ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER _23_

TECHNICAL REVIEW

PORC REVIEW DATE _5-5-93_

Thomas A. Marlow
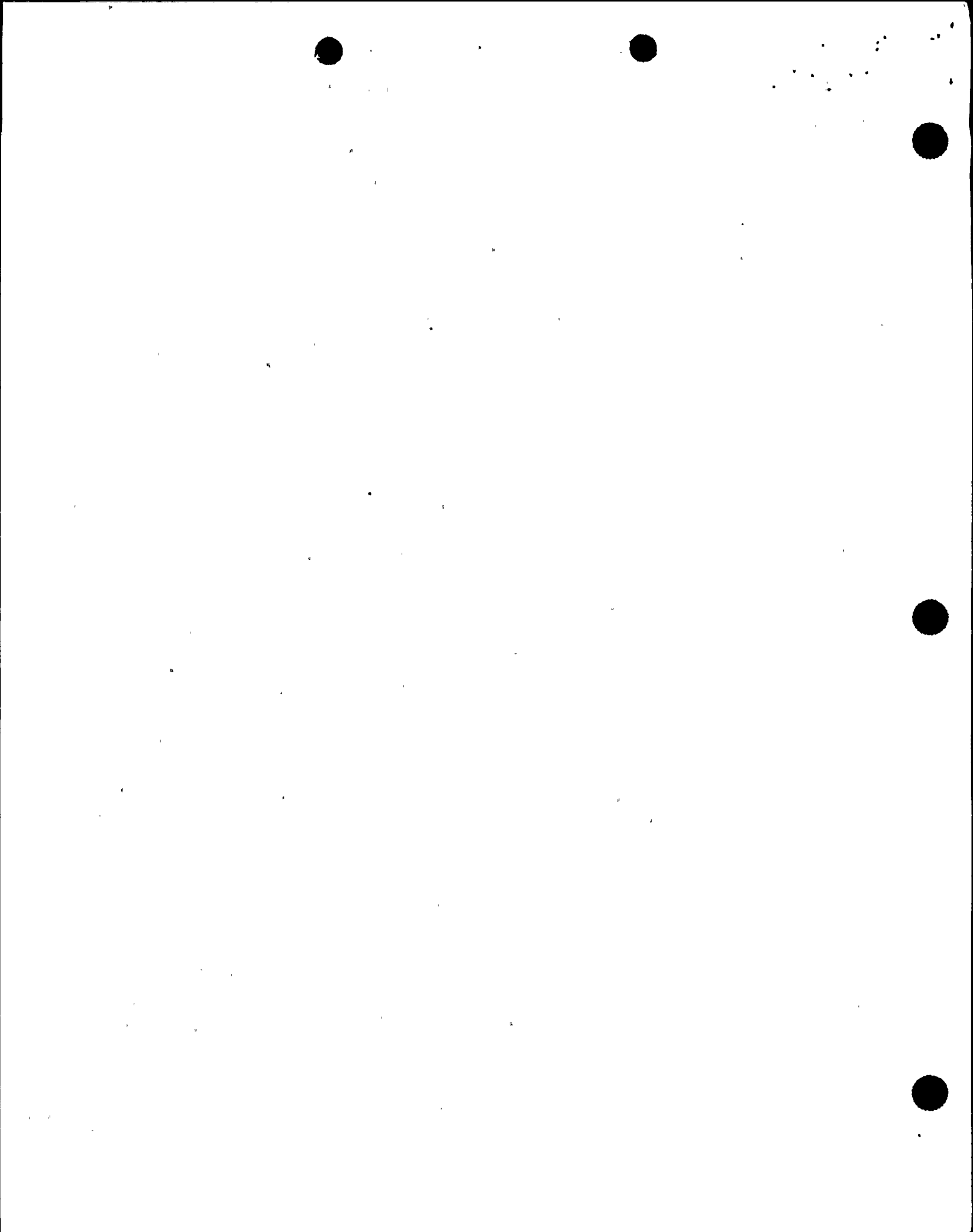PLANT SUPERINTENDENT

_5-7-93_
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

A. PURPOSE - This procedure provides the necessary instructions to control the plant following a turbine trip without a reactor trip required.

