

NO. 3 ESS
 NETWORK FRAME
 POWER VERIFICATION TESTS

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1. GENERAL INFORMATION

1.1 Description

1.11 This section provides a method of verifying that power with the proper voltages and polarities appears at the No. 3 ESS Network Frame. It also provides a method for verifying the operation of the fuse alarm and converter control circuits.

1.12 The Network Frame is a single bay frame which requires two -48V power feeders (one from each power bus). Each feeder has a dedicated filter at the Network Frame.

1.13 -48V power is supplied directly from the Power Frame distribution fuse board.

1.14 Battery Boost voltage for the Junctor and Customer Dial Pulse Receiver (CDPR) and Regular Ringing Circuits equipped on the Network Frame is provided from converters in the Junctor and Junctor Control Unit. The battery boost voltage is fed to the Junctor and CDPR and Reg Ring Circuits through fuses on the Network Frame fuse panel.

NOTE: Network Frame 1 also supplies battery boost voltage to the CDPR and Reg Ring Circuits on Control Frame 0.

1.2 Sequence

1.21 Refer to Handbook 269, Section 1 for test sequence information.

1.22 The -48V Power Plant must be operational prior to the performance of this test. Handbook 21, Section 211 provides test procedures for the 151A Power Plant.

1.23 This section should be applied to Network Frame 1 prior to performing Control Frame Power Verification Tests on Control Frame 0 per Handbook 269, Section 160. This will ensure the presence of the battery boost voltage at the Control Frame.

1.24 This section must be applied before Peripheral Diagnostic Test Procedures (Handbook 269, Section 300) can be initiated.

1.3 References

1.31 The following documents will be useful as references during the performance of this test:

<u>Document</u>	<u>Title</u>
SD-3H200-01	Junctor and Junctor Control Circuit
SD-3H901-01	Network Frame Circuit
SD-3H907-01	DC Power Distribution Circuit
SD-82250-01	Battery Boost Converter Circuit

1.4 Records

1.41 The results of these tests should be recorded on forms SD-97-1313 and SD-97-1315. Information regarding the completion of these forms appears in Handbook 3, Section 6B.

2. TEST EQUIPMENT

2.1 Test Sets

2.11 The following test sets will be required for the performance of these tests:

<u>Amt.</u>	<u>ITE</u>	<u>Description</u>
1	4659	Volt-Ohm-Milliammeter
1	5632	Digital Multimeter

2.2 Accessories

2.21 The following accessories are required for the performance of these tests:

<u>Amt.</u>	<u>ITE</u>	<u>Description</u>	<u>With ITE</u>
1	4715	Capacitor Forming Tool	*5543
1	5590	70 Type Fuse Alarm Verification Test Set	*5543

* 3ACC/Auxiliary Processor Test Accessory Set

3. TEST PREPARATION

- 3.1 Remove the base covers from the Network Frame.
- 3.2 At the Power Frame, remove all -48V fuses supplying the Network Frame.
- 3.3 Operate the CONV A OFF and CONV B OFF keys to the "IN" operated position.
- 3.4 At the Network Frame, remove all distributing fuses from the fuse panel.

NOTE: Paragraph 3.5 applies only when testing Network Frame 1.

- 3.5 At Control Frame 0, remove all BAT BOOST A and B fuses from Bay 0 fuse panel.

4. TEST PROCEDURE

4.1 False Ground Check

- 4.11 Set up ITE-4659 Volt-Ohm-Milliammeter for resistance measurement on the X1 scale.

4.12 At the Power Frame, measure the resistance between the ground bus at the rear of the Power Frame and the load terminal of the -48V Bus A fuse supplying the Network Frame by connecting the positive meter lead to the ground bus and the negative lead to the load terminal.

4.13 This resistance should read infinite ohms after the plates of the electrolytic capacitor have formed.

4.14 Repeat paragraphs 4.12 and 4.13 for the -48V Bus B fuse supplying the Network Frame.

4.2 -48V Distribution

4.21 At the Power Frame, insert ITE-4715 Capacitor Forming Tool in the alarm fuse socket of the -48V Bus A (15 Amp) fuse supplying the Network Frame. Leave the tool in the socket until the lamp extinguishes indicating the filter capacitor is fully charged.

4.22 Replace the -48V Bus A (15 Amp) fuse supplying the Network Frame.

4.23 At the Network Frame, measure the voltage between the terminals of filter capacitor C2 (-48A) located at the bottom of the Network Frame. This voltage should read between -42.75 and -52.5 volts DC.

4.24 At the Power Frame, insert ITE-4715 Capacitor Forming Tool in the alarm fuse socket of the -48V Bus B (15 Amp) fuse supplying the Network Frame. Leave the tool in the socket until the lamp extinguishes indicating the filter capacitor is fully charged.

4.25 Replace the -48V Bus A (15 Amp) fuse supplying the Network Frame.

4.26 At the Network Frame, measure the voltage between the terminals of filter capacitor C1 (-48B) located at the bottom of the Network Frame. This voltage should read between -42.75 and -52.5 volts DC.

4.3 Fuse Alarm Circuit Check

4.31 Replace the MC (P48VA) fuse in the Network Frame fuse panel and verify the CONV A and CONV B lamps are lit.

4.32 Insert ITE-5590, 70 Type Fuse Alarm Verification Test Set into fuse position OA2 (P48VB) and verify relay FAA on the Control Panel is operated and the FA lamp on the fuse panel is lit.

4.33 Remove ITE-5590 and verify the FAA relay is released and the FA lamp is extinguished.

4.34 Repeat paragraphs 4.32 and 4.33 for the following fuse positions:

1A2	(P48VB)
OB3	(")
OA0	(P48VA)
1A0	(")

4.35 Repeat paragraphs 4.32 and 4.33 for the following fuse positions observing the FAB relay:

SPD5	(P48VB)
SPD7	(")
SPD4	(P48VA)
SPD6	(")
TT1	(P48FB)
TT3	(")
TT0	(P48FA)
TT2	(")

4.36 Replace all P48VA, P48VB, P48FA, and P48FB fuses in the Network Frame fuse panel. Do not replace any PBB0 or PBB1 fuses at this time.

4.37 Insert ITE-5590 into fuse position BCDO (PBB0) and verify FA lamp is lit.

4.38 Repeat 4.37 for fuse positions BCD2 (PBB0), BCD1 (PBB1) and BCD3 (PBB1). Remove ITE-5590.

4.39 Replace all PBB0 and PBB1 fuses in the Network Frame fuse panel.

→ 4.4 Battery Boost Converters Check

4.41 Release the CONV A OFF key and verify the lamp within the key is extinguished.

4.42 Using ITE-5632 Digital Multimeter, measure the voltage at fuse post of fuse BCDO (PBB0). This voltage should read between -53.85 and -55.35 volts DC.

4.43 Leave the voltmeter connected at the fuse post and operate the CONV A OFF key. Verify the reading drops to the normal -48V office potential.

4.44 Release the CONV B OFF key and verify the lamp within the key is extinguished.

4.45 Measure the voltage at fuse post of fuse BCD1 (PBB1). This voltage should read between -53.85 and -55.35 volts DC.

4.46 Leave the voltmeter connected at the fuse post and operate the CONV B OFF key. Verify the reading drops to the normal -48V office potential.

4.47 Release the CONV A OFF and CONV B OFF keys and verify the lamp within each key is extinguished.

→ Arrows indicate new or changed information.

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Reason for Reissue:
To reorganize test procedure.