g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-DS200TCPAG1A**

Test Procedure for a TCPA

DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	JBARTON	12/4/2014
B	New Cimplicty Screen	JBARTON	12/10/15
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
JBARTON			
DATE	**DATE**	**DATE**	**DATE**
12/4/2014			

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		SM1 HMI
1		MKV SIMPLEX STEAM PANEL
1		DMM

6. Modifications/Upgrades

6.1 Fill out if applicable.

7. Testing Process

7.1 Setup

7.1.1 Remove power to PLU core

7.1.2 Remove the test card from the PLU Core in location X

7.1.3 Install the DS200DCPAG1A card to the UUT

7.1.4 Install the 4 PROM's from the test card

7.1.5 Set all jumpers to match test card

7.1.6 Install UUT and attach ALL related ribbon cables and power connection and IONET

7.1.7 Power back up PLU core

7.1.8 Reset R to obtain A7 status

7.1.9

Note:

7.2 Testing Procedure

7.2.1 Using DMM verify: COM located next to PROM's and crystal

7.2.1.1 5VDC located just above COM

7.2.1.1.1 If not 5VDC, adjust pot RV1 to within +5.05Vdc - regulated

7.2.1.1.2 Verify +15VDC +/- 10% (located top left corner) - regulated

7.2.1.1.3 Verify -15VDC +/- 10% (located top left corner) - regulated

7.2.1.1.4 Verify +24VDC +/- 20% (located top left corner) – NOT regulated

7.2.1.1.5 Verify -24VDC +/- 20% (located top left corner) – NOT regulated

7.2.2 Open up TCPA Test screen on ST1 HMI

7.2.2.1 Verify All I/O are ~ equal in values

7.2.2.2

7.2.3 Using DiagC Screen: Locate the <R> TCPA

7.2.3.1 Verify TCPA Power Supply screen reads correct voltages.

7.2.3.2 Verify the PROX 1-10 are all functioning and equal in value

7.2.3.2.1 (Attach screenshot)

7.2.3.3 Verify the PROX 11-10 are all functioning and equal in value

7.2.3.3.1 (See above)

7.2.3.4 Same screen verify the 4 mA

7.2.3.4.1 (See above)

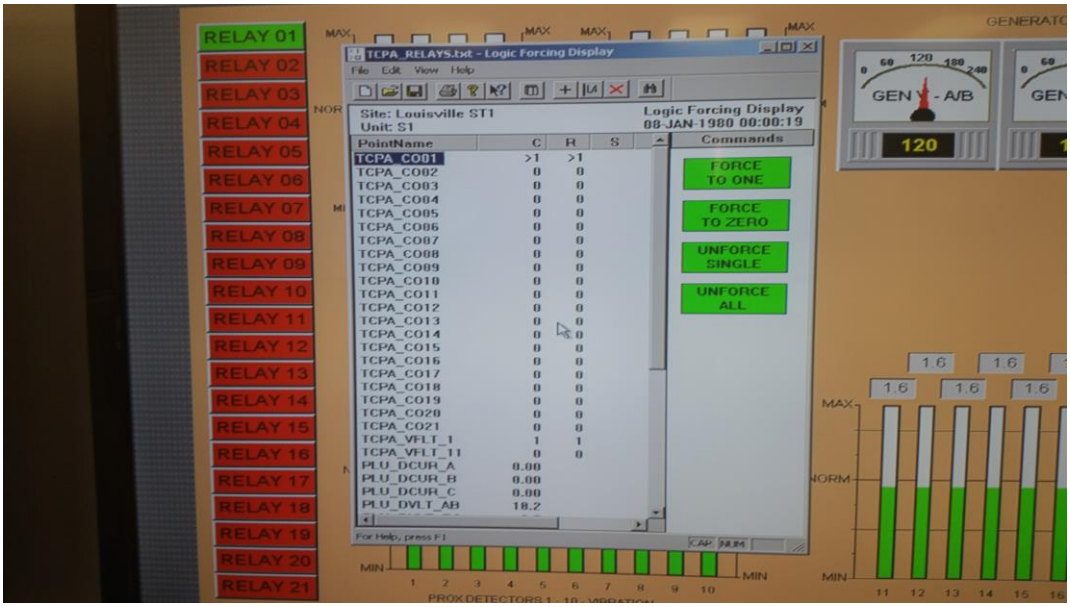
7.2.4 Open the Logic Forcing Program

7.2.4.1 Open the TCPA_RELAY_TEST In the F:\Unit1\TCPA directory

7.2.4.1.1 (attach screenshot)

7.2.5 Force the TCPACO01 signal to 1 and verify the relay engages and RELAY1 illuminates

7.2.5.1



7.2.5.2 Force TCPACO01 signal back to 0 and verify the relay disengages and LED goes out

7.2.6 Continue this throughout the list ending in TCPACO21

Note: Some RELAY's are set for a delay in the I/O Config. This may be set for 1 second or 5 seconds.

7.3 Select the UN-FORCE ALL Button and verify ALL are at 0 with < > removed from signal designation

7.4 Post Testing Burn-in **Required** **__x_ Yes** **___ No**

Note: All MARK I, II, & III Nuclear Turbine related cards require a post testing burn-in of 100 hours.

7.5 ***TEST COMPLETE *

8. Notes

8.1 None at this time?

9. Attachments

9.1 None at this time?