

175
 4-16-76
 9

NO. 3 ESS
 RINGING AND TONE DISTRIBUTION TESTS

CONTENTS

- | | |
|------------------------|---------------------|
| 1. GENERAL INFORMATION | 3. TEST PREPARATION |
| 2. TEST EQUIPMENT | 4. TEST PROCEDURE |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|-------------|--|-------------|------------|--------------------|---|------|--------------------|--|-------------|-----------------|--------------------|---|-----------|----------------|---|----------|---------------------|---|-----------|--|---|----------|-------------------|---|------|---------------|--------|--------|---------|---------|---------|---------|
| <p>1. <u>GENERAL INFORMATION</u></p> <p>1.1 <u>Description</u></p> <p>1.11 This section provides a method for verifying that ringing and tone signals appear at proper locations in a No. 3 ESS office.</p> <p>1.2 <u>Sequence</u></p> <p>1.21 These tests should only be performed after:</p> <p>a) HB 21, Section 399 has been completed.</p> <p>b) The Ringing and Tone cross-connects have been installed.</p> <p>1.3 <u>Records</u></p> <p>1.31 The results of these tests should be recorded on Forms SD-97-1313 and SD-97-1315. Detailed information on completing these forms appears in Handbook 3, Section 6B.</p> <p>1.4 <u>References</u></p> <p>1.41 <u>Ringing and Tone Plant -</u></p> <table border="0"> <tr> <td style="text-align: center;"><u>Document</u></td> <td style="text-align: center;"><u>Title</u></td> </tr> <tr> <td>SD-82255-01</td> <td>Power Systems Ringing, Tone & Signaling Circuits</td> </tr> </table> <p>1.42 <u>Connecting Circuits - Schematics</u> shown in Table A.</p> <p>2. <u>TEST EQUIPMENT</u></p> <p>2.1 <u>Test Set</u></p> <p>2.11 The following test set is required:</p> <table border="0"> <tr> <td style="text-align: center;"><u>Amt.</u></td> <td style="text-align: center;"><u>ITE</u></td> <td style="text-align: center;"><u>Description</u></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">5632</td> <td style="text-align: center;">Digital Multimeter</td> </tr> </table> <p>2.2 <u>Accessory</u></p> <p>2.21 The following accessories are required:</p> | <u>Document</u> | <u>Title</u> | SD-82255-01 | Power Systems Ringing, Tone & Signaling Circuits | <u>Amt.</u> | <u>ITE</u> | <u>Description</u> | 1 | 5632 | Digital Multimeter | <table border="0"> <tr> <td style="text-align: center;"><u>Amt.</u></td> <td style="text-align: center;"><u>Code No.</u></td> <td style="text-align: center;"><u>Description</u></td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">ITE-5477B</td> <td style="text-align: center;">Extender Board</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">ITE-5478</td> <td style="text-align: center;">Adapter, SAF-T-LEED</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">ITE-9169D</td> <td style="text-align: center;">6 in. Test Cord with E-Z Mini-Hook on each end</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">ITE-4631</td> <td style="text-align: center;">Test Receiver Set</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">768A</td> <td style="text-align: center;">Blocking Tool</td> </tr> </table> <p>All accessories are included in ITE-5653, No. 3 ESS Test Accessory Set.</p> <p>3. <u>TEST PREPARATION</u></p> <p>3.1 <u>Description</u></p> <p>3.11 Ringing and Tone interruptions (10, 60, and 120 IPM) are under control of the system program and thus, if the program is not running, these interruptions will not occur.</p> <p>3.12 The following procedures should be performed <u>only</u> if system program is <u>not</u> running during this test:</p> <p>1) Verify the NOR key on the Ringing and Tone Plant Control Panel is depressed.</p> <p>2) Using 768A Blocking Tools, block operate the following relays on the Ringing and Tone Plant:</p> <table border="0"> <tr><td>IN60-0</td></tr> <tr><td>IN60-1</td></tr> <tr><td>IN120-0</td></tr> <tr><td>IN120-1</td></tr> <tr><td>IN10-01</td></tr> <tr><td>IN10-11</td></tr> </table> <p>3.13 The installer should familiarize himself with each tone by listening to it at the Ringing and Tone Plant terminal strips. The following test points may be used:</p> | <u>Amt.</u> | <u>Code No.</u> | <u>Description</u> | 2 | ITE-5477B | Extender Board | 2 | ITE-5478 | Adapter, SAF-T-LEED | 2 | ITE-9169D | 6 in. Test Cord with E-Z Mini-Hook on each end | 1 | ITE-4631 | Test Receiver Set | 6 | 768A | Blocking Tool | IN60-0 | IN60-1 | IN120-0 | IN120-1 | IN10-01 | IN10-11 |
| <u>Document</u> | <u>Title</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SD-82255-01 | Power Systems Ringing, Tone & Signaling Circuits | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Amt.</u> | <u>ITE</u> | <u>Description</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 5632 | Digital Multimeter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Amt.</u> | <u>Code No.</u> | <u>Description</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ITE-5477B | Extender Board | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ITE-5478 | Adapter, SAF-T-LEED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ITE-9169D | 6 in. Test Cord with E-Z Mini-Hook on each end | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | ITE-4631 | Test Receiver Set | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 768A | Blocking Tool | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN60-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN60-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN120-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN120-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN10-01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IN10-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| TONE | TEST POINTS |
|------------------------|---------------|
| Audible Ring | TS(C) 32 & 33 |
| Dial Tone | TS(E) 00 & 10 |
| Busy Tone | TS(H) 27 & 37 |
| Call-Waiting Tone | TS(J) 00 & 10 |
| High Tone | TS(K) 02 & 12 |
| Receiver Off-Hook Tone | TS(L) 00 & 10 |