B. ENTRY CONDITIONS/SYMPTOMS

   1. ENTRY CONDITIONS - This procedure is entered from:

      a. AP-CW.1, LOSS OF A CIRC WATER PUMP, or,

      b. AP-ELEC.1, LOSS OF 12A AND/OR 12B TRANSFORMER, or,

      c. AP-FW.1, PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER, or,

      d. AP-TURB.2, AUTOMATIC TURBINE RUNBACK, or,

      e. AP-TURB.3, TURBINE VIBRATIONS, or,

      f. AP-TURB.4, LOSS OF CONDENSER VACUUM, when power is less than P-9 and the turbine trips without a Rx trip.

   2. SYMPTOMS - The symptoms of TURBINE TRIP WITHOUT RX TRIP REQUIRED are:

      a. Annunciator K-1, THRUST BEARING FAILURE, lit, or

      b. Annunciator K-9, TURBINE BEARING OIL LO PRESS TRIP 6 psi, lit, or

      c. Annunciator K-17, TURBINE LOW VACUUM TRIP 20" HG, lit, or

      d. Annunciator K-18, MAIN FEEDWATER PUMPS TRIPPED, lit, or

      e. Annunciator K-26, GENERATOR LOCKOUT RELAY, lit, or

      f. Annunciator K-25, TURBINE OVERSPEED ALERT 1980 RPM, lit, or

      g. Annunciator F-21, COND HI PRESS 20" HG OR LOSS OF BOTH CIRC WTR PMPS, lit, or

      h. Annunciator K-3, AMSAC ACTUATED, lit.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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<div align="center">CAUTION</div>

IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OR SI OCCURS, E-0, REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.

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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
1	Verify Turbine Stop Valves – CLOSED	Manually trip turbine. IF turbine stop valves can NOT be closed, THEN close both MSIVs. IF reactor power greater than 8% with both MSIVs closed, THEN manually trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
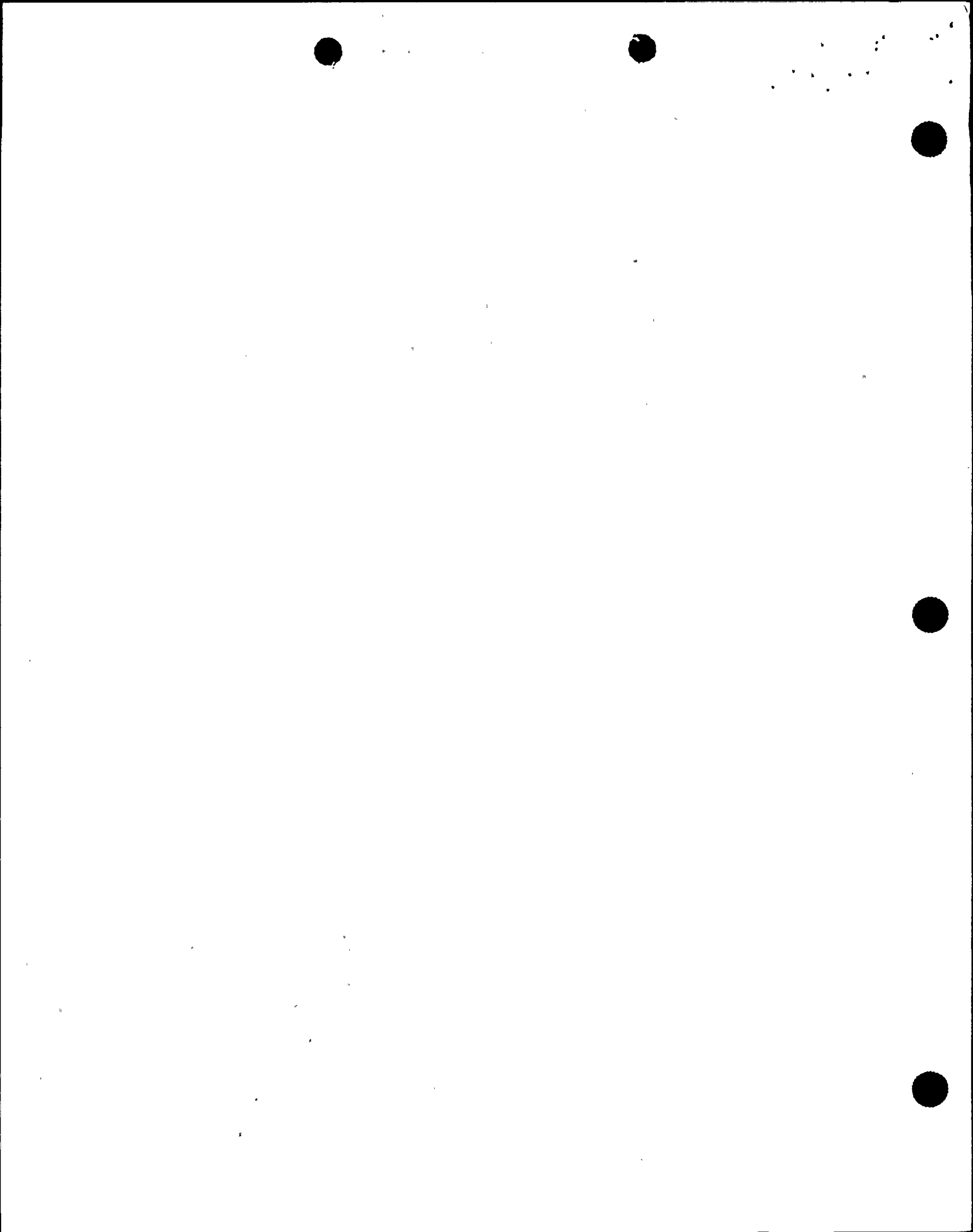
STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

