

**PROCEDURE 19 - Hand and Power Tool Safety**

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## Synopsis

This procedure provides requirements and recommended practices for using hand and power tools. The procedure applies to all NWS facilities and work locations where hand or power tools are used and to employees who use hand or power tools at NWS facilities.

### **Initial Implementation Requirements:**

- **Analyze Site Operations versus Requirements of the Procedure**
  - Perform inspection of Power Tools. *(19.3.4 & 19.3.7a.6)*
  - Determine appropriate Personal Protective Equipment (PPE). *(19.5.2b, 19.3.7b.1)*
  - Designate personnel permitted to use Power Tools. *(19.3.7a.5)*
  - Designate Hand and Power Tool Storage Areas. *(19.3.5)*
- **Develop/Obtain Documentation/Information required for Site**
  - Request Power Tool Operational Manuals. *(19.5.2c, 19.3.7b.2), as necessary*
- **Designate Person to Administer Hand and Power Tool Safety Procedure Requirements**
- **Provide Local Training of Site Personnel**
  - Training on Power Tools Safety.*(c)*
- **Inventory Material/Equipment (Procure as required)**
  - PPE. *(19.5.2b, 19.3.7b.1)*
  - Power Tools. *(19.5.2b, 19.3.2)*

### **Recurring and Annual Task Requirements:**

- **Perform Inspection/Assessment/Testing**
  - Conduct periodic inspection of Power Tools. *(19.3.4 & 19.3.7a.6)*
- **Review/Update Documentation/Information required for Site**
  - Review Power Tool Operational Manuals. *(19.3.7b.2)*
- **Provide Refresher Training of Site Personnel (If Applicable)**
  - Training on Power Tools Safety.*(19.3.7a.4,5)*
- **Inspect/Replace/Recalibrate/Maintain Material/Equipment**
  - Power Tools. *(19.5.2b, 19.3.4 & 19.3.7a.6)*
  - PPE. *(19.5.2b, 19.3.7b.1)*

**Hand and Power Tool Safety Checklist**

<b>Requirements</b>	<b>Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
<i>Hand Tools and Equipment</i>					
Is initial and annual review of this procedure conducted and documented?	19.4.2				
Are appropriate Personal Protective Equipment (e.g., safety glasses, face-shields, etc.) used while using hand tools or equipment which might produce flying materials or be subject to breakage?	19.3.1& 19.3.6				
Are all Hand Tools and Equipment inspected prior to use?	19.3.2				
Are all defective Hand Tools and Equipment replaced, serviced, or repaired prior to use?	19.3.2				
Are all tools and equipment, used by employees at their workplace, in good condition?	19.3.3 & 4				
Are hand tools such as chisels and punches, which develop mushroomed heads during use, reconditioned or replaced as necessary?	19.3.2				
Are broken or fractured handles on hammers, axes and similar equipment replaced promptly?	19.3.2				
Are employees made aware of the hazards caused by faulty or improperly used hand tools?	19.3.2				
Are tool cutting edges kept sharp so the tool will move smoothly without binding or skipping?	19.3.2				
Are tools stored in dry, secure locations?	19.3.5				
Is eye and face protection used when driving hardened or tempered	19.3.6				

Requirements	Reference	YES	NO	N/A	Comments
spuds or nails?					
<b><i>Portable (Power Operated) Tools and Equipment</i></b>					
Are all Power Tools of approved doubled-insulated type or grounded according to this procedure?	19.3.7a.1				
Are all qualified employees authorized and trained to operate all Power Tools?	19.3.7a.5				
Are all employee provided with appropriate Personal Protective Equipment when using Portable Tools and Equipment?	19.3.1				
Are all Portable Tools and Equipment inspected prior to use?	19.3.2				
Are all defective Portable Tools and Equipment replaced, serviced, or repaired prior to use?	19.3.2				
Are all tools and equipment, used by employees at their workplace, in good condition?	19.3.3 & 4				
Are Power Tools used with the correct shield, guard, or attachment recommended by the manufacturer?	19.3.7a.3				
Are rotating or moving parts of equipment guarded to prevent physical contact?	19.3.7a.3				
Are portable fans provided with full guards or screens having opening of 1/2" or less?	19.3.7a.3				
Are pneumatic and hydraulic hoses on power operated tools checked regularly for deterioration or damage?	19.3.4				

