g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-331X411A**

Test Procedure for an assembly

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PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
G. Chandler			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
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1. SCOPE

1.1 This is a functional testing procedure for a Card.

2. STANDARDS OF QUALITY

2.1 Refer to the current revision of the IPC-A-610 standard for workmanship standards.

3. APPLICABLE DOCUMENTS

3.1 The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.
3.1.1 Check board's electronic folder for more information

4. ENGINEERING REQUIREMENTS

4.1 Equipment Cleaning
4.1.1 Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to site specific SRA's for cleaning guidelines.
4.2 Equipment Inspection
4.2.1 Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
4.2.1.1 Wires - broken, cracked, or loosely connected
4.2.1.2 Terminal strips / connectors - broken or cracked
4.2.1.3 Components - visually damaged
4.2.1.4 Capacitors - bloated or leaking
4.2.1.5 Solder joints - damaged or cold
4.2.1.6 Circuit board - burned or de-laminated
4.2.1.7 Printed wire runs / Traces - burned or damaged

5. EQUIPMENT REQUIRED

5.1 The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

Qty	Reference #	Description
1		Fluke 87 DMM (or Equivalent)
1	H188829	Light bulb load
1		SCR firing box
1		Oscope w/X100 probes
1		20V power supply

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6. Modifications/Upgrades

6.1 Fill out if applicable.

7. Testing Process

7.1 Setup

7.1.1 Test SCRs on scientific SCR tested. If replacing the SCRs with new ones, it's easer to test them before they are installed in the unit.

7.1.2 With a capacitance meter, measure between the M buss and the N buss. Capacitance should measure 92uf +/- 10%.

7.1.3 Component test the snubber assembly.

7.1.4 Connect one side of 120vac to buss M.

7.1.5 Connect the other side of the 120vac to one side of the light bulb load.

7.1.6 Connect the other side of the light bulb load to the POS (P11) buss.

7.1.7 Connect an oscope set in the deferential mode, using X100 probes, across the light bulb load. Set scope at .5V per/div and 5ms per/div.

7.1.8 DO NOT apply power at this time.

7.1.9 Connect +20vdc to pin 1 of the plug PL connect com. to pin 3.

7.1.10 Connect POS non-isolated output of the SCR firing box to pin 2 of plug PL.

7.1.11 Connect the COM. of the SCR firing box to the COM. of the 20V power supply.

7.1.12

7.2 Testing ISP and associated circuitry

7.2.1 Apply 120Vac to the unit.

7.2.2 At this time you will observe an approx. 160V half-wave pulse displayed on the scope.

7.2.3 Apply power to the SCR firing box and vary its output.

7.2.4 With the firing box, you can control the other half of the pulse displayed on the scope and with the firing box at full output you should observe a full wave approx.320V P/P pulse.

7.2.5 Remove power and move the lead that's connected to the POS buss to the NEG (P2) buss.

7.2.6 Move the +20v from pin 1 of PL to pin 5 of PL and the COM from pin 3 of PL to pin 7 of PL.

7.2.7 Move the firing box output from pin 2 of PL to pin 6 of PL.

7.2.8 Repeat the previous steps used to test the ISP circuitry to test the ISN circuitry.

7.2.9 Remove power.

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7.2.10 Move the lead connected to the M buss to the N buss.

7.2.11 Move the +20V connected to pin 5 of PL to pin 26 of PL and COM connected to pin 7 to pin 28.

7.2.12 Move the firing box output connected to pin 6 to pin 27 of PL.

7.2.13 Repeat the steps used to test the ISP and ISN circuits to test the CSN circuitry except with no firing box signal applied there will be no signal displayed on the scope and with the firing box at full output there will only be a half-wave signal displayed on the scope.

7.2.14 Remove power.

7.2.15 Move the lead connect to the NEG buss to the POS buss.

7.2.16 Move the +20v lead connected to pin 26 of PL to pin 22 of PL and the COM lead connected to pin 27 to pin 24.

7.2.17 Move the firing box output lead connected to pin 27 to pin 23.

7.2.18 Repeat the process used to test the CSN circuit to test the CSP circuitry.

7.2.19 Remove all power and connections from the UUT.

7.2.20 Connect an ohmmeter between pins 13 and 14 of the PL connector. Check for approx. 6 ohms.

7.2.21 Connect an ohmmeter between pins 19 and 20 of the PL connector. Check for approx. 10.5 ohms.

7.2.22 Connect an ohmmeter between connector J1 and J2 of the CF board. Check for approx. 20 ohms.

7.2.23 Check for continuity between lose wire NX to buss N.

7.3 ***TEST COMPLETE ***

8. Notes

8.1 None at this time.

9. Attachments

9.1 None at this time.

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