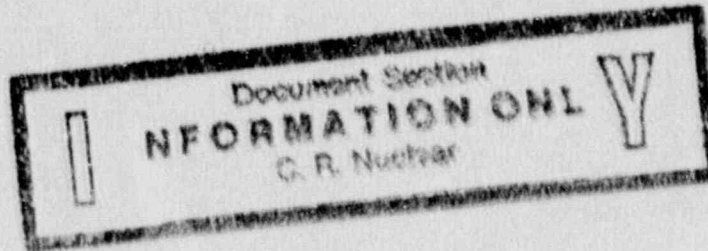
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NR2A X FLA. POWER CORP., P.O. BOX 219 CRYSTAL RIVER FLA. 32629

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ANNUNCIATOR RESPONSE

AR-603

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

TGF 0 ANNUNCIATOR RESPONSE

THIS PROCEDURE ADDRESSES SAFETY RELATED COMPONENTS

APPROVED BY: Interpretation Contact

W. Marshall

DATE:

6/14/90

INTERPRETATION CONTACT: Nuclear Operations Superintendent

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL COLUMN 1

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

TURB GEN BRG OIL PUMP TRIP 0-1-1	1. a) Brk for TG Brg Pump open with control switch in normal after stop. 2. a) Pump breaker indication.	1. a) DC Emergency oil pump starts. 2. a) Ensure DC emergency oil pump starts. b) Start HP seal oil backup pump; check main lube oil system.		SWITCHGEAR
0-1-2				
0-1-3				
TURB GEN BRG OIL PUMP AUTO START 0-1-4	1. a) Brk closed with control switch in Normal after stop. 2. a) Pump breaker indication.	1. a) Auto Starts at Lo Lube Oil Press $\leq$ 12 psig. 2. a) Place control switch for applicable pump in Normal after start. b) Check main lube oil pressure.	12 psig	SWITCHGEAR
HP SEAL OIL BACKUP PUMP TRIP 0-1-5	1. a) Brk open with control switch in Normal after start. 2. a) Pump breaker indication.	1. a) None. 2. a) Ensure either AC or DC Brg Lube Oil Pumps running.		SWITCHGEAR
HP SEAL OIL BACKUP PUMP AUTO START 0-1-6	1. a) Brk closed with control switch in Normal after stop. 2. a) Pump breaker indication.	1. a) Auto Starts $\leq$ 10 psig. 2. a) Check Brg. Oil pumps running. b) Check main lube oil pressure.	10 psig	SWITCHGEAR
TURB GEN LUBE OIL SYS TROUBLE 0-1-7	1. a) Any one of eight lube oil alarms. See Note 0-1-7. 2. a) None.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator.		
0-1-8				



ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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 &  
ELEMENT

GLAND STEAM DRN TANK LEVEL LOW  0-1-9	<ol style="list-style-type: none"> <li>1. a) Gland steam drain tank level <math>\leq</math> 29 in (Dump vlv to cond not shut).</li> <li>2. a) Decreasing condenser vacuum.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Solenoid dump valve shuts.</li> <li>2. a) If alarm persists, notify Nuclear Aux Operator.</li> </ol>	29 IN	TD-3-LS
GLAND STEAM SYSTEM TROUBLE  0-1-10	<ol style="list-style-type: none"> <li>1. a) GS exhaustor A or B breaker open and control switch in normal after start.</li> <li>b) GS exhaustor pressure <math>\geq</math> 10" H<sub>2</sub>O.</li> <li>c) Hi pressure turbine gland steam pressure &gt; 6.1 psig.</li> <li>d) Governor end #1 LP turbine GS pressure low &lt; 0.5 psig.</li> <li>e) Generator end #1 LP turbine GS pressure low &lt; 0.5 psig.</li> <li>f) Governor end #1 LP turbine GS pressure low &lt; 0.5 psig.</li> <li>g) Generator end #1 LP turbine GS pressure low &lt; 0.5 psig.</li> <li>2. a) Low GC pressure; condenser vacuum decreasing.</li> <li>b) Gland steam exhaustor breaker indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Start standby gland steam exhaustor.</li> <li>b) Check local pressure regulators and bypass with manual valves if necessary.</li> </ol>	6.1 psig 0.5 psig 0.5 psig 0.5 psig 0.5 psig 10" H <sub>2</sub> O	GS-6-PS GS-28-PS GS-29-PS GS-32-PS GS-34-PS GS-1-PS  SWITCHGEAR

