

EOP: AP-RCC.2	TITLE: RCC/RPI MALFUNCTION	REV: 4 PAGE 1 of 7
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

TECHNICAL REVIEW

PORC REVIEW DATE 4/4/90

Joseph A. Widay  
PLANT SUPERINTENDENT

4/9/90  
EFFECTIVE DATE

QA  NON-QA  CATEGORY 1.0

REVIEWED BY: \_\_\_\_\_

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EOP: AP-RCC.2	TITLE: RCC/RPI MALFUNCTION	REV: 4 PAGE 2 of 7
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- A. PURPOSE - This procedure provides the steps necessary to continue plant operation while investigating an RCC/RPI malfunction.
- B. ENTRY CONDITIONS/SYMPTOMS
1. ENTRY CONDITIONS - This procedure is entered from:
    - a. AP-TURB.2, when MRPI indicates all control and shutdown rods are not within  $\pm 12$  steps of their respective bank.
  2. SYMPTOMS - The symptoms of RCC/RPI MALFUNCTION are;
    - a. Annunciator C-5, PPCS Rod Sequence or Rod Deviation alarm lit, or
    - b. Power range NIS indicate a flux tilt, or
    - c. Group step counters for any individual bank are not within 1 step of each other, or
    - d. Incore flux map indicates abnormal flux tilt, or
    - e. Incore thermocouples indicate abnormal power tilt, or
    - f. Individual rods are not within  $\pm 12$  steps of their respective step counters as indicated on MRPI, or
    - g. Annunciator F-29, PPCS Axial or Radial or Quadrant Power Tilt.



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.

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1 Place Rod Control Bank Selector Switch - TO MANUAL

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CAUTION

UNTIL THE MRPI SYSTEM IS KNOWN TO BE AT FAULT, A ROD INDICATING GREATER THAN ± 12 STEPS FROM ITS GROUP STEP COUNTER SHOULD BE CONSIDERED A MISALIGNED RCC. BANK ROD WITHDRAWAL SHOULD NOT BE PERFORMED UNTIL THE MISALIGNED ROD IS RECOVERED.

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2 Check Individual Rods On MRPI Display - EACH ROD WITHIN ± 12 STEPS OF ITS RESPECTIVE GROUP STEP COUNTER

IF only one rod is indicating greater than ± 12 steps misaligned from its group step counter, THEN go to Step 3.

IF two or more rods indicate greater than ± 12 steps misaligned from their group step counters, THEN be in HSD within six hours.



STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Steps 3 and 5 are an attempt to determine whether an RCC is misaligned or whether the MRPI System is malfunctioning.

3 Check QPTR - LESS THAN 1.02

IF QPTR > 1.02, THEN computer value should be verified using 0-6.4 to prevent action based on failed computer inputs.

IF MRPI indicates an RCC is on the bottom, THEN refer to ER-RCC.1, RETRIEVAL OF A DROPPED ROD.

IF MRPI indicates an RCC is NOT within  $\pm 12$  steps of its group step counter, THEN refer to ER-RCC.2, RESTORING A MISALIGNED ROD.

4 Notify I&C And The Reactor Engineer Of RCC/RPI Malfunction

NOTE: Continue with Steps 6, 7 and 8 while waiting for the flux map traces of Step 5 to be completed.

5 Verify Actual RCC Position By Flux Map - WITHIN  $\pm 12$  STEPS OF ITS GROUP STEP COUNTER

IF the actual position of the affected RCC is on the bottom, THEN refer to ER-RCC.1, RETRIEVAL OF A DROPPED ROD.

IF the actual position of the affected RCC is NOT within  $\pm 12$  steps of its group step counter, THEN refer to ER-RCC.2, RESTORING A MISALIGNED ROD.





STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	<p>Verify All Group Step Counters Operable:</p> <ul style="list-style-type: none"> <li>o Group step counters for each individual bank - WITHIN 1 STEP OF EACH OTHER</li> <li>o No other indications of step counter inoperability</li> </ul>	<p>Refer to Tech Spec section 3.10.5.3 <u>AND</u> perform the following:</p> <p><u>IF</u> both step counters in any individual bank are inoperable, <u>THEN</u>:</p> <ul style="list-style-type: none"> <li>o Restore step counters to operable within one hour</li> </ul> <p style="text-align: center;">-OR-</p> <ul style="list-style-type: none"> <li>o Be in HSD within the following six hours</li> </ul> <p><u>IF</u> only one group step counter per individual bank is inoperable, <u>THEN</u>:</p> <ul style="list-style-type: none"> <li>o Verify that MRPI for each rod of affected bank is operable and rods of the affected bank are at the same indicated position at least once per 8 hours.</li> </ul> <p style="text-align: center;">-OR-</p> <ul style="list-style-type: none"> <li>o Reduce power to less than 50% of rated power within 8 hours.</li> </ul>



STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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NOTE: IF the MRPI CRT fails, THEN the PPCS can be used for rod position indication until the CRT is made operable. Rod position indication can be retrieved from the PPCS using the blue CBAW key.

7 Verify All Individual Rod Position Indication Per Bank Operable:

- o MRPI system - NO MRPI SYSTEM ALARMS
- o MRPI system - NO KNOWN PROBLEMS WITH MRPI SYSTEM THAT COULD RENDER ROD POSITION INDICATION INOPERABLE

IF two or more individual rod position indications per bank are inoperable, THEN:

- o Restore inoperable individual rod position indications to operable within one hour.

-OR-

- o Be in HSD within the following six hours.

IF only one rod position indication per bank is inoperable, THEN:

- o Once per 8 hours, determine the affected rod position using moveable incore detection system and after motion of the non-indicating rod exceeding 24 steps in one direction.

-OR-

- o Reduce power to less than 50% of rated power within 8 hours.

8 Notify Higher Supervision



EOP: AP-RCC.2	TITLE: RCC/RPI MALFUNCTION	REV: 4 PAGE 7 of 7
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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9 WHEN The Malfunctioning RPI  
Or RCC Is Repaired, THEN  
Perform PT-1, ROD CONTROL  
SYSTEM, If Necessary

-END-