PRZR PRESSURE LOW PRESSURE TRIP IS RATE SENSITIVE, THEREFORE, MONITOR
PRESSURE WHEN REDUCING RCS TEMPERATURE.

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NOTE: Automatic rod control is desired, if available.

2 Check Reactor Power:

   a. NIS intermediate ranges - ABOVE   a. Go to Step 3.
      THE POINT OF ADDING HEAT
      (APPROXIMATELY 2.5×10^{-6} AMPS)

   b. Verify control rods driving in   b. Perform the following:
      to reduce reactor power in AUTO
                                                1) Ensure ROD CONTROL BANK
                                                   SELECTOR switch to MANUAL

                                                2) Insert rods as necessary to
                                                   reduce reactor power.

   c. Borate as necessary to maintain
      control rods above rod insertion
      limits

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

3 Monitor S/G Levels:

a. Levels - GREATER THAN 30% OR INCREASING

    a. IF MFW regulating and bypass valves NOT controlling in AUTO, THEN place controllers in MANUAL and restore narrow range level to program.

    IF S/G level can NOT be restored, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.

b. Levels - TRENDING TO PROGRAM

    b. IF S/G level above program and increasing uncontrolled, THEN place controller(s) in MANUAL and decrease flow as necessary.

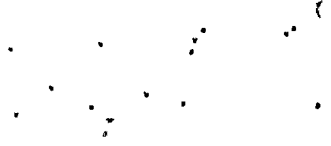   IF flow can NOT be controlled, THEN perform the following:

    1) Trip the reactor.

    2) Stop the running MFW pump.

    3) Close MFW pump discharge valves.

    4) Go to E-0, REACTOR TRIP OR SAFETY INJECTION.