## **19 HAND AND POWER TOOL SAFETY**

### **19.1 Purpose and Scope**

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating requirements for using hand and power tools. This procedure applies to all NWS facilities and work locations where hand or power tools are used and to employees who use hand or power tools at NWS facilities.

### **19.2 Definitions**

Field Office. A Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), and a Data Collection Office (DCO).

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Field Support Center (SFSC).

Qualified Person. Means a person with the specific training, knowledge and experience in the area for which the person has the responsibility and the authorization to control.

Station Manager. For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8; Space Weather Prediction Center, NP9)); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### **19.3 Procedure**

19.3.1 The employer shall provide and demonstrate, as needed, the appropriate personal protective equipment (PPE) to be used with hand and power tools at the NWS.

19.3.2 The employee shall inspect all tools prior to use. Any defective tool or equipment shall be replaced, corrected or repaired prior to use.

- a. Any cracked blades, wheels or pulleys of tools or equipment shall be removed from service. (Power saws, floor and hand grinders).
- b. Any impact tool shall be kept free of mushroomed heads (Chisels, punches, hammers).
- c. Wooden handles of tools shall be kept free of splinters and cracks and shall be securely attached to the tool.

19.3.3 Each employee is responsible for the safe operation and condition of the tools and equipment that he/she uses.

19.3.4 During the work shift, employees shall periodically inspect the condition of the tools and equipment in use.

19.3.5 After using tools and equipment, employees shall clean and return the tools and equipment to their designated areas.

19.3.6 Hand Tools. Eye protection shall be worn when using hand tools in operations where fragments are generated. Additional PPE may be required to protect from exposures to harmful noise, dust, fumes, mists, vapors, and gases.

19.3.7 Power Tools.

a. General Provisions.

- (1) Electric power tools shall either be of the approved doubled-insulated type or grounded according to National Electric Code (NEC) 250-114 and local regulations.
- (2) Powering of electric power tools shall conform to NEC and local regulations.
- (3) All guards that are part of each power operated tool shall remain installed while in use unless the guard proves to provide a greater hazard in use. Guarding shall meet the requirements set forth by the American National Standards Institute (ANSI) B11.1.
- (4) Employees shall be trained about the hazards and the proper use and care of powered tools and equipment.
- (5) Only qualified personnel who are authorized and trained to use power tools shall be permitted to operate such tools.
- (6) Plug and cord-connected power tools shall be inspected by users before and after usage. This inspection may include the following:
  - i Missing, corroded, or damaged plug prongs
  - ii Frayed, worn, burned, or missing insulation
  - iii Exposed conductors
  - iv Loose or poor connections
  - v Missing or improper sized fuses
  - vi Damaged or cracked cases
  - vii Burns or scorch marks
- (7) All power tools shall be in control of the operator.
- (8) All power tools shall be equipped with a constant pressure switch or control and may have a lock on control provided that turnoffs can be accomplished with a single motion of the same finger or fingers that turn it on.
- (9) All hand-held, gasoline-powered tools shall be equipped with a constant pressure throttle that will deactivate the power to the tool motion when the pressure is released.

- (10) All gasoline-powered tools shall be used in well-ventilated areas.
  - (11) Hydraulic power tools shall be used only with approved fire-resistant fluids.
  - (12) It is recommended that electric tools used outside have a ground fault interrupt connector (GFIC) device placed on the electrical cord.
- b. Employee Requirements.
- (1) Employees shall wear the PPE specified by the equipment manufacturer, by federal, state, or local regulations, or by NWS procedures when operating power tools.
  - (2) Employees shall review the operator's manual prior to initial use of a tool and review periodically as needed.
  - (3) Employees shall not hoist or lower electric tools by their cords.

