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AP-TURB.4	LOSS OF CONDENSER VACUUM		
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ROCHESTER GAS AND ELECTRIC CORPORATION
GINNA STATION
CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

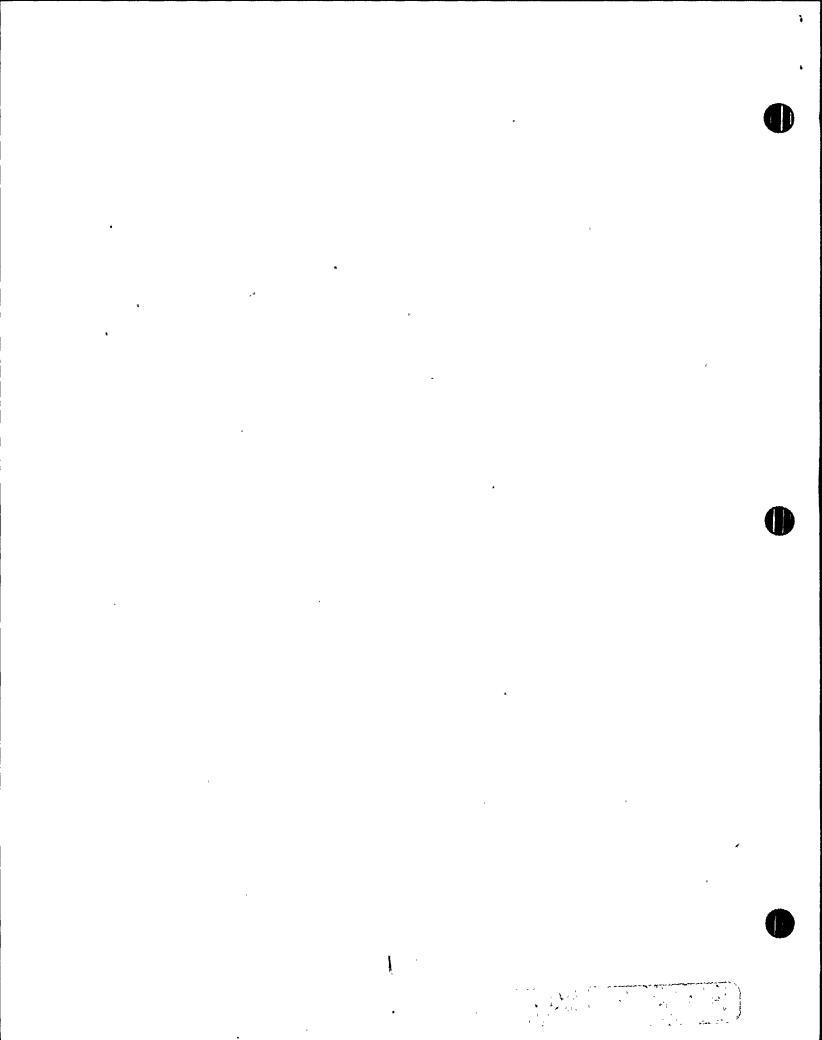
PORC REVIEW DATE 3-24-93

PLANT SUPERINTENDENT

3-26-93 EFFECTIVE DATE

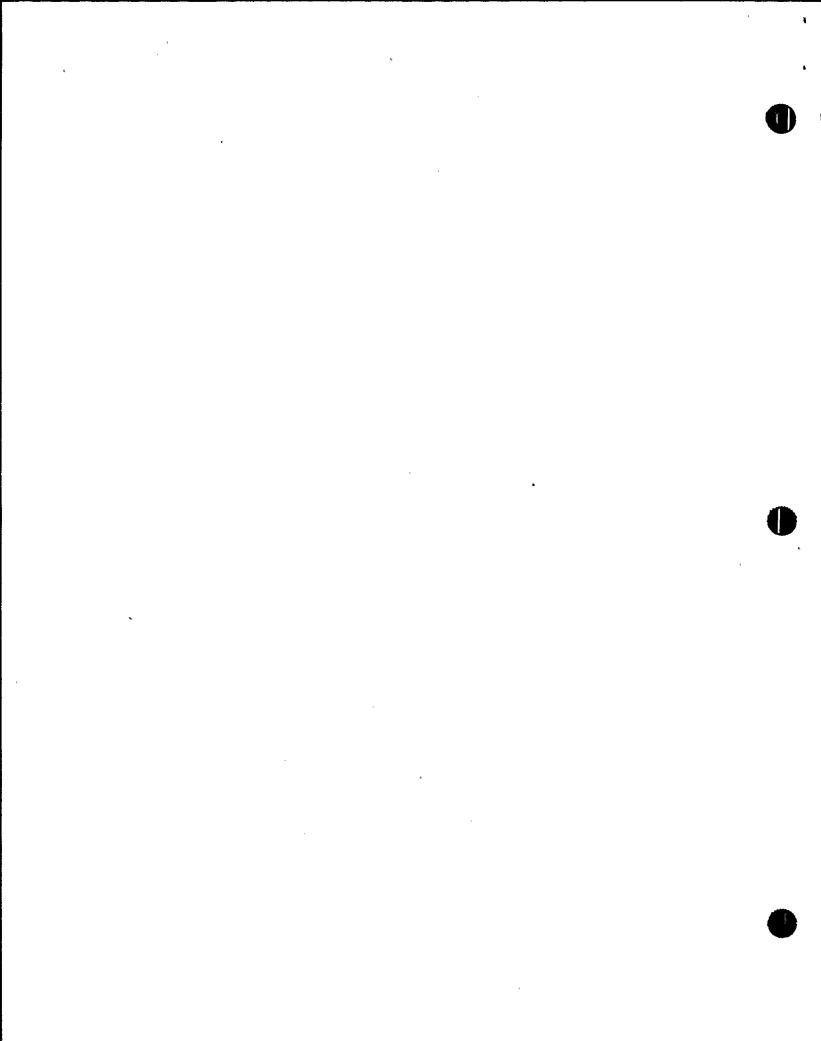
CATEGORY 1.0

REVIEWED BY: _____



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- A. PURPOSE This procedure provides the necessary actions to control the plant with decreasing condenser vacuum.
- B. ENTRY CONDITIONS/SYMPTOMS
 - 1. ENTRY CONDITIONS This procedure is entered from AP-CW.1, LOSS OF A CIRC WATER PUMP, when a circulating water system malfunction is indicated.
 - 2. SYMPTOMS The symptoms of LOSS OF CONDENSER VACUUM are;
 - a. Low or decreasing condenser vacuum, or
 - b. Annunciator J-16, MOTOR OFF CW-EH EMERG OIL SEAL OIL BU, lit, or
 - c. Annunciator H-7, CONDENSER HI PRESSURE, 25.5" HG, lit, or
 - d. PPCS high condenser backpressure alarm, or
 - e. Unexplained decreasing generator output.



STEP ACTI

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTION

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

O EXCESSIVE BACK PRESSURE MAY RESULT IN THE LAST ROW OF TURBINE BLADES OPERATING AS A COMPRESSOR PRODUCING BLADE LOADING OPPOSITE TO THE DIRECTION OF ROTATION AND CAUSING SEVERE BLADE VIBRATION.

NOTE: o PPCS backpressure readings (PBACK) should be verified by AO calculation from local readings for each condenser.

o Operation in the AVOID region should be limited to 20 minutes unless the cause of loss of vacuum has been corrected and backpressure is returning to normal.

1 Check Condenser Indications:

- a. Condenser vacuum GREATER THAN 20 INCHES HG
- a. Perform the following:
 - 1) Verify turbine trip.
 - 2) Go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED, or E-O, REACTOR TRIP or SAFETY INJECTION, as required.
- b. Turbine back pressure EACH CONDENSER WITHIN LIMITS OF FIGURE BACK PRESSURE
- b. <u>IF</u> in the AVOID region, <u>THEN</u> adjust turbine load (at 1%/min) as necessary to return to the safe operating region.

