DC CONTROL AND REVERSING CIRCUIT ASSOCIATED WITH PROGRAM AMPLIFIERS PER DRAWING SD-64751-01 - TOLL OFFICES

1. GENERAL

1.01 This section describes the method of performing local tests and adjustments on DC control and reversing circuits per Dwg. SD-64751-01 associated with program amplifiers.

1.02 The periodicity of these tests and adjustments is covered in the tables of frequencies in subdivision A107 of this series of practices. However, it may be desirable to perform certain of the tests and adjustments outlined herein if a failure of the equipment should be experienced when overall routine circuit reversing tests are performed in accordance with the appropriate sections in subdivisions E27 and E37 of Bell System Practices, Toll Test Room Operation.

LOCAL OPERATION TESTS AND ADJUSTMENTS

2. APPARATUS

2.01 Transmission measuring set capable of measuring up to + 20 dbm. or volume indicator 754-B or equivalent.

2.02 No. 35 Type Test Set.

2.03 1000 cycle tone - 20 dbm.

2.04 D.C. voltmeter capable of measuring voltage up to 150 V.

3. METHOD

3.01 Cleaning: Remove relay covers and inspect relay for dirty or pitted contacts, contact alignment, and follow. When the condition of the contacts indicates that cleaning is necessary, clean in accordance with current practices in Division A500.

3.02 Primary Control and Reversing Circuit: When necessary to make adjustments disconnect the circuit from any line facility and bridge and operate directional key to neutral. Test and adjust the (L) (L1) and (L2) relays in accordance with circuit requirements table and figure specified. In addition, refer to the A400 series covering the type of relay being tested for mechanical adjustments. After the relays are in adjustment, note the operation of the associated relays and the directional lamps. To check the continuity of both windings of the (A) and (B) relays connect the 35 type test set so that the current in both windings can be read. A reading of 80 to 100 mils indicates both windings are closed. If one winding is open the reading will be approximately 40 to 50 mils. A convenient setup for checking the (A) relay is obtained by blocking relay (B) operated and then connecting the 35 Type test set to the IT contact of relay (B) with a 419A tool. To check the (B) relay, block relay (A) operated and connect the test set to the IT contact of relay (A).

3.03 Operate the directional key (FROM BDG) or (EW). If a primary reversing line circuit is being tested, the "SX West" lead shall apply + 130 V control battery to the line. Test by connecting from "SX West" jack appearance (usually line equipment jacks) to a voltmeter and ground.

3.04 Operate direction key (TO BDG) or (WE). The "SX E" lead shall apply - 24 V control battery to the bridge connecting jack or + 130 V to the line, depending upon whether it is a through or terminal circuit. Test by voltmeter connection similar to 3.03 above.

4. METHOD

4.01 Secondary Control and Reversing Circuit Without Tertiary Control: Disconnect all primary reversing circuits from the bridge. Connect one primary reversing circuit to the first reversible bridge outlet that is equipped with a secondary reversing circuit and operate directional key "(TO BDG)." At bridge jacks connect 35B test set in series with (J-J1) jacks and set keys for "operate 48.5 mils," "Hold 25 mils," "Release open." Connect 1000 cycle tone to (BDG OUT) jacks. Connect monitoring head receiver to any other (BDG OUT) jack.

5. REQUIREMENTS

5.01 Tone should be heard on monitoring head receiver only when 35 type test set key is operated to "operate" and then to "hold."

5.02 Repeat test for each reversible outlet on bridge.

6. METHOD (A)

6.01 Combined Secondary and Tertiary Control and Reversing Circuit: Disconnect all primary reversing circuits from the bridge. Connect one primary reversing circuit to the first reversible bridge outlet that is equipped with a secondary and tertiary control circuit and operate directional key (TO BDG). At bridge jacks connect 35 type test set in series with (J-J1) jacks and set keys for "Operate 26 mils," "Hold 16 mils," "Release open." Connect 1000 cycle tone at minus 20 dbm to (BDG OUT) jack. Connect volume indicator or transmission measuring set to any other bridge out jacks.

7. REQUIREMENTS (A)

7.01 The volume indicator or transmission measuring set should indicate a reading only when the test set key is thrown to "operate" and then to "hold."

8. METHOD (B)

8.01 Using same connections as Method (A), set 35 type test set for "55.3 mils," with common equipment selection key (CE) normal.

9. REQUIREMENT (B)

9.01 The observed readings on the volume indicator or transmission measuring set should indicate a difference when the (CE) key is changed from "NORMAL" to "OPERATED" and will be dependent upon the loss in the common equipment when IN and OUT of the circuit.

9.02 Repeat test (A) for each reversible outlet on bridge.

10. METHOD

10.01 Cue Circuit: Disconnect all primary reversing circuits except one, from bridge. Set directional circuit key (DIR) (TO BDG). Connect 35 type test set in series with (SX-common) jacks. Adjust test set for "operate 7.3" and "open 0 mils."

11. REQUIREMENTS

11.01 (CUE) lamps should be ON when circuits open and OFF when circuit is closed.

11.02 Repeat for each reversible bridge.