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

Test Procedure for SUP Printed Circuit Board used on a 1050HL Control

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1. SCOPE

1.1 This is a Functional test procedure for 1050HL 44A294501-G01 thru G05 SUP1-5 Printed Circuit Board.

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** GEK-71692A
- **3.1.2** GEK-71740

4. ENGINEERING REQUIREMENTS

4.1 Description
- **4.1.1** The 1050 Control is a solid-state, integrated circuit controller/processor system using LSI circuits for data processing and control. The static logic circuits are arranged on modular, plug in, printed circuit boards, clearly identified by type. The circuit boards are mounted with functional grouping. In addition, a board identification number marks each rack slot. The SUP is the Control's Supervisor Board.

4.2 Equipment Cleaning
- **4.2.1** 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.

4.3 Equipment Inspection
- **4.3.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
  - **4.3.1.1** Wires - broken, cracked, or loosely connected
  - **4.3.1.2** Terminal strips / connectors - broken or cracked
  - **4.3.1.3** Components - visually damaged
  - **4.3.1.4** Capacitors - bloated or leaking
  - **4.3.1.5** Solder joints - damaged or cold
  - **4.3.1.6** Circuit board - burned or de-laminated
  - **4.3.1.7** 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	1050HL Control	Control with axis cart

6. TESTING PROCESS

6.1 Setup

6.1.1 The SUP board does not have its own specific software diagnostics. Therefore operating the diagnostics for the other boards in the system tests this board.

6.2 Testing Procedure

6.2.1 Diagnostic Test

6.2.1.1 Remove the test SUPx board from slot 6 and insert the board to be tested.

6.2.1.2 Special Mode Switch should be on (UP).

6.2.1.3 Press "ON".

6.2.1.4 "00" or "20" should appear in the message display and "?" in the alphanumeric display.

6.2.1.5 Press "P4", "1", and "ENTER". This instructs the control to read from the resident diagnostics boards.

6.2.1.6 A "T" will appear in the alpha display. Press "R", "ENTER" this instructs the control to run all of the software diagnostics.

6.2.1.7 Observe message display for error codes

6.2.1.8 If there is no errors proceed. Depress "DELETE BLOCK"

6.2.1.9 Press "P3"

6.2.1.10 At line 00 reads “0050054” the MSD is loaded. If not load the MSD, note press up arrow to increment to next line down arrow to decrement to previous line. Key in Data then “enter” then up arrow to next line.

Line #	DATA
00	00500054
01	02000000
02	20202020
03	20202020
04	06060808
05	99991500
06	00000000
07	00000000
08	15001500
09	15001500

6.2.2 **Part Program Test**

6.2.3 TURN OFF CONTROL

6.2.4 Special Mode Switch should be on (down)

6.2.5 **TURN ON CONTROL**

6.2.6 Go to TOOL OFFSETS Press up arrow key in “X” 00.00 “ENTER, “Z” 00.00.

6.2.7 Go to PROGRAM and load in Part Program.

Program Line	Information
00010	G90 X15 Z-5 F100
00020	G04 X5
00030	X-5 Z15
00040	G04 X5
00050	X0 Z0
00060	G04 X5
00070	G25 P1 0010 P2 0060 P3 100
00080	M30

6.2.8 TURN Control OFF - ON

6.2.9 TURN ON AXIS CART

6.2.10 Select AUTO, Press "ON" "CYCLE START"

6.2.11 Program will start running X and Z Axis.

6.2.12 After Program in finished Trun OFF AXIS Cart and Control. Remove SUP Board replaced Master Board.

6.3 ***TEST COMPLETE ***

7. NOTES

7.1 None at this time

8. ATTACHMENTS

8.1 None at this time