

# CAUSE ANALYSIS

CR Number

NOP-LP-2001-03

03-00049

Category / Eval Code: CA

**Condition Description and Cause Basis:**☒ Hardware / Degraded Condition Resolution Required?☐ Yes☒ No

If Yes, select one

☐ Repair☐ Scrap☐ Rework☐ Use-As-Is**Condition Description:**

Bump started RCP 1-2. Received annunciator 8-2-B, RCP 1-2 Motor Trouble/Trip. RCP 1-2 tripped Instantaneously. Field report indicates the trip occurred on relay 87, Motor Differential.

**Discussion:**

Prior to this event, RCP 1-2 tripped the day before. Refer to CR 03-00042. Corrective action for that event required two phases of T - Leads to be swapped. The direction given by the Electrical Supervisor was that phase A and C should be swapped.

The electrician assigned the task of performing this action, believed that phase C cable would exceed the minimum bend radius and swapped phase A and B instead. The configuration of Current Transformers feeding was changed to reflect this change.

Following this event, a Troubleshooting plan was developed to determine the cause of the trip and included the following:

- a) Remove breaker HB03 from its cubicle and perform an inspection of the breaker.
- b) Verify that breaker HB03 50/51A and 50/51C relays (P9-11382 and P9-11382) have the proper set point.
- c) De-terminate 2 or 3 T-leads at the motor terminal box to confirm proper T-lead labeling.
- d) Install the test fixture and ground one T-lead at a time at the test fixture and determine which lead at the motor indicates grounded. Repeat 1 or 2 times to identify L1, L2, and L3 at the motor.
- e) Label leads appropriately.
- f) Terminate T-leads exactly as they were de-terminated.
- g) At the motor terminal box perform the following (refer to DWG E-0052B SH 46A and Westinghouse drawing 3800C61):
  - Verify CT1 corresponds to station L1
  - Verify CT2 corresponds to station L2
  - Verify CT3 corresponds to station L3
  - Verify D1 connected to + of CT1
  - Verify D2 connected to + of CT2
  - Verify D3 connected to + of CT3
  - Verify D11 connected to - of CT1
  - Verify D12 connected to - of CT2
  - Verify D13 connected to - of CT3
- h) Lift leads D12 and D13 at the motor terminal box. Verify continuity between positions 8 and 9 of 87M at HB03.
- i) Land lead D12 and lift lead D11 at the motor terminal box. Verify continuity between positions 14 and 15 of 87M at HB03.
- j) Land lead D13 and lift lead D12 at the motor terminal box. Verify continuity between positions 18 and 19 of 87M at HB03.
- k) Land leads D11 and D12 at the motor terminal box.
- l) Perform DB-PF-05064 de-energized motor tests of MP36-2 using the test fixture install in HB03.
- m) Remove the test fixture from HB03 and install breaker HB03.

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