#### 19.3.8 Lawnmower Safety

- a. All power-driven chains, belts, and gears shall be so positioned or otherwise guarded to prevent the operator's accidental contact, during normal starting, mounting, and operation of the machine.
- b. The words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording shall be clearly visible at an engine starting control point on self-propelled mowers.
- c. Warning instructions shall be affixed to the mower near the opening stating that the mower shall not be used without either the catcher assembly or the guard in place.
- d. A shutoff device shall be provided to stop operation of the motor or engine. This device shall require manual and intentional reactivation to restart the motor or engine.
- e. The catcher assembly or the guard shall be shipped and sold as part of the mower. The instruction manual shall state that the mower shall not be used without either the catcher assembly or the guard in place.
- f. The catcher assembly, when properly and completely installed, shall not create a condition which violates the limits given for the guarded opening.
- g. The word "Caution" or stronger wording shall be placed on the mower at or near each discharge opening.
- h. The mower handle shall be fastened to the mower so as to prevent loss of control by unintentional uncoupling while in operation.
- i. A positive upstop or latch shall be provided for the mower handle in the normal operating position(s). The upstop shall not be subject to unintentional disengagement during normal operation of the mower. The upstop or latch shall

not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.

19.3.9 Compressed Air Sources

- a. Maximum air pressure approved for general use is 30 psi.
- b. Compressed air is not to be used to blow dirt, chips, or dust from clothing.

**19.4 Responsibilities**

19.4.1 Regional or Operating Unit Environmental/Safety Coordinators

- a. Will monitor and promote compliance with the requirements of this procedure at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or Operating Unit facilities.

19.4.2 Station Manager

- a. Will have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.
- b. Will ensure that appropriate power tools and PPE are selected and provided for employees and adequate stock is maintained.
- c. Will ensure that power tools manuals are available.
- d. Will review or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

19.4.3 NWS Headquarters (NWSH)

- a. The NWS Safety Office will provide assistance to Regional Headquarters, Operating Units, and field personnel to ensure that NWS facilities comply with requirements of this procedure.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this procedure.

19.4.4 Safety or Environmental/Safety Focal Point

- a. Will ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.
- b. Will perform periodic inspections of tools and equipment and report or remove from service any tools that are defective.
- c. Will inspect all new tools and equipment received before they are put into service.

#### 19.4.5 Employees

Individual employees affected by this procedure are required to read, understand and comply with the requirements of this procedure and report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.

<b>NOTE:</b> Reference NWS PD 50-11 for complete list of responsibilities <a href="http://www.weather.gov/directives/050/pd05011c.pdf">http://www.weather.gov/directives/050/pd05011c.pdf</a>
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### **19.5 References**

Incorporated References. The following list of references is incorporated as a whole or in part into this procedure. These references can provide additional explanation or guidance for the implementation of this procedure.

- 19.5.1 American National Standards Institute (ANSI) B11.1, “Safety Requirements for Mechanical Power Presses.”
- 19.5.2 National Electric Code (latest edition) 250-114 “Equipment Connected by Cord and Plug.”
- 19.5.3 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.242, “Hand and Portable Powered Tools and Equipment.”
- 19.5.4 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.243, “Guarding of Portable Powered Tools.”
- 19.5.5 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.244, “Other Portable Tools and Equipment.”
- 19.5.6 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1926.21, “Safety Training and Education.”
- 19.5.7 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1926, Subpart I - “Tools-Hand and Power.”
- 19.5.8 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910, Subpart I - “Personal Protective Equipment.”

Additional information can be found at: <https://www.osha.gov/SLTC/handpowertools/>

### **19.6 Attachments**

None