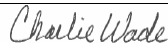
 <div style="float: right;">GE Energy</div>		Functional Testing Specification	
<i>Parts & Repair Operations Louisville, KY</i>		LOU-GED-IS200EPCT-F	
Test Procedure for an EX2100 Exciter Pulse Current Transformer Card			
DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column			
REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Frank Howard	05-17-2007
B	Added a step, clarified a step, added text fixture ID #, added tip about Fluke meters,	John Madden	5/22/2007
C	More simplification and clarification	John Madden	6/28/2007
D	Modified load resistor and output voltage readings in step 6.2.6	Roger Johnson	8/15/2007
E	Modified test equipment and voltage readings in step 6.2.6 and 6.2.8	Jill Hardin	9/20/2012
F	Modified test procedure to correspond with new test fixture. Fixture (H190057) was built to enhance card's test and provide additional safety to technician.	Jeff Barton	1/2/2013
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PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Frank Howard	John Madden	J. Hardin	
DATE	DATE	DATE	DATE
May 17, 2007	May 22, 2007	9/20/2012	16 Aug 2007

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1. SCOPE

1.1 This is a functional testing procedure for an IS200EPCTG# Exciter Pulse Current X-former 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 N:\Design Folders\IS2\IS200E\EPCT

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 the local documented procedures 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
2		Fluke 87 DMM (or Equivalent)
1		0-120Vac Variac
1		+/-0-60VDC Power Supply
1	H190057	IS200EPCT Test Fixture
1		10 Ohm / 200W Resistive Load

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6. TESTING PROCESS

6.1 Setup

6.1.1 Install UUT on test fixture with TB1, TB2/TB3 and J305/308/315 DIN connector on J305.

6.1.2 Set jumper JP1 to Volts.

6.2 Testing Procedure

6.2.1 Input ~30VDC to labeled banana plugs on back of test fixture (does NOT matter polarity). Check for 30VDC across test pins 14/15 on fixture which correspond to **all pins** of M1 (J305), M2 (J308) and C (J315) by moving DIN connector to each designated connector.

6.2.2 Reverse polarity of input and pin 14/15 should follow. This is to verify that the transient suppression diodes won't short out below their rated voltage. You could take this voltage higher, but stay below 62 Vdc in either direction.

6.2.3 Move DIN connector back to M1 (J305).

6.2.4 Connect DMM to test pins **5/6** on fixture.

6.2.5 Plug 120Vac into **AC Plug 1**. Meter should read ~1.6VRMS.

6.2.6 Move DIN connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~1.6VRMS.

6.2.7 Remove AC supply from Test Fixture.

6.2.8 Move DIN connector back to M1 (J305).

6.2.9 Connect DMM to test pins **7/20** on fixture.

6.2.10 Plug 120Vac into **AC Plug 2**. Meter should read ~1.6VRMS.

6.2.11 Move DIN connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~1.6VRMS.

6.2.12 Remove AC supply from Test Fixture.

6.2.13 Move DIN connector back to M1 (J305).

6.2.14 Connect DMM to test pins **18/19** on fixture.

6.2.15 Plug 120Vac into **AC Plug 3**. Meter should read ~1.6VRMS.

6.2.16 Move DIN connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~1.6VRMS.

6.2.17 Remove AC supply from Test Fixture.

6.2.18 Move DIN connector back to M1 (J305),

6.2.19 Connect DMM to test pins **16/17** on fixture.

6.2.20 Plug 120Vac into **AC Plug 4**. Meter should read ~1.6VRMS.

- 6.2.21 Move DIN connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~1.6VRMS.
- 6.2.22 Remove AC supply from Test Fixture.
- 6.2.23 Connect a 10-ohm 200W resistive load to banana plugs on back of test fixture.
- 6.2.24 Connect DMM1 to 5 AMP AC METER banana plugs on front of test fixture and set for reading AMPS.
- 6.2.25 Plug OUTPUT of VARIAC into **AC PLUG 5**.



