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hazardous defects are indicated such tools shall be removed from service.

(e) *Measuring tapes or measuring ropes.* Measuring tapes or measuring ropes which are metal or contain conductive strands shall not be used when working on or near energized parts.

(f) *Handtools.* (1) Switches for all powered hand tools shall comply with §1926.300(d).

(2) All portable electric handtools shall:

(i) Be equipped with three-wire cord having the ground wire permanently connected to the tool frame and means for grounding the other end; or

(ii) Be of the double insulated type and permanently labeled as "Double Insulated"; or

(iii) Be connected to the power supply by means of an isolating transformer, or other isolated power supply.

(3) All hydraulic tools which are used on or around energized lines or equipment shall use nonconducting hoses having adequate strength for the normal operating pressures. It should be noted that the provisions of §1926.302(d)(2) shall also apply.

(4) All pneumatic tools which are used on or around energized lines or equipment shall:

(i) Have nonconducting hoses having adequate strength for the normal operating pressures, and

(ii) Have an accumulator on the compressor to collect moisture.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 59 FR 40730, Aug. 9, 1994]

§ 1926.952 Mechanical equipment.

(a) *General.* (1) Visual inspections shall be made of the equipment to determine that it is in good condition each day the equipment is to be used.

(2) Tests shall be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition.

(3) No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

(i) The vehicle has a reverse signal alarm audible above the surrounding noise level or:

(ii) The vehicle is backed up only when an observer signals that it is safe to do so.

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(b) *Aerial lifts.* (1) The provisions of §1926.556, subpart N of this part, shall apply to the utilization of aerial lifts.

(2) When working near energized lines or equipment, aerial lift trucks shall be grounded or barricaded and considered as energized equipment, or the aerial lift truck shall be insulated for the work being performed.

(3) Equipment or material shall not be passed between a pole or structure and an aerial lift while an employee working from the basket is within reaching distance of energized conductors or equipment that are not covered with insulating protective equipment.

(c) *Derrick trucks, cranes and other lifting equipment.* (1) All derrick trucks, cranes and other lifting equipment shall comply with subpart N and O of this part except:

(i) As stated in §1926.550(a)(15) (i) and (ii) relating to clearance (for clearances in this subpart see Table V-1) and

(ii) Derrick truck (electric line trucks) shall not be required to comply with §1926.550(a)(7)(vi), (a)(17), (b)(2), and (e).

(2) With the exception of equipment certified for work on the proper voltage, mechanical equipment shall not be operated closer to any energized line or equipment than the clearances set forth in §1926.950(c) unless:

(i) An insulated barrier is installed between the energized part and the mechanical equipment, or

(ii) The mechanical equipment is grounded, or

(iii) The mechanical equipment is insulated, or

(iv) The mechanical equipment is considered as energized.

§ 1926.953 Material handling.

(a) *Unloading.* Prior to unloading steel, poles, cross arms and similar material, the load shall be thoroughly examined to ascertain if the load has shifted, binders or stakes have broken or the load is otherwise hazardous to employees.

(b) *Pole hauling.* (1) During pole hauling operations, all loads shall be secured to prevent displacement and a red flag shall be displayed at the trailing end of the longest pole.

(2) Precautions shall be exercised to prevent blocking of roadways or endangering other traffic.

(3) When hauling poles during the hours of darkness, illuminated warning devices shall be attached to the trailing end of the longest pole.

(c) *Storage.* (1) No materials or equipment shall be stored under energized bus, energized lines, or near energized equipment, if it is practical to store them elsewhere.

(2) When materials or equipment are stored under energized lines or near energized equipment, applicable clearances shall be maintained as stated in Table V-1; and extraordinary caution shall be exercised when moving materials near such energized equipment.

(d) *Tag line.* Where hazards to employees exist tag lines or other suitable devices shall be used to control loads being handled by hoisting equipment.

(e) *Oil filled equipment.* During construction or repair of oil filled equipment the oil may be stored in temporary containers other than those required in §1926.152, such as pillow tanks.

(f) *Framing.* During framing operations, employees shall not work under a pole or a structure suspended by a crane, A-frame or similar equipment unless the pole or structure is adequately supported.

(g) *Attaching the load.* The hoist rope shall not be wrapped around the load. This provision shall not apply to electric construction crews when setting or removing poles.

§ 1926.954 Grounding for protection of employees.

(a) *General.* All conductors and equipment shall be treated as energized until tested or otherwise determined to be deenergized or until grounded.

(b) *New construction.* New lines or equipment may be considered deenergized and worked as such where:

(1) The lines or equipment are grounded, or

(2) The hazard of induced voltages is not present, and adequate clearances or other means are implemented to prevent contact with energized lines or equipment and the new lines or equipment.

(c) *Communication conductors.* Bare wire communication conductors on power poles or structures shall be treated as energized lines unless protected by insulating materials.

(d) *Voltage testing.* Deenergized conductors and equipment which are to be grounded shall be tested for voltage. Results of this voltage test shall determine the subsequent procedures as required in §1926.950(d).

(e) *Attaching grounds.* (1) When attaching grounds, the ground end shall be attached first, and the other end shall be attached and removed by means of insulated tools or other suitable devices.

(2) When removing grounds, the grounding device shall first be removed from the line or equipment using insulating tools or other suitable devices.

(f) Grounds shall be placed between work location and all sources of energy and as close as practicable to the work location, or grounds shall be placed at the work location. If work is to be performed at more than one location in a line section, the line section must be grounded and short circuited at one location in the line section and the conductor to be worked on shall be grounded at each work location. The minimum distance shown in Table V-1 shall be maintained from ungrounded conductors at the work location. Where the making of a ground is impracticable, or the conditions resulting therefrom would be more hazardous than working on the lines or equipment without grounding, the grounds may be omitted and the line or equipment worked as energized.

(g) *Testing without grounds.* Grounds may be temporarily removed only when necessary for test purposes and extreme caution shall be exercised during the test procedures.

(h) *Grounding electrode.* When grounding electrodes are utilized, such electrodes shall have a resistance to ground low enough to remove the danger of harm to personnel or permit prompt operation of protective devices.

(i) *Grounding to tower.* Grounding to tower shall be made with a tower clamp capable of conducting the anticipated fault current.

(j) *Ground lead.* A ground lead, to be attached to either a tower ground or