1. INTRODUCTORY DESCRIPTION

A. This procedure establishes the methods for testing a 145D4738G1 Trip Test Card.
B. Environmental ranges: 70 +/- 10 Deg. F. with 20-75% R.H.
C. Unit warm-up/stabilization period requirement: None
D. Personnel using this procedure are expected to have a high degree of confidence and expertise in related testing and calibration procedures.
E. Procedures not explained here are considered to be understood as common practice.

2. TEST EQUIPMENT VERIFICATION

A. Verify the accuracy of the standard(s) used in the repair/calibration process by evidence of recent calibration labeling affixed to the test equipment.
B. All measurement standards used in this procedure shall be traceable to the NATIONAL INSTITUTE of STANDARDS and TECHNOLOGY (N.I.S.T.) and shall have the accuracy, stability, range and resolution required for the intended use.
C. Unless otherwise specified, the collective uncertainty of the Measurement Standard(s) shall not exceed twenty five percent of the acceptable tolerance for each characteristic being calibrated.
D. All deviations shall be documented.

3. EQUIPMENT CLEANING

A. All equipment clean will be performed as instructed in the GE Renewal Services SOP Sec. 14.0

4. EQUIPMENT INSPECTION

A. The following criteria should be used as a guideline or basis for the inspection process of the this unit:
    1. Wires broken or cracked.
    2. Terminal strips / connectors broken or cracked.
    3. Loose wires.
    4. Components visually damaged.
    5. Capacitors leaking.
    6. Solder joint, cold or otherwise inadequate.
    7. Circuit board discolored or burned.
    8. Printed wire runs burned or damaged.

5. REVISION HISTORY

Revision	Date	Reason for Revision
A	4/12/01	Initial Procedure – After Verification
B	06/10/02	Changed Procedure number to match standard.
C		
D		
E		
F		
G		
H		
I		
J		
K		

6. REFERENCE DOCUMENTATION

- Reference: GEK
- Factory Procedure # P3K-AL-0624-A01

7. THEORY OF OPERATION

- Reference: GEK
- This board is divided up into 3 separate circuits and each circuit has 3 channels. The first circuit is the initiation logic. The second is the 125V half of the contacts and the third is the 24V half of the contacts.

8. TEST EQUIPMENT TO BE USED

- Power supplies 24V DC and 125V DC.
- Digital Multimeter (fluke 85 or equivalent)
- Rainbow box with turbine card adapter box.
- 24 ohm 25 watt resistor.

9. FINAL TEST AND OPERATION PROCESS

- Connect +24 VDC to pin 38 com to pin 40. Note that ds-1 lights to indicate 5 volts. Measure pin 35 and/or IC1 pin 2 for +5 VDC +/- .4v.
- Connect +24 VDC to pin 23 (jump pin 38 to pin 23) Measure 24 V (-2 diode drops) at pins 32, 4, 2, 36, 28, 5.
- Connect +125 VDC to pins 33 and pin 11 and 125V com to pin 31 and pin 7.

- Reset all latch relays by momentarily connecting pin 9 to pin 38 (+24V). Apply 24V to specified input pins 1 = +24V 0 = com(pin 40) per the following table and measure the outputs on the pins indicated.

Input Pins				Output Pins				Relay Energized
16	27	26		18	20	17		
1	0	0		1	0	0		K1
0	1	0		0	1	0		K2
0	0	1		0	0	1		K3

- Remove jumper from +24V to pin 23 and reset all latch relays by momentarily connecting +24V to pin 9 after removing all inputs from 16, 27, 26.
- Connect +125VDC to pin 33 and 125V com to pin 7. Use jumper leads to connect the pins on the left of the table and check output pins for +24V (-diode drops). (1 = +23.4V 0 = +1.4V)

Jumper Pins		Output Pins					
		32	2	28	25	24	15
33, 31		0	0	0	1	1	1
7, 11		0	0	0	1	1	1
33, 31 7, 11		1	0	0	0	1	1

- Momentarily short +24V to pin 9, then continue:

11,3		0	0	0	1	1	1
11, 31, 33		0	1	0	1	0	1

- Momentarily short +24V to pin 9 then continue:

7, 11, 31		0	0	1	1	1	0

- Remove 125V supply and jumpers.
- Measure pin 22 =+ 24V and pin 36 = 0 (1.3V).
- Connect pin 34 to +24V (pin38). Ground pin 30 through a 24 ohm 25 watt resistor. Pin 36 = 24V and pin 22 goes to ov (1.3V). Remove connections.
- Measure pin 21 = 24V and pin 4 = 0 (1.3V). Connect pin 30 to 24V (pin38) ground 3Y through a 24 ohm 25 watt resistor. Pin 4 = 24V and pin 21 = 0 (1.3V). Remove connections.
- Measure pin 14 = 24V and pin 5 = 0 (1.3V). Connect pin 3 to +24V and ground pin 29 through a 24 ohm 25 watt resistor. Pin 5 =+24V and Pin 14 = 0 (1.3V). Remove all connections.

END OF TEST

10. SPECIAL INFORMATION

TEST WRITTEN BY: **Dan Laemmle** **DATE:** 1-4-00

TEST VERIFIED BY: _____ **DATE:**