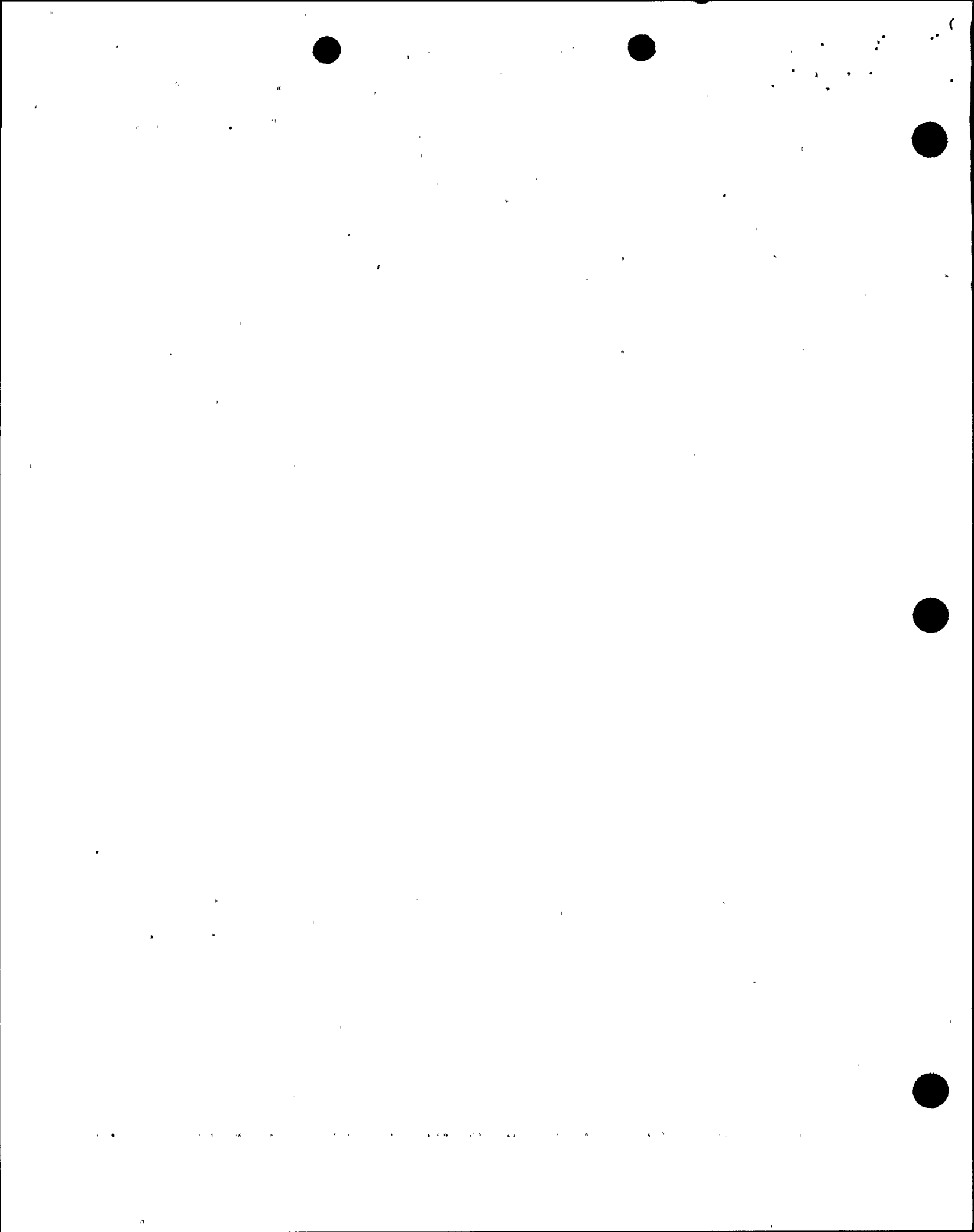| STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4	Verify Proper Operation Of Steam Dump:	
	a. Verify annunciator G-15, STEAM DUMP ARMED - LIT	a. Place steam dump mode selector switch to MANUAL.
	b. Condenser steam dump operating in AUTO	b. IF steam dump NOT available, THEN perform the following: 1) Adjust S/G ARV setpoints to 1005 psig and verify proper operation. 2) IF power is greater than 8%, THEN ensure reactor trip and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
	c. Tavg - TRENDING TO PROGRAM	c. IF Tavg can NOT be controlled, THEN manually trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
5	Check PRZR Pressure - TRENDING TO 2235 PSIG	IF PRZR pressure can NOT be controlled, THEN refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

6 Check PRZR Level:

   a. Level - GREATER THAN 13%

      a. Perform the following:

        1) Place loop B cold leg isolation valve to REGEN Hx (AOV-427) switch to CLOSE.

        2) Place letdown orifice valve switches to CLOSE (AOV-200A, AOV-200B, and AOV-202).

        3) Verify excess letdown isolation valve (AOV-310) closed.

        4) Ensure PRZR heaters off.

        5) Control charging to restore PRZR level greater than 13%.