3.14 Ringing potentials may be checked at the fuse blocks on the Ringing and Tone Plant. (See SD-82255-01, FS 1 and 2.)

3.2 Use of Test Method

3.21 The information required for performing these tests is presented in tabular form in Table A.

3.22 After determining the location of the desired connecting circuit unit shown in Table A, the ITE-5477B Extender Board is inserted into the unit equipment location indicated and the proper signals are checked at the associated test points on the Extender Board.

NOTE: It may be required to remove circuit packs that are adjacent to the Extender Board equipment location in order to allow sufficient clearance for the Extender Board. Replace these circuit packs upon completion of the test for the associated unit.

4. TEST PROCEDURE

4.1 Perform these tests on each unit given in Table A. Use ITE-4631 for checking tones and ITE-5632 for checking voltages.

TABLE A

| FRAME | UNIT | SD- | CIRCUIT PACK | LEAD DESIG | TEST AT | | TONE OR POTENTIAL |
|--------------------------|----------|----------|---|---|----------------|--------------------|---|
| | | | | | UNIT EQL | TERMINALS | |
| CONTROL OR NETWORK | J3H001BF | 3H410-01 | FB358 (02-14) | -ACDC (), RGRD () -TRP (), RGRD () | 02-20 | 004,104 105,104 | 84-88V AC -48V DC |
| | | | FB358 (02-18) | -ACDC (), RGRD () -TRP (), RGRD () | 02-20 | 006,106 107,106 | 84-88V AC -48V DC |
| | | | FB358 (02-22) | -ACDC (), RGRD () -TRP (), RGRD () | 02-20 | 008,108 109,108 | 84-88V AC -48V DC |
| | | | FB367 (02-27) | DT1-(), DR1-() | 02-20 | 000,100 | Dial Tone |
| | | | FB367 (02-33) | DT1-(), DR1-() | 02-20 | 001,101 | Dial Tone |
| | | | FB367 (02-39) | DT1-(), DR1-() | 02-20 | 002,102 | Dial Tone |
| | | | FB367 (02-44) | DT1-(), DR1-() | 02-20 | 003,103 | Dial Tone |
| CONTROL OR MISCELLANEOUS | J3H001CH | 3H411-01 | FB383 (02-03) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 112,012 102,002 | See Office Records for Assignment of Tones Check only those FB383 circuit packs that have tone assignments |
| | | | FB383 (02-07) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 113,013 103,003 | |
| | | | FB383 (02-10) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 114,014 104,004 | |
| | | | FB383 (02-14) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 115,015 105,005 | |
| | | | FB383 (02-18) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 116,016 106,006 | |
| | | | FB383 (02-22) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 117,017 107,007 | |
| | | | FB383 (02-25) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 312,212 302,202 | |
| | | | NOTE: For convenience, use two (2) Extender Boards - Equipment locations 02-27 & 02-32. | | | | |