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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
TURB GEN LIFT OIL PUMP TRIP  0-2-1	1. a) Breaker open and control switch in normal after start. (Trips at brg press $\leq$ 3 psig) 2. a) Breaker indication.	1. a) None. 2. a) If turbine RPM less than 600, attempt to restart pump.	3 psig 600 RPM	SWITCHGEAR
TURB GEN LIFT OIL PRESS LOW  0-2-2	1. a) Lift press $\leq$ 850 psig. 2. a) None.	1. a) None. 2. a) Do not roll turbine until alarm clears. b) Notify Nuclear Auxiliary Operator.	850 psig	TB-331-PS
TURB GEN OIL PRESS PRETRIP  0-2-3	1. a) Turbine Brg press $\leq$ 6 psig. 2. a) Check main lube oil pressure.	1. a) Turbine trip. 2. a) Refer to AP-660 (TT).	6 psig	TB-267-PS
TURB GEN EMERG BRG PP OVERLOAD  0-2-4	1. a) Thermal overload on pump. 2. a) Breaker indication.	1. a) Pump trips. 2. a) If turbine rolling, start AC lube oil pump. b) Check main lube oil pressure.		SWITCHGEAR
TG LUBE OIL RES LEVEL HIGH/LOW  0-2-5	1. a) Lube oil reservoir $\geq$ 6.9 ft. b) Lube oil reservoir $\leq$ 5.9 ft. 2. a) None.	1. a) None. 2. a) Nuclear Auxiliary Operator.	6.9 ft. 5.9 ft.	TB-248-LS TB-248-LS
TURB GEN BRG OIL PUMP OUT OF SERVICE  0-2-6	1. a) AC or DC bearing oil pumps (TBP-3 or TBP-2) are in the "Pull-to-Lock" position. 2. a) Control Switch Position.	1. a) None. 2. a) Take action as necessary to protect the turbine bearings from loss of lube oil.		
TG LUBE OIL VAPOR EXTRACT TROUBLE  0-2-7	1. a) Vapor press on seal oil $\geq$ 1.3" H <sub>2</sub> O vacuum. b) Vapor press $\geq$ 1.3" H <sub>2</sub> O. 2. a) None.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator.	1.3" H <sub>2</sub> O VAC 1.3" H <sub>2</sub> O	TB-304-PS TB-285-PS
0-2-8				
0-2-9				
0-2-10				

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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

TURB GEN LIFT OIL PUMP TRIP  0-2-1	1. a) Breaker open and control switch in normal after start. (Trips at brg press $\leq$ 3 psig) 2. a) Breaker indication.	1. a) None. 2. a) If turbine RPM less than 600, attempt to restart pump.	3 psig 600 RPM	SWITCHGEAR
TURB GEN LIFT OIL PRESS LOW  0-2-2	1. a) Lift press $\leq$ 850 psig. 2. a) None.	1. a) None. 2. a) Do not roll turbine until alarm clears. b) Notify Nuclear Auxiliary Operator.	850 psig	TB-331-PS
TURB GEN OIL PRESS PRETRIP  0-2-3	1. a) Turbine Brg press $\leq$ 6 psig. 2. a) Check main lube oil pressure.	1. a) Turbine trip. 2. a) Refer to AP-660 (TT).	6 psig	TB-267-PS
TURB GEN EMERG BRG PP OVERLOAD  0-2-4	1. a) Thermal overload on pump. 2. a) Breaker indication.	1. a) Pump trips. 2. a) If turbine rolling, start AC lube oil pump. b) Check main lube oil pressure.		SWITCHGEAR
TG LUBE OIL RESVR LEVEL HIGH/LOW  0-2-5	1. a) Lube oil reservoir $\geq$ 6.9 ft. b) Lube oil reservoir $\leq$ 5.9 ft. 2. a) None.	1. a) None. 2. a) Nuclear Auxiliary Operator.	6.9 ft. 5.9 ft.	TB-248-LS TB-248-LS
TURB GEN BRG OIL PUMP OUT OF SERVICE  0-2-6	1. a) AC or DC bearing oil pumps (TBP-3 or TBP-2) are in the "Pull-to-Lock" position. 2. a) Control Switch Position.	1. a) None. 2. a) Take action as necessary to protect the turbine bearings from loss of lube oil.		
TG LUBE OIL VAPOR EXTRACT TROUBLE  0-2-7	1. a) Vapor press on seal oil $\geq$ 1.3" H <sub>2</sub> O vacuum. b) Vapor press $\geq$ 1.3" H <sub>2</sub> O. 2. a) None.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator.	1.3" H <sub>2</sub> O VAC 1.3" H <sub>2</sub> O	TB-304-PS TS-285-PS
0-2-8				
0-2-9				
0-2-10				



ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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
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MAIN TURB TRIP  0-3-1	1. a) Turbine trip lock out relay actuated. 2. a) Turbine tripped.	1. a) Turbine tripped. 2. a) Refer to AP-660 (TT).		86-TURP-2
TURB VACUUM PRETRIP  0-3-2	1. a) CDSTR vacuum $\leq$ 25" Hg. 2. a) Condenser vacuum indication.	1. a) Backup A.R.P.'s Auto Start. 2. a) Refer to OP-607.	25" Hg	TB-265-PS
TURB THRUST BRG PRETRIP  0-3-3	1. a) Thrust bearing oil pressure $\geq$ 35 psig. 2. a) None.	1. a) Turbine trip. 2. a) Refer to AP-660 (TT).	35 psig	TB-266-PS
TURB THROTTLE PRESS HIGH/LOW  0-3-4	1. a) Turbine throttle pressure $\geq$ 939 psig. b) Turbine throttle pressure $\leq$ 835 psig. 2. a) Turbine header pressure indicator. b) Main steam header pressure indicator.	1. a) None. 2. a) Check pressure setpoint setting. b) Check for instrument failure. c) Switch to alternate pressure transmitter.	935 psig 835 psig	SP-10-PS
0-3-5				
0-3-6				
0-3-7				

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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
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0-3-8				
LOCKOUT RELAY DC POWER LOSS  0-3-9	1. a) One of 20 Lockout Relay has lost DC power. See Note 0-3-9. b) ES Toggle Switch open. 2. a) Lock out relay indication light. b) ES Toggle Switch position.	1. a) None. 2. a) Notify system dispatcher. b) Inform electrical supervisor of condition. c) Check DP-DP 3A fuse #10.	27C/86 CONT 80 LOA6 LOA5 TSX1 LOA1 27C/86 TURB 27C/86 LFT	
0-3-10				



ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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

TURB EXH STM TEMP HIGH 0-4-1	<ol style="list-style-type: none"> <li>1. a) Lp turbine EX temp <math>\geq 175^{\circ}\text{F}</math>. Lp turbine EX temp <math>\geq 250^{\circ}\text{F}</math>.</li> <li>2. a) High hotwell temp.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Start hood sprays if necessary.</li> </ol>	175° 250°F	TB-279-TS TB-280-TS
TURBINE STEAM FLOW LOW 0-4-2	<ol style="list-style-type: none"> <li>1. a) <math>\Delta P</math> between HP turbine inlet and outlet  <math>&lt; 21</math> psid with Breaker 1661 or 1662 closed.</li> <li>2. a) Breaker 1661 or 1662 closed with generator load very low.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Turbine trip in 60 seconds.</li> <li>2. a) Increase Unit Load. b) Open 1661 and 1662 if conditions warrant.</li> </ol>	21 psid 60 sec.	MS-87-OPS 2MS-87-OPS
TURB LIMITED BY VALVE POS 0-4-3	<ol style="list-style-type: none"> <li>1. a) Governor valve position is equal to selected valve position limit.</li> <li>2. a) Indicated valve position. b) Indicated valve position limit.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Valve open travel limited.</li> <li>2. a) Reduce unit load. b) Increase valve position limit.</li> </ol>		EMC CONTACT
0-4-4				
TURB GEN ROTOR VIB HIGH 0-4-5	<ol style="list-style-type: none"> <li>1. a) Rotor vibration on any of the 9 bearings  <math>&gt; 7</math> mils.</li> <li>2. a) Check rotor vibration indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) If at critical speed adjust speed to leave the critical speed area.</li> </ol>	7 mils	PD/VB
TURB GEN ROTOR ECC HIGH 0-4-6	<ol style="list-style-type: none"> <li>1. a) Rotor eccentricity (excessive bowing).</li> <li>2. a) Check rotor eccentricity indications.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Notify nuclear aux operator. b) Inspect turbine, reduce load if necessary.</li> </ol>	3 mils	PD/RX

