Portable Tools Inspection for TFC Maintenance

Changes “Other Than Inconsequential” Require These Additional Reviews:

222-S Laboratory

USQ # GCX-2

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tr>
<td>J-5</td>
<td>01/25/2017</td>
<td>Periodic Review</td>
<td>Inconsequential Change to Record Section</td>
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<td>J-4</td>
<td>03/02/2016</td>
<td>Maintenance Request</td>
<td>Added section 2.1.2</td>
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<tr>
<td>J-3</td>
<td>12/09/2015</td>
<td>Maintenance Request</td>
<td>Removed &quot;Perform Repairs/Electrical Grounding Inspection before Use Tags&quot; from sections 4.1, 5.1.4, 5.2 Note, &amp; 5.3.1.2. Updated image of Out of Service Tag on Attachment 1.</td>
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<tr>
<td>J-2</td>
<td>09/28/2015</td>
<td>Maintenance Request</td>
<td>Added new section 5.2, modified 1.2, 2.0, 4.1, 5.1, 5.3 added new attachment.</td>
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<td>J-1</td>
<td>11/06/2014</td>
<td>CHAMPS Removal</td>
<td>Removed reference to CHAMPS, updated records statements and removed next periodic review date.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a method to perform safety inspections on portable electric tools.

1.2 Scope

This procedure applies to safety inspection of portable electric tools at 120 volts or greater.

2.0 INFORMATION

2.1 General Information

2.1.1 Requirements for inspecting, testing, maintaining, and controlling portable electric tools needed to support maintenance activities are controlled by TFC-OPS-MAINT-C-03.

2.1.2 Tools to be inspected will include but are not limited to:

- Drill Motors
- Porta Band
- Skill Saws etc.
- Cord and plug connected equipment that performs a mechanical function with user interaction.

2.1.3 Inspection for the next quarter are allowed to occur during the last month of each quarter: tools shall not be used unless it has been inspected for current quarter.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Use extreme caution and comply with DOE–0359, Hanford Site Electrical Safety Program.

3.2 Radiation and Contamination control

3.2.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Biddle Model 235303 tool & appliance tester or equivalent
- Quarterly Inspection Tags per DOE-0359 (See Attachment 1)
- Out of Service tag (See Attachment 1)
- Lightning Bolt Hole Punch (See Attachment 1)
5.0 PROCEDURE

5.1 Instructions for Portable Tools and Equipment

NOTE - A portable electric tool record sheet will be kept in a records book which will be retained in the electric shop, tool crib, or work control process.

- New portable electric tools must be inspected prior to use. A shop number will be issued and attached, and added to the Portable Electric Tool Record Sheet.

- Portable electric tools that are no longer serviceable and cannot be repaired must be tagged, and the Portable Electric Tool Record Sheet filled out to reflect Date out of Service, and Disposition.

5.1.1 ENSURE each tool is identified with a shop tool number on the tool.

5.1.2 CHECK electrical cord, plug, and switches for defective insulation, contact(s), and loose terminations.

5.1.3 WHEN performing AC leak test, DON voltage rated gloves while testing Biddle Model 235303.

NOTE - Most metal cased electrical tools are furnished with a three wire power cord. The continuity test is performed to verify the quality of the ground wire in this power cord.

- Line voltage leakage tests are conducted by operating the product at its normal operating voltage, but with the ground wire open. A small milliamp meter is then connected between any exposed metal parts of the tool and ground.

