ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 3-24-93

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PLANT SUPERINTENDENT

3-26-93
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

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	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

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

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NOTE:
- PPCS backpressure readings (PBACK) should be verified by AO calculation from local readings for each condenser.
- 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-0, REACTOR TRIP or SAFETY INJECTION, as required.
	b. Turbine back pressure - EACH CONDENSER WITHIN LIMITS OF FIGURE BACK PRESSURE	b. IF in the AVOID region, THEN adjust turbine load (at 1%/min) as necessary to return to the safe operating region. IF in the DO NOT OPERATE region, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.
	c. Condenser vacuum - STABLE OR INCREASING	c. 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.

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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CAUTION

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

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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. IF condensate cooler in service, THEN 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. 3) 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	IF condenser inleakage is detected, THEN perform the following: a. Isolate if possible. b. IF inleakage can NOT be isolated, THEN go to Step 6.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	Monitor Condenser Indications: o Condenser back pressure - LESS THAN FIGURE BACK PRESSURE o Vacuum - STABLE OR INCREASING	Return to Step 1.
7	Establish Stable Plant Conditions:	
	a. Tavg - TRENDING TO TREF	a. Adjust control rods and turbine load as necessary to restore Tavg to Tref.
	b. PRZR pressure - TRENDING TO 2235 PSIG	b. Verify proper operation of PRZR heaters and spray or take manual control of PRZR pressure controller 431K. IF pressure can NOT be controlled, THEN refer to AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE.
	c. PRZR level - TRENDING TO PROGRAM	c. Verify proper operation of charging pump speed controllers OR take manual control of speed controllers to control PRZR level.
	d. S/G level - TRENDING TO PROGRAM	d. IF S/G levels NOT controlling in AUTO, THEN place affected main feed regulating valve(s) in manual and restore S/G level(s) to program.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8	Establish Normal Plant Operation:	
	a. Verify EH control in AUTO IMP IN	a. Place EH in AUTO IMP IN if desired.
	b. Verify annunciator G-15, STEAM DUMP ARMED - EXTINGUISHED	b. IF Tavg within 6°F of Tref, THEN perform the following: 1) Ensure steam dump valves closed. 2) Reset steam dump.
	c. Verify charging pump speed control in AUTO	c. Place charging pump speed control in AUTO if desired.
	d. Verify Rod Control Selector Switch in AUTO	d. Place Rod Control Selector Switch in AUTO if desired.
	e. Dispatch AO to remove priming ejector from service if desired	
	f. Verify S/G blowdown and sample valve master isolation switch in REMOTE	f. Perform the following: 1) Dispatch AO to locally isolate blowdown. 2) WHEN blowdown locally isolated, THEN place blowdown and sample valve master switch to REMOTE. 3) Direct AO to restore blowdown flow (Refer to T-14F, S/G BLOWDOWN SYSTEM STARTUP).

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

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AP-TURB.4 APPENDIX LIST

FIGURE BACK PRESSURE