

**PERFORMANCE REQUIREMENTS**  
**AUTOMATIC NUMBER IDENTIFICATION — TYPE B**  
**GENERAL EQUIPMENT REQUIREMENTS**  
**NO. 1 CROSSBAR, PANEL AND STEP-BY-STEP SYSTEMS**

**1. GENERAL**

**1.01** This section covers the performance requirements for automatic number identification (ANI) circuits and associated circuits in No. 1 and 350A step-by-step, 355A community dial offices, panel, and No. 1 crossbar offices. This section covers requirements for one identifier group. It covers the requirements for new, added, or modified ANI installations. A new ANI installation means a complete new office with ANI. An added ANI installation means a complete ANI system added to a working office, or a working ANI system having more circuits added. Installation tests shall be made in accordance with the Western Electric handbooks for the particular system, except when an agreement has been reached between the telephone company and the Western Electric Company to waive or modify any requirements.

**1.02** This specification is being reissued to add a new BSP division number 815-015-180, and to bring it into conformity with the general Plant Series plan.

**1.03** Reference shall be made to Section AA630.001 covering general performance requirements for additional information necessary for the proper application of the requirements listed herein. Also, refer to the proper section for performance requirements for the particular associated office equipment. Refer to Section AA610.005 for the mounting and alignment of apparatus, and to Section AA648.006 for the multifrequency pulsing supply requirements.

**1.04 Definitions**

**Associated Circuits** — Any circuits not originally designed for ANI to which an ANI function has been added as a modification.

**Concentrated Load Tests** — These tests provide for the direction of a number of simultaneous calls to a specific circuit or part of a circuit.

**Functions** — Refers to the functions listed in the circuit description for a particular circuit.

**Simultaneous Calls** — Simultaneous dialing of the last numerical or stations digit on a number of calls.

**Special Tests** — These tests are applied during the 3-week period prior to volume tests to check circuit functions that cannot be tested by a single call. They are also applied to *recheck* functions whose failure during volume tests would result in serious delays just before the turn-over date.

**Test Setup** — Refers to keys operated, leads connected, and test equipment required to perform a particular test.

**Volume Tests** — These tests are provided to detect trouble conditions which result from interaction between circuits when simultaneous requests are made for the common control circuits and the connector circuits. Normally, these volume tests shall be applied only when ANI is installed as part of a new office and may be integrated with corresponding tests on non-ANI equipment.

**1.05** Prior to installation, the Western Electric Company shall submit to the telephone company a method of procedure covering the installation and testing of the circuits. Usually,

volume tests will be performed last just before turnover.

**1.06** The tests covered are:

- (a) Individual circuit requirements for all circuits are covered in Part 2.
- (b) Special tests are covered in Part 3 and are listed as follows.

| TEST                             | PAGE |
|----------------------------------|------|
| Primary Number Network . . . . . | 2    |
| Secondary Network . . . . .      | 2    |
| Outpulser Connector . . . . .    | 2    |
| Outpulsers . . . . .             | 2    |
| Identifiers . . . . .            | 3    |
| Trunks . . . . .                 | 3    |
| Markers and Decoders . . . . .   | 3    |

- (c) Concentrated load tests are covered in Part 4 and are listed as follows.

| TEST                          | PAGE |
|-------------------------------|------|
| Outpulser Connector . . . . . | 3    |

- (d) Volume tests are covered in Part 5 and are listed as follows.

| TEST                              | PAGE |
|-----------------------------------|------|
| General . . . . .                 | 3    |
| Test Setup Requirements . . . . . | 3    |
| Performance Data . . . . .        | 4    |

- (e) Exercise tests are covered in Part 6.
- (f) Test requirements for modifications and additions are covered in Part 7.

**1.07** Test records and reports are covered in Part 8.

**2. INDIVIDUAL CIRCUIT REQUIREMENTS**

**2.01** All functions of a circuit that can be tested by ANI or other office test circuits shall be tested twice. All wiring and functions which cannot be tested by the above method shall be verified by a single test using other appropriate test equipment. If desired, equivalent Western Electric Company test equipment may be used to test all circuits. Troubles found shall be cleared and verified by a repeat test.

**2.02** Where calls require completion to operators, the condition may be simulated.

**2.03** All test circuits used, whether a part of ANI or not, shall be verified.

**2.04** In all ANI circuits provided with timer, check that condenser or tube timers meet the timing requirements given in the circuit requirement tables.

**2.05** Check each timing and alarm feature for correct operation in connection with the equipment for which it is used, including frame miscellaneous circuits.

**3. SPECIAL TEST REQUIREMENTS**

**A. Purpose of Test**

**3.01** These tests are applied to check circuit functions that cannot be tested by a single call or to recheck functions whose failure during volume tests would result in serious delays just before turnover.

**B. Primary Number Network**

**3.02** Verify each sleeve connection from IDF or LDF to this circuit and the cross connections associated. Also, verify the connections between the number network bays.

**C. Secondary Network**

**3.03** Verify all connections between primary number network and this circuit.

**D. Outpulser Connector**

**3.04** Check all functions of the outpulser connector on simulated or service calls. Originate sufficient calls to direct one to each trunk subgroup.