<u>IF</u> in the DO <u>NOT</u> OPERATE region, <u>THEN</u> trip the reactor and go to E-O, REACTOR TRIP OR SAFETY INJECTION.

- c. Condenser vacuum STABLE OR INCREASING
- Decrease generator load as necessary to stabilize condenser vacuum.

IF vacuum can NOT be stabilized, THEN perform the following:

- 1) Decrease generator load to minimum.
- 2) Trip turbine.
- 3) Go to AP-TURB.1, TURBINE TRIP WITHOUT RX TRIP REQUIRED.

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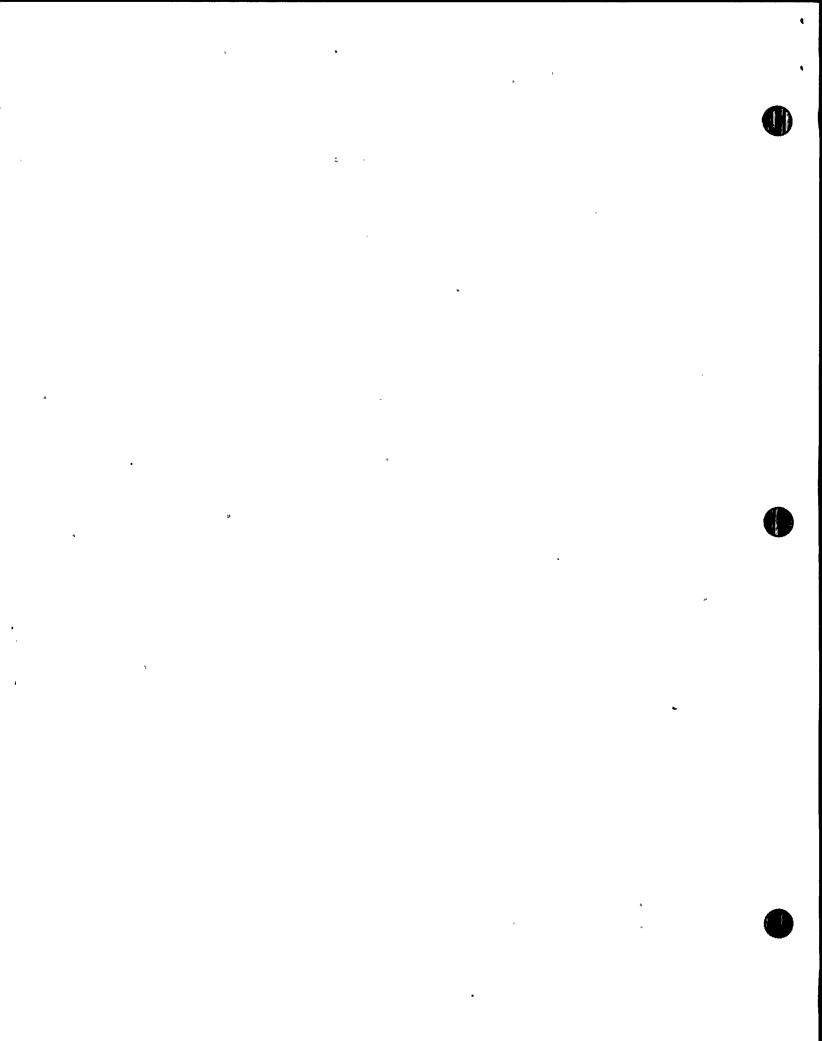
STEP ACTION/EXPECTED RESPONSE RESPONSE NOT OBTAINED

2 Dispatch AO To Perform Local Actions (Refer to Attachment COND VACUUM)

3 Check Condenser Circulating Water System - OPERATING AS REQUIRED

- o CW pump discharge valves BOTH OPEN
- o CW pumps BOTH RUNNING

<u>IF</u> a loss of circulating water has occurred, <u>THEN</u> go to AP-CW.1, LOSS OF A CIRC WATER PUMP:



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TEP ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

CAUTTON

- o DP LIMITS ON THE GENERATOR HYDROGEN COOLER AND CONDENSATE COOLER SHOULD NOT BE EXCEEDED (DP LIMITS INDICTED AT DP METERS AT MCB REAR).
- o CLOSELY MONITOR FEED PUMP SUCTION PRESSURE WHEN ADJUSTING CONDENSATE COOLING VALVES.