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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

<p>TURB A EXPANSION TROUBLE</p> <p>0-4-7</p>	<ol style="list-style-type: none"> <li>1. a) Diff expansion on rotors (122 long and 1 and 2 short).</li> <li>2. a) Check differential expansion indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Reduce heatup rate to allow for more equal expansion.</li> </ol>	<p>GEN-SHORT- 1454 mils. LONG-345  mils. GOV-SHORT- 616 mils. LONG-158 mils</p>	<p>PD/DE</p>
<p>TURB ROTOR POSITION TROUBLE</p> <p>0-4-8</p>	<ol style="list-style-type: none"> <li>1. a) Governor end rotor position <math>\geq</math> 25 mils. b) Generator end rotor position <math>\geq</math> 95 mils.</li> <li>2. a) Check rotor position indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Reduce load and determine cause of alarm.</li> </ol>	<p>25mils 95mils</p>	<p>PD/RPCE</p>
<p>TURB GEN SPEED CHANNEL TROUBLE</p> <p>0-4-9</p>	<ol style="list-style-type: none"> <li>1. a) Speed channel failure. b) Speed Reference failure. c) Speed Protection Control failure.</li> <li>2. a) None.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Notify Maintenance.</li> </ol>		<p>EHC CONTACT</p>
<p>TURB AT ZERO SPEED</p> <p>0-4-10</p>	<ol style="list-style-type: none"> <li>1. a) Turbine shaft not turning.</li> <li>2. a) Turbine speed indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Turning gear engages if in auto.</li> <li>2. a) Ensure turning gear engaged.</li> </ol>	<p>SHAFT SPEED ZERO</p>	<p>14/ZSX</p>

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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

TURB AMSAC CHANNEL TRIP  0-5-1	<ol style="list-style-type: none"> <li>1. a) Reactor Power &gt;25% FP and both loop feed-water flows &lt;17% rated flow on AMSAC Channel A or B.</li> <li>2. a) Reactor power indication. b) Main FW flow indication. c) Startup FW flow indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Main turbine trip if both AMSAC channels trip. b) EFIC actuation if both AMSAC channels trip.</li> <li>2. a) If both AMSAC channels trip, refer to AP-450 (EFW).</li> </ol>	25% FP 17% FW Flow	
TURB AMSAC LOW FLUX BYPASS  0-5-2	<ol style="list-style-type: none"> <li>1. a) Reactor power &lt;25% FP.</li> <li>2. a) Reactor power indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) AMSAC channels blocked from tripping.</li> <li>2. a) Verify local cabinet status if reactor power &gt;25%.</li> </ol>	25% FP	ATWAS AMSAC
TURB AMSAC CHANNEL IN TEST  0-5-3	<ol style="list-style-type: none"> <li>1. a) AMSAC Channel A in test. b) AMSAC Channel B in test.</li> <li>2. a) None.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Channel not in test is blocked from tripping.</li> <li>2. a) Verify local cabinet status if testing is not in progress.</li> </ol>		ATWAS AMSAC
0-5-4				
TURB GEN RADIO FREQ SIGNAL HIGH  0-5-5	<ol style="list-style-type: none"> <li>1. a) Abnormal radio frequencies received from main electrical generator.</li> <li>2. a) At RFM cabinet, determine which detector(s) abnormal: L1 L2 L3 EL</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Notify System Engineer to compare with known data to determine operation of unit. b) Refer to OP-701.</li> </ol>		RF Mon Cabinet
TURB GEN CONDITION MON HIGH  0-5-6	<ol style="list-style-type: none"> <li>1. a) High concentration of particles contained within main electrical generator hydrogen gas.</li> <li>2. a) Auto alarm panel.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Auto sequence reset activates.</li> <li>2. a) Notify Chemistry. b) Refer to OP-701.</li> </ol>		
0-5-7				



ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL COLUMN 5

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

GEN AIR SIDE DC SEAL PP OUT OF SERVICE  0-5-8	1. a) Loss of power DC for Gen air side seal oil backup pump TBP-10. 2. a) Breaker position indicating lights out.	1. a) None. 2. a) Notify Auxiliary Operator to restore power. b) Take necessary action to monitor area for hydrogen concentrations.		E.R. CAB TBK-110
HYDROGEN PANEL ALARM  0-5-9	1. a) One of the alarms on generator hydrogen Annunciator Panel. 2. a) H <sub>2</sub> purity and H <sub>2</sub> pressure indicators.	1. a) None. 2. a) Notify Nuclear Auxiliary Operator. b) Refer to AR-921.		M2 PANEL LOCAL
HYDROGEN SUPPLY PRESS LOW  0-5-10	1. a) Hydrogen supply pressure < 80 psig. 2. a) None.	1. a) None. 2. a) Check H <sub>2</sub> bulk tank pressure.	80 psig	HY-81-PS

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL COLUMN 6

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

GENERATOR TRIP  0-6-1	1. a) Generator Trip due to one of 10 conditions. See Note 0-6-1. 2. a) Turbine trip. b) Reactor trip (above 45% FP).	1. a) Trip Breakers 3101, 3102, 3201 and 3202. b) Closed Breakers 3103, 3104, 3203 and 3204. c) Turbine Trip. d) Reactor Trip (above 45% FP). 2. a) Refer to AP-660 (TT). b) Refer to AP-580 (RT).	45% FP	
EXCITER BREAKER TRIP  0-6-2	1. a) Indicates exciter breaker is open. 2. a) Check exciter breaker position.	1. a) None. 2. a) Notify Electrical Supervisor if trip was not a result of operator action.		SWITCHGEAR
GEN VOLT/HERTZ PRETRIP  0-6-3	1. a) Ratio of Volt/Hertz is such that damage could occur in magnetic devices due to saturation of iron cores. 2. a) Unit Voltage indication. b) Unit Frequency indication.	1. a) None. 2. a) Bring voltage and/or frequency into normal ranges.		59/81
GEN UNDER FREQUENCY  0-6-4	1. a) Generator frequency $\leq$ 58.0 Hz. b) Generator frequency $\leq$ 58.5 Hz. c) Generator frequency $\leq$ 59.0 Hz. 2. a) Frequency indication.	1. a) None. 2. a) Inform system dispatcher. b) Restore generator to 60 Hz if possible	58.0 Hz 58.5 Hz 59.0 Hz	F2 F1
EXCITER FIRING CKT POWER LOSS  0-6-5	1. a) Loss of power to exciter switchgear firing ckt. Drawer 1 or 2. 2. a) Loss of Exciter.	1. a) None. 2. a) Notify Electrical Supervisor.		FIRING CKT EXC SWGR