**3.05** Check all functions of the outpulser connector circuit lock out and preference chains for trunks and outpulsers.

**E. Outpulsers**

**3.06** Place calls designed to check identification of each office, both physical and theoretical, in each outpulser.

**3.07** Check each outpulser's ability to handle tip and ring, party, multiparty, line verification, permanent signal, test, abandoned, service observing, and identification failure calls.

**3.08** In panel offices with 2-party lines, check the ground removal test function in each outpulser.

**3.09** Check output voltage and frequency of mf generator in each outpulser, if provided.

**3.10** Check reorder, cancel first trial, and second trial function in each outpulser.

**3.11** Check outpulsing of operator identification signal before time-out when all identifiers are plugged busy.

#### **F. Identifiers**

**3.12** Check heavy and light traffic functions of each identifier.

**3.13** Check each amplifier-detector for proper functioning with nonoperate and operate test signals.

#### **G. Trunks**

**3.14** Check that all trunks can be seized, and respond properly to pulsing and start identification signals.

**3.15** In each step-by-step trunk, check function of party registration, and tip party ground removal test.

#### **H. Markers and Decoders**

**3.16** Check each marker or decoder for its ability to handle ANI traffic.

**3.17** Check that each marker can detect tip party registration failure in the ANI trunk.

### **4. CONCENTRATED LOAD TESTS**

#### **A. General**

**4.01** If a trouble ticketer prints a ticket, or if any alarms occur other than all-busy alarms, or if any call fails to complete properly, the trouble should be cleared and sufficient tests made to insure that the trouble has been cleared.

**4.02 Termination of Calls:** Test calls may terminate either in a CAMA office or in test equipment.

#### **B. Outpulser Connector**

**4.03** Simultaneous starts shall be originated one from each trunk subgroup to a single available outpulser. These tests shall be repeated ten times with each outpulser to check the ability of the connector to operate under heavy traffic.

### **5. VOLUME TESTS**

#### **A. Purpose of Test**

**5.01** This test is to provide ways of detecting trouble conditions resulting from interaction between circuits when connections are established over selected lines and trunks with all common control circuits in service and functioning at a high calling rate. The conditions under which the tests shall be applied are described below.

#### **B. General**

**5.02** During these tests, all equipment, including the trouble ticketer, alarms, and traffic registers, shall be in service, except as required to administer the test. Circuits removed from service because of trouble conditions shall be restored as soon as the trouble is cleared.

**5.03** Except for administration of test, all test call originators shall run continuously for at least one work shift per day or the equivalent.

#### **C. Test Setup Requirements**

**5.04** There shall be no plug inserted in the CFTF (cancel first trial failure) jack of trouble ticketer circuit.

**5.05 Test Call Load:** The number of calls originated simultaneously shall be equal to or greater than the number of outpulsers in the identifier group. The call originator of each test setup shall originate calls from a minimum of 50 different subscriber lines.

**5.06 Originating Lines:** Calls shall be originated from lines so that each hundreds group in the number network is used for at least one call.

**5.07 Outgoing Trunks:** Calls shall be directed to all types of outgoing trunks provided in the identifier group and shall be spread over different trunk subgroups.

#### D. Performance Data

**5.08 General:** The following data shall be recorded for use by the operating companies to determine the amount of trouble clearing likely to be required after turnover.

**5.09 Number of Calls:** The total number test calls shall be determined from the registers on the call originators and checked against outputter peg count registers and time-out registers. Special time-out registers are to be provided to count time-outs on trunks failing to connect to an outputter.

**5.10 Identified Calls:** Shall be checked by comparing the registers of the call originator against the number of identified calls shown on the outputter peg count registers.

#### 5.11 Identification Failures

(a) First and second trial failures on the outputter plant registers shall be recorded separately.

(b) First identification attempt failures shown on the identifier registers shall be recorded.

(c) The number of operator identified calls shown on the identifier group register shall be recorded.

**5.12 Found Trouble:** The total number of troubles found in the ANI circuits and in the ANI functions of associated circuits shall be recorded.

#### 6. EXERCISE TESTS

**6.01** Upon completion of the volume tests, the test call originators shall be operated until turnover, troubles found shall be cleared, and all troubles recorded.

#### 7. MODIFICATIONS AND ADDITIONS

**7.01 General:** Before the start of installation, the Western Electric Company shall submit to the telephone company a method of procedure covering the installation and testing of the circuits.

#### 7.02 Additions

(a) All circuits shall meet the requirements specified in Part 2 (Individual Circuits Test Requirements) and Part 3 (Special Test Requirements).

(b) Where sufficient equipment is added, Part 4 (Concentrated Load Test) shall apply.

#### 7.03 Modifications

(a) When circuits are modified, circuit operation tests shall be applied to insure satisfactory operation of all functions of the circuit affected by the modification.

#### 8. RECORDS AND REPORTS

**8.01** A copy of all summary test records and the performance data outlined in 5.08 through 5.12 shall be turned over to the telephone company.