        6) WHEN PRZR level greater than 13%, THEN restore letdown.

   b. Level - TRENDING TO PROGRAM

      b. Increase charging flow as necessary to restore PRZR level to program.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
7	**Check MFW System:**	
	a. Verify MFW regulating and bypass valves - OPERATING IN AUTO	a. Place MFW regulating and bypass valve controllers in MANUAL and restore S/G level.
	b. MFW pumps - BOTH RUNNING	b. Perform the following: 1) Verify one MFW pump running. IF NOT, THEN verify both MDAFW pumps running. 2) Go to Step 8.
	c. Close one MFW pump discharge valve	
	d. Stop selected MFW pump	
8	**Establish Stable Plant Conditions:**	
	a. Place rod control bank selector in MANUAL	
	b. NIS intermediate ranges - BELOW THE POINT OF ADDING HEAT (APPROXIMATELY 2.5×10^{-6} AMPS)	b. Return to Step 2.
	c. PRZR pressure - BETWEEN 2220 PSIG AND 2260 PSIG	c. Control PRZR heaters and spray as necessary.
	d. PRZR level - TRENDING TO PROGRAM	d. Control charging as necessary.
	e. S/G levels - TRENDING TO PROGRAM	e. Control S/G feed flow as necessary.
	f. RCS Tavg - GREATER THAN 540°F	f. Control dumping steam as necessary. IF cooldown continues, THEN close both MSIVs.

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |

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CAUTION

IF ANY S/G LEVEL ABOVE PROGRAM, THEN AFW FLOW MAY BE THROTTLED IMMEDIATELY TO PREVENT S/G ISOLATION.

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NOTE: Maintain Reactor power less than 2%. This is within the capacity of MDAFW pumps.

9   **Check S/G Feed Flow Status:**

a. Manually start both MDAFW pumps

b. Verify AFW flow - ESTABLISHED

    b. Perform the following:

        1) Establish MFW flow using MFW regulating valve bypass valves.

            IF MFW NOT available, THEN manually start TDAFW pump and establish flow as necessary.

        2) Go to Step 10.

c. Verify MFW flow control valves - CLOSED

    • MFW regulating valves
    • MFW bypass valves

    c. Place A and B MFW regulating and bypass valve controllers in manual at 0% demand.

d. Close MFW pump discharge valves

    • MOV-3977, A MFW pump
    • MOV-3976, B MFW pump

e. Stop any running MFW pump and place in PULL STOP

f. Check S/G level - TRENDING TO 39%

    f. Adjust MDAFW pump flow as necessary to restore S/G level.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

WHEN FEEDING BOTH S/G(S) USING ONE MDAFW PUMP, THEN THE SUM OF THE FLOWS TO BOTH S/G(S) MUST BE LESS THAN 230 GPM.

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10 Establish Normal AFW Pump Shutdown Alignment:

   a. Place AFW bypass switches to DEF

   b. Verify the following:

      o Both S/G levels - STABLE OR INCREASING

      o Total AFW flow - LESS THAN 200 GPM

   c. Close MDAFW pump discharge valves

      • MOV-4007
      • MOV-4008

   d. Stop all but one MDAFW pump

   e. Open AFW discharge crossover valves

      • MOV-4000A
      • MOV-4000B

   f. Open AFW bypass valves as necessary to control S/G levels

      • AOV-4480
      • AOV-4481

RESPONSE NOT OBTAINED:

b. Continue with Step 11. WHEN conditions met, THEN do Steps 10c through f.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
11	Establish Normal Shutdown Alignment:	
	a. Check condenser - AVAILABLE	a. Dispatch AO to perform Attachment SD-2.
	b. Perform the following as necessary:	
	o Open generator disconnects	
	• 1G13A71 • 9X13A73	
	o Place voltage regulator to OFF	
	o Open turbine drain valves	
	o Rotate reheater steam supply controller cam to close valves	
	o Place reheater dump valve switches to HAND	
	o Stop all but one condensate pump	
	c. Verify Bus 11A and Bus 11B energized - BOTH BUSSES GREATER THAN 4 KV	c. IF either bus NOT energized, THEN refer to 0-6.9.2, ESTABLISHING AND/OR TRANSFERRING OFFSITE POWER TO BUS 12A/ BUS 12B.
	d. Dispatch AO to perform Attachment SD-1	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: Refer to 0-9.3, NRC IMMEDIATE NOTIFICATION, for reporting requirements.

12 Notify Higher Supervision

13 Establish Desired Plant Conditions:

   a. Reactor shutdown - DESIRED

   b. Refer to 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN

   a. IF turbine is to be restored to service, THEN maintain reactor critical and refer to 0-1.2, PLANT FROM HOT SHUTDOWN TO STEADY LOAD.

-END-

AP-TURB.1 APPENDIX LIST

	TITLE	PAGES
1)	ATTACHMENT SD-1	2
2)	ATTACHMENT SD-2	1