ANNUNCIATOR PANEL LOCATION TGF-AX3ANNUNCIATOR PANEL 0VERTICAL 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

EXCITER GROUND  0-6-6	<ol style="list-style-type: none"> <li>1. a) Exciter Ground Defeated.</li> <li>2. a) None.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Notify Electrical Supervisor.</li> </ol>		64 EXC SWGR
EXCITER LIMITED PRETRIP  0-6-7	<ol style="list-style-type: none"> <li>1. a) Exciter excitation is higher than its preset value.</li> <li>2. a) Exciter voltage indication.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Lower exciter excitation.</li> </ol>		EXC SWITCHGEAR
EXCITER RAISE INHIBIT  0-6-8	<ol style="list-style-type: none"> <li>1. a) Gen rated voltage reached during no load operation &lt; 24KV &gt; 22KV.</li> <li>b) Excitation current for rated voltage at no load reached &lt; 49 Amps &gt; 37 Amps.</li> <li>2. a) Bkr 1661 and Bkr 1662 open.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Gen output voltage will not increase when either base adjustor/voltage adjustor placed in raise position.</li> <li>2. a) This alarm is usually caused by normal relay operation for startup and other no load condition.</li> </ol>	24KV 22KV  40 AMPS 37 AMPS	D 3X SWGR
GEN RELAY POT XFMR FAILURE  0-6-9	<ol style="list-style-type: none"> <li>1. a) Generator potential transformer failure.</li> <li>b) Exciter potential transformer failure.</li> <li>2. a) None.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) Prevents generator #3 backup relay from operating.</li> <li>b) Prevents generator #3 field fail relay from operating.</li> <li>2. a) Notify Electrical Supervisor.</li> </ol>		60 A 60 B MN CONT BD
ISOLATED PHASE BUS DUCT TROUBLE  0-6-10	<ol style="list-style-type: none"> <li>1. a) Bus duct blower not running when manual switch in auto and exciter breaker closed (A or B).</li> <li>b) Return temperature <math>\geq 151^{\circ}\text{F}</math>.</li> <li>c) Low flow in phase bus duct.</li> <li>d) Humidity in phase bus duct <math>\geq 50\%</math>.</li> <li>e) Duct Air Filtr Diff Press <math>\geq 1</math> in H<sub>2</sub>O.</li> <li>2. a) Bus duct blower auto trip; Lo bus duct flow.</li> <li>b) Auto trip on bus duct blower; Bus duct filter Diff Press Hi.</li> </ol>	<ol style="list-style-type: none"> <li>1. a) None.</li> <li>2. a) Reduce load as required to limit bus duct temperature.</li> <li>b) Check blower and filter.</li> <li>c) Check belts on running blower.</li> <li>d) Inspect coolers for proper flow and operation.</li> </ol>	151°F  50% 1 in H <sub>2</sub> O	SWGR TB-338-TS TB-339-FS TB-341-HS TB-340-PS



ANNUNCIATOR  
WINDOW  
LOCATION

NOTES

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0-1-7

- a) Main turbine lube oil purifier circ pump trip.
- b) Main turbine lube oil purifier overflow chamber high.
- c) Feedwater pp turbine 3A oil purifier circ pump trip.
- d) Feedwater pp turbine 3B oil purifier circ pump trip.
- e) Turbine oil purifier exhaust trip.
- f) Lube oil purifier level high.
- g) Feedwater turbine lube oil purifier overflow chamber level high.
- h) Feedwater turbine lube oil purifier overflow chamber Level Low.

ANNUNCIATOR  
WINDOW  
LOCATION

NOTES

- | ANNUNCIATOR<br>WINDOW<br>LOCATION | NOTES   |
|-----------------------------------|---|
| 0-3-9                             | <ul style="list-style-type: none"> <li>a) Generator Neutral Ground.</li> <li>b) Step-up Transformer and Generator Differential.</li> <li>c) Generator Differential.</li> <li>d) Generator Field Failure.</li> <li>e) Exciter Overcurrent and Generator Volt/HZ.</li> <li>f) Step-up Transformer Sudden Pressure.</li> <li>g) Generator Under Frequency.</li> <li>h) Generator Backup and Negative Sequence.</li> <li>i) Unit Aux Transformer Neutral Ground.</li> <li>j) Unit Aux Transformer Sudden Pressure.</li> <li>k) Unit Aux Transformer Differential.</li> <li>l) Startup Transformer Neutral Ground.</li> <li>m) Startup Transformer Sudden Pressure.</li> <li>n) Startup Transformer Neutral Ground.</li> <li>o) 480 V ES Bus A Undervoltage.</li> <li>p) 480 V ES Bus B Undervoltage.</li> <li>q) Reactor Trip.</li> <li>r) Turbine Trip.</li> <li>s) EH Low Fluid Level.</li> <li>t) Offsite Power Source Transformer Lockout Relays</li> </ul> |

ANNUNCIATOR  
WINDOW  
LOCATION

NOTES

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0-6-1

- a) Reactor Trip.
- b) Generator Differential.
- c) Generator Neutral Ground.
- d) Generator Backup Negative Sequence.
- e) Generator Field Failure.
- f) Exciter Overcurrent and Generator Volt/HZ.
- g) Stepup transformer Sudden Pressure.
- h) Stepup Transformer Differential.
- i) 500 KV Substation Primary Trip.
- j) 500 KV Substation Alternate Trip.