5.1.4 IF repairs are necessary, APPLY “Out of Service” tag.

5.1.5 PERFORM the following tests, for tools being tested (See section 5.2 for Biddle Model 235303):

- Ground Conductor Continuity
- Line voltage leakage test
- Functional test.
5.2 **Biddle Tool Tester**

**NOTE** - If a tool fails to pass tool testing requirements, apply an “Out of Service” tag.

**Tester Pre-check Prior to starting work**

5.2.1 **SET** Test Mode switch to **OFF**

5.2.1 **INSPECT** Biddle Tester for any signs of physical damage

5.2.2 **PLUG** in the Biddle

5.2.3 **VERIFY** Tester grounded light is lit

**Tool Setup**

5.2.4 **INSPECT** the portable tool for any signs of physical damage

5.2.5 **ENSURE** Test Mode switch to **OFF**

5.2.6 **PLACE** portable tool on metal pad with the return cord connected to the plate or connect the return cord directly to metal part of the tool.

5.2.7 **ENSURE** Ground Check/Bypass is set as

5.2.7.1 For grounded tools (3 prong outlet) set to Ground Check

5.2.7.2 For double insulated tools (2 prong) set to Bypass

5.2.8 **PLUG** portable tool into Biddle Tester and perform the following tests.

**NOTE** - Double insulated tools are not grounded and therefore ground check test is not performed on them.

**Ground Check**

5.2.9 **SET** Test Mode switch to Ground Check position

5.2.10 **VERIFY** good when lit light is on (Passing this test is required for additional test, only use bypass switch for double insulated tools).
5.2 Biddle Tool Tester (Cont.)

Leakage Test

5.2.11 SET Test Mode switch to Leakage position

5.2.12 TEST the Biddle by pressing the Meter Check button to confirm reading of 0.1mA “meter check” on the Leakage Test window

5.2.13 SET Supply Neutral switch to OPEN

5.2.14 SET Supply Y Polarity to REV and check reading for < 0.5mA

5.2.15 SET Supply Y Polarity to NORM and check reading for < 0.5mA

5.2.16 SET Supply Neutral switch to CLOSED

5.2.17 SET Supply Y Polarity to REV and check reading for <0.5mA

5.2.18 SET Supply Y Polarity to NORM and check reading for <0.5mA

CAUTION

The tester can only handle 15 amps. Immediately stop any test over 15 amps. Consider the test a fail, or contact engineering.

Functional Test

5.2.19 SET Test Mode switch to Functional position

NOTE - The amperage for various instruments is different, this is to determine if it is unusual for the tool type.

5.2.20 TURN the tool on and check the Functional Test meter for amps the tool runs at.

5.2.21 CHECK for unusual or excessive noise (defective bearings, defective switch).

5.2.22 CHECK for current in excess of name plate.

5.2.23 NOTIFY FWS of any corrective action needed.
5.3 Instruction for Portable Tool Inspection Tag Placement

NOTE - Steps to repair a portable tool may be performed at any time prior to close-out of work package. If unable to repair a portable tool, return portable tool to its normal storage location.

5.3.1 IF repairs are needed PERFORM the following:

5.3.1.1 PERFORM necessary repairs and document repairs on work record and/or data sheet comments section

5.3.1.2 REMOVE Out of Service tag

5.3.1.3 GO to Step 5.1

5.3.2 AFTER inspection, ENSURE (in visible location) a quarterly inspection tag is attached to the tool.

5.3.3 ENSURE the quarterly inspection tag is punched for passed tools.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Months</th>
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<tbody>
<tr>
<td>First</td>
<td>January, February, March</td>
</tr>
<tr>
<td>Second</td>
<td>April, May, June</td>
</tr>
<tr>
<td>Third</td>
<td>July, August, September</td>
</tr>
<tr>
<td>Fourth</td>
<td>October, November, December</td>
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5.3.4 COMPLETE portable electric tool record sheet.

NOTE - FWS will make the determination if the corrective action will require the performance of additional testing or calibration.

5.3.5 AFTER completion, NOTIFY FWS.

5.4 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Attachment 1

OUT OF SERVICE
Reason Item is Out Of Service

Remove this Tag when item is placed back in Service
SIGNS 373-6846

QUARTERLY CORD & TOOL INSPECTION
4 3 2 1 18
4 3 2 1 17
4 3 2 1 16
4 3 2 1 15
4 3 2 1 14