4 Check Condensate Temperature
- LESS THAN 100°F (PPCS point
ID T2053)

Perform the following:

- a. Place S/G blowdown and sample valve master isolation switch to CLOSE.
- b. <u>IF</u> condensate cooler in service, <u>THEN</u> perform the following:
 - 1) Place generator hydrogen temperature controller in MANUAL at 50%.
 - 2) Dispatch AO to throttle close condensate cooler bypass valve as necessary.
 - Adjust hydrogen temperature controller and condensate cooler manual bypass valve as necessary to establish maximum condensate cooling.

5 Check Condenser For Air Inleakage - NO INLEAKAGE DETECTED

<u>IF</u> condenser inleakage is detected, <u>THEN</u> perform the following:

- a. Isolate if possible.
- b. <u>IF</u> inleakage can <u>NOT</u> be isolated, <u>THEN</u> go to Step 6.

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c. Verify proper operation of

level.

to program.

charging pump speed controllers OR take manual control of speed controllers to control PRZR

d. <u>IF S/G levels NOT</u> controlling in AUTO, <u>THEN</u> place affected main feed regulating valve(s) in manual and restore S/G level(s)

c. PRZR level - TRENDING TO PROGRAM

d. S/G level - TRENDING TO PROGRAM

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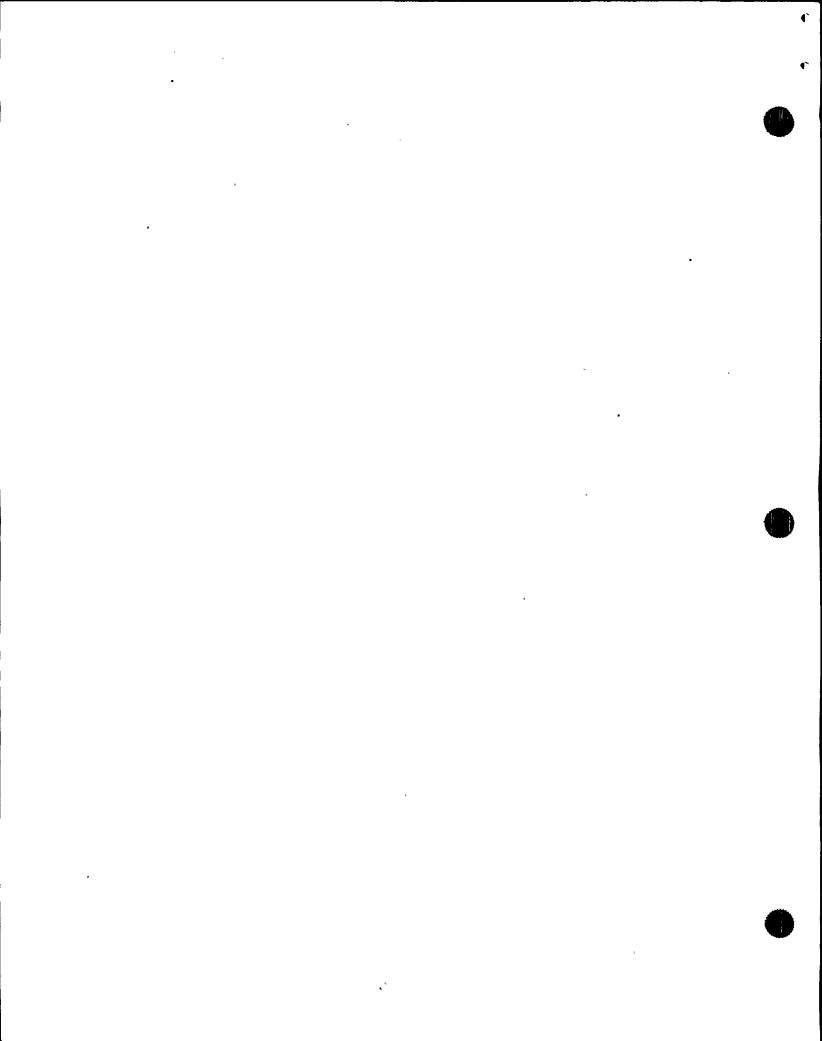
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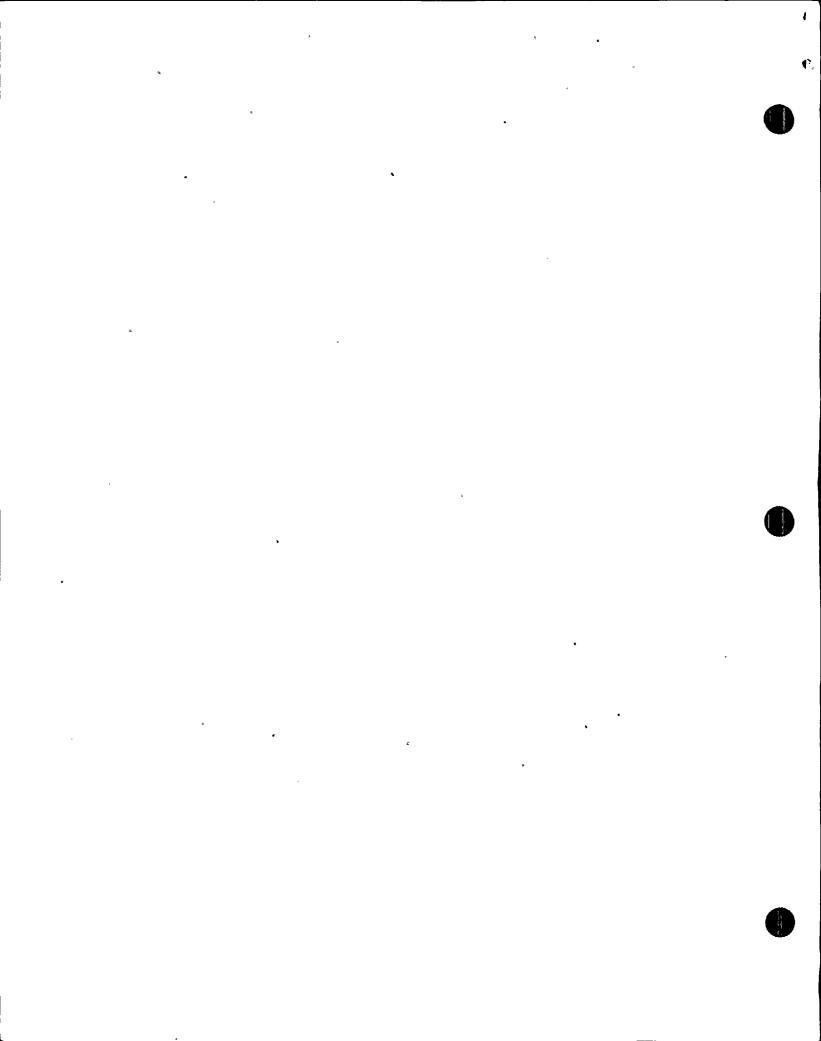
RESPONSE NOT OBTAINED ACTION/EXPECTED RESPONSE 9 Notify Higher Supervision 10 Return To Procedure Or Guidance In Effect -END-



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AP-TURB.4 APPENDIX LIST .

TITLE		'PAGES	
1)	FIGURE BACK PRESSURE	1	
2)	ATTACHMENT COND VACUUM	1	



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FIGURE BACK PRESSURE

BACK PRESSURE (inches Hg)

3.