TABLE A (Cont.)

| FRAME | UNIT | SD- | CIRCUIT PACK | LEAD DESIG | TEST AT | | TONE OR POTENTIAL |
|--|-------------------------|----------|------------------|--|----------------|--|---|
| | | | | | UNIT EQL | TERMINALS | |
| CONTROL OR MISCELLANEOUS (Cont.) | J3H001CH | 3H411-01 | FB383 (02-29) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 313, 213 303, 203 | See Office Records for Assignment of Tones Check only those FB383 circuit packs that have tone assignments |
| | | | FB383 (02-33) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 314, 214 304, 204 | |
| | | | FB383 (02-37) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 315, 215 305, 205 | |
| | | | FB383 (02-40) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 316, 216 306, 206 | |
| | | | FB383 (02-44) | TT0-(), RT0-() TT1-(), RT1-() | 02-32 02-27 | 317, 217 307, 207 | |
| MISCELLANEOUS | J3H001CN | 3H406-01 | FB375 (02-07) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 000,100 001,101 002,102 003,103 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | FB375 (02-14) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 200,300 201,301 202,302 203,303 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | FB375 (02-22) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 005,105 006,106 007,107 008,108 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | FB375 (02-29) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 205,305 206,306 207,307 208,308 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | FB375 (02-37) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 215,315 216,316 217,317 218,318 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | FB375 (02-44) | +ACDC(), RGRD() +TRP(), RGRD() -ACDC(), RGRD() -TRP(), RGRD() | 02-27 | 210,310 211,311 212,312 213,313 | 84-88V AC +48V DC 84-88V AC -48V DC |
| | | | TEST | J3H001DD | 3H520-01 | FB519 (06-25) | T, R(HT)1 T, R(TT)33 |
| FB519 (06-22) | T, R(HT)2 T, R(TT)34 | 02-39 | | | | 115,015 114,014 | High Tone Dial Tone |
| FB514 (02-37) | GEN1, RGRD | 02-39 | | | | 013,111 | -48V DC or 84-88V AC (10 IPM) |
| --- | T, R(ROH)6 | 02-39 | | | | 019,119 | Receiver Off-Hook Tone |
| FB502 (02-18) | T, R(MT1)14 | 06-02 | | | | 309,209 | Call-Waiting Tone |
| FB521 (02-07) | T, R(TT)35 T, R(HT)3 | 06-02 | | | | 308,208 307,207 | Dial Tone High Tone |

TABLE A (Cont.)

| FRAME | UNIT | SD- | CIRCUIT PACK | LEAD DESIG | TEST AT | | TONE OR POTENTIAL |
|---|----------|----------|-----------------|------------------|-------------|------------------------|--|
| | | | | | UNIT EQL | TERMINALS | |
| NETWORK (1-15) (TEST IN SEQUENTIAL ORDER) | J3H001BD | 3H200-01 | FB372 (ALL) | OT,R AT,R | 06-35 | 104,004 105,005 | Busy Tone (120 IPM) Audible Ring Tone |
| <p><u>NOTE:</u> Operate OFF-0 key on the Ringing and Tone Plant Control Panel. This will transfer the load to Plant 1 and cause the RTS relay on the Network Frame Control Panel to operate. Check that the tones are still present at the test points. Operate NOR key on R&T Plant to return the load to Plant 0.</p> | | | | | | | |

4.2 Remove blocking tools from R&T Plant relays, if used.

Manager, ESS Installation & Field Engineering