Note: For the remaining steps, if using a Fluke 85 or 87 meter, be sure to push the blue button to get the meter to switch from it's default of DC Amps to AC Amps. If you don't do this, the meter will read 0.0 amps, even though AC current is definitely flowing through it. This isn't a problem on the Fluke 77 or 189 meters since their selector switches have separate positions for AC and DC current. **That little detail took us the better part of an afternoon to figure out since we so rarely use this particular function of the Fluke 85 & 87 meters.**

- 6.2.26 Power on VARIAC and increase AC Variac supply until you see 5 amps on the DMM1.
- 6.2.27 Move DIN connector to M1 (J305).
- 6.2.28 Connect DMM2 to test pins **1/2** and set the meter to read **mVAC** on test fixture. Meter should read ~=>250mVRMS. Move DIN test connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>250mVRMS.
- 6.2.29 Increase until 8 amps show on the DMM1. **DO NOT EXCEED 10 AMPS or Test Fixture fuses will Blow!**
- 6.2.30 Move DIN test connector to M1 (J305), M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should read ~=>400mVRMS.
- 6.2.31 Decrease voltage on VARIAC back to 5 amps on DMM1.
- 6.2.32 Remove AC supply from Test Fixture.
- 6.2.33 Plug OUTPUT of VARIAC into **AC PLUG 6**.
- 6.2.34 Power on VARIAC and increase AC Variac supply until you see 5 amps on the DMM1.
- 6.2.35 Move DIN connector to M1 (J305).
- 6.2.36 Connect DMM2 to test pins **3/4** and set the meter to read **mVAC** on test fixture. Meter should read ~=>250mVRMS. Move DIN test connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>250mVRMS.
- 6.2.37 Remove AC supply from Test Fixture.

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6.2.38 Increase until 8 amps show on the DMM1. **DO NOT EXCEED 10 AMPS or Test Fixture fuses will Blow!**

6.2.39 Move DIN test connector M1 (J305), M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>400mVRMS.

6.2.40 Remove AC supply from Test Fixture.

6.2.41 Connect DMM1 to 1 AMP AC METER banana plugs on front of test fixture and set for reading AMPS.

6.2.42 Plug OUTPUT of VARIAC into **AC PLUG 7**.

6.2.43 Power on VARIAC and increase AC Variac supply until you see 1 amp on the DMM1.

6.2.44 Move DIN connector back to M1 (J305).

6.2.45 Connect DMM2 back to test pins **1/2** and set the meter to read **mVAC** on test fixture. Meter should read ~=>250mVRMS.

6.2.46 Move DIN test connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>250mVRMS.

6.2.47 Remove AC supply from Test Fixture.

6.2.48 Increase until 2 amps show on the DMM1. **DO NOT EXCEED 3 AMPS or Test Fixture fuses will Blow!**

6.2.49 Move DIN test connector back M1 (J305), M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>400mVRMS.

6.2.50 Remove AC supply from Test Fixture.

6.2.51 Plug OUTPUT of VARIAC into **AC PLUG 8**.

6.2.52 Power on VARIAC and increase AC Variac supply until you see 1 amp on the DMM1.

6.2.53 Move DIN connector back to M1 (J305).

6.2.54 Connect DMM2 back to test pins **1/2** and set the meter to read **mVAC** on test fixture. Meter should read ~=>250mVRMS.

6.2.55 Move DIN test connector to M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>250mVRMS.

6.2.56 Increase until 2 amps show on the DMM1. **DO NOT EXCEED 3 AMPS or Test Fixture fuses will Blow!**

6.2.57 Move DIN test connector back to M1 (J305), M2 (J308) and C (J315) by moving DIN connector to each designated connector and they should also read ~=>400mVRMS.

6.2.58 Remove AC supply from Test Fixture.

6.3 *TEST COMPLETE *****

7. **NOTES**

7.1 Note at this time.

8. **ATTACHMENTS**

8.1 Below is a picture of the new test fixture H190057.

