ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION
SERVICE DEPARTMENT
MAINTENANCE INSTRUCTION

CHECKING AND SETTING TRANSITION SW1000 AND 1001

INTRODUCTION

The purpose of this procedure is to check the transition on the SW1000 and SW1001 locomotives with a D25 generator. This will be done using the resistance in the battery field circuit by energizing either singly or in pairs AVC, BVC, and CVC. By doing this, the battery field current will be controlled, and as a result so will the main generator, short circuited current be controlled.

By using the resistance designed in the battery field circuit there will be no need to use a carbon pile or some other external resistance, thereby greatly simplifying the test procedure.

DRAWINGS REQUIRED: Applicable Locomotive Wiring Diagram

Applicable Charts and Graphs

EQUIPMENT REQUIRED
For each test procedure

1. (2000-3000) amp 50 MV shunt.
2. MG set.
3. Two jumper wires.
4. Use two X1—1100/24 cables.
5. Millivoltmeter (0-50) MV.
6. (0-1000) voltmeter.
7. One test light.

PRELIMINARY SETUP

OBJECTIVE	OPERATION
1. In order to monitor main generator current.	Remove generator shunt panel. In its place use a (2000-3000) amp 50 MV shunt. Put a (0-50) MV voltmeter across the shunt at the meter terminals.
2. In order to isolate the output of the MG set from the main generator.	Remove the appropriate wire leading to PTR-M, and also remove the generator positive wire leading to RE2A.
3. To simulate main generator voltage across the pickup and dropout resistors.	Connect the positive output of the MG set to RE2A and the negative output to PTR-M.
4. How to exercise control of main generator current by controlling BF current.	In order to control battery field current and thus control main generator current use battery field resistance (A1-A2), (B1-B2), (C1-C2), (D1-D2) and RE18 (A, B) which is in parallel with LR. Utilize the RE-BF by energizing AVC or CVC, and thus by either raising or lowering the resistance in series with BF control BF current.

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5. In order to utilize (RE-BF) disable (BVC).	Disable BVC in order that the RE-BF might be utilized by removing the wire from SCC-H2.
6. How to keep BF energized.	Keep SF energized and as a result energize BF by jumpering P2-F to TR-E1; or, cut a truck out.
7. How to get a maximum resistance from LR, and; therefore, more readily control BF current in the range desired for the test.	Jumper BF-GH to energize ORS which keeps LR in minimum field and, therefore, have maximum, approximately 12 ohms, LR resistance.
8. How to prevent the unit from attempting to make transition, and how to get an indication of the above mentioned.	Disconnect wire 11F from PTR-D. To get an indication of PTR pickup hook a test lamp between PTR-D to battery negative.

TEST PROCEDURE

1. Start the engine.
2. Connect input of MG set across the battery knife switch.

WARNING: Do not short the main generator before starting the engine.

3. Short the main generator by jumpering from the GS side of the equipment bus to the GN side of the shunt panel. Use two 1100/24 cables.
4. Position the selector switch in "AUTO", but leave the reverser centered. As further protection remove wire MK1 from GS.

NOTE: Adjust MG set voltage to 800 volts for at least five minutes to allow resistors to warm up.

5. Check PTR pick up.
   a. Disable CVC so it will not pick up; by doing this there will be enough resistance in the battery field circuit to get the desired main generator current.
   b. Position the throttle in No. 6 position, this will give approximately (750-800) main generator amps.
   c. Battery field current should be approximately 12 amps.
   d. Slowly raise MG set voltage until PTR picks up.
   e. Plot on Charts and Graphs, and adjust RE2C if necessary.
6. Check PTR drop out.
   a. Pick up PTR as described in Step 5 (a—d) inclusive at the same amperage.
   b. Slowly lower MG set voltage until PTR drops out.
   c. Plot on Charts and Graphs, and adjust slider on RE2B if necessary.
7. Check PTR pick up and drop out at another point.
   a. Short out CVC so it will not pick up; by doing this there will be enough resistance in the battery field circuit to get the desired main generator amperage.
   b. Follow procedure outlined in Steps 5 and 6; except position throttle in No. 3 position and this will give about 500 amps in the main generator.
   c. Battery field current should be approximately 8 amps.
   d. If desired PTR pick up may be checked by MG set voltage alone.

NOTE: Return all circuits to normal before placing